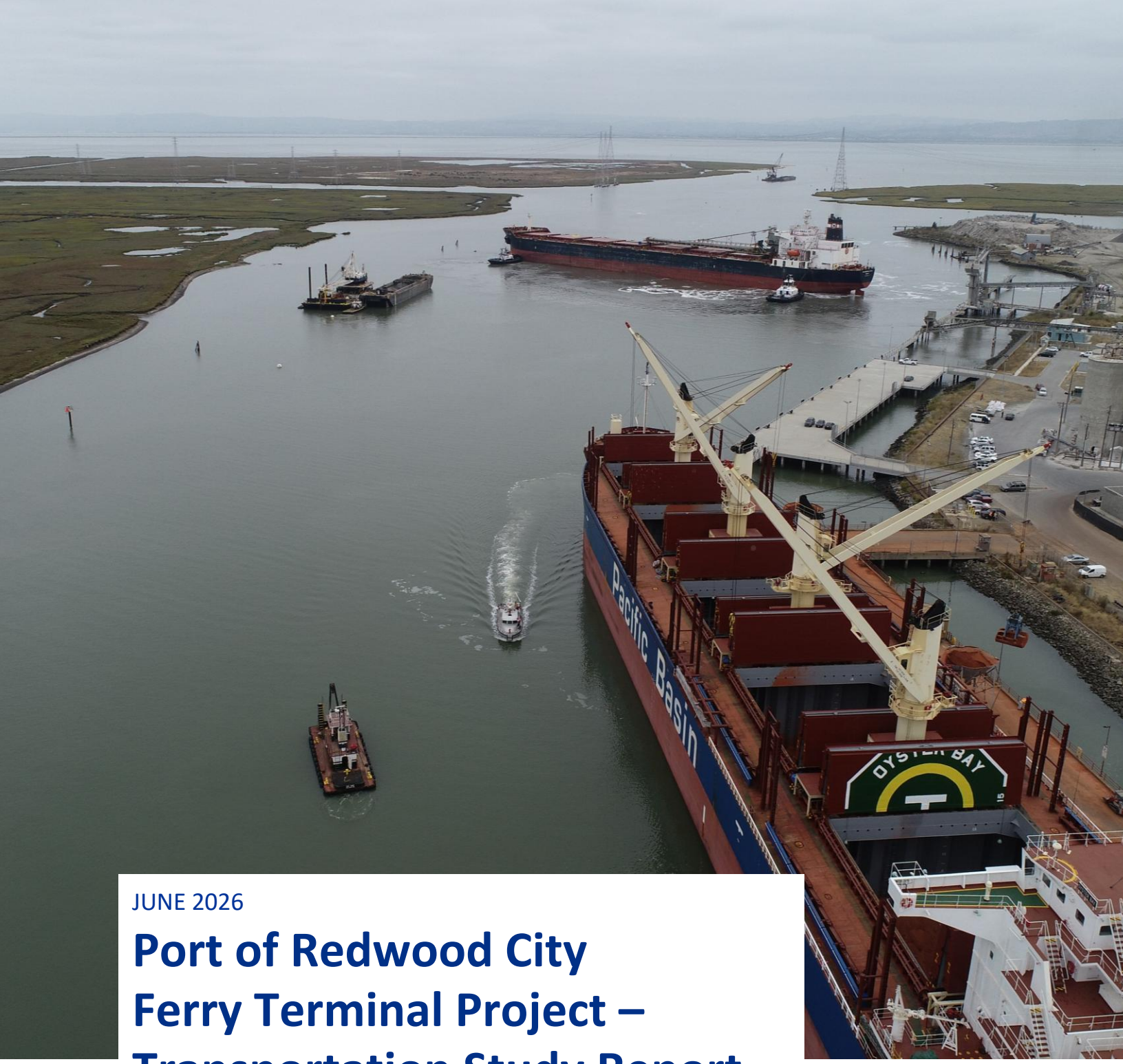
Appendix H

Transportation Study Report



JUNE 2026

Port of Redwood City Ferry Terminal Project – Transportation Study Report

Prepared for:

Port of Redwood City

CDM Smith

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Section 1
Introduction

The Port of Redwood City (Port), the lead agency under the California Environmental Quality Act (CEQA), is studying the environmental effects of the proposed Port of Redwood City Ferry Terminal Project (proposed project/project) located on a 9.2-acre site in San Mateo County Assessor's Parcel Number (APN) 054300380 in the San Francisco Bay Area, California. The proposed project would provide San Francisco Bay Ferry-operated passenger ferry service from a newly constructed ferry terminal at the Port with origin and destination points of San Francisco and Oakland. San Francisco Bay Ferry is a regional public ferry service with operations overseen by the Water Emergency Transportation Authority (WETA). The proposed project would also include multi-modal access improvements, an extension of the Bay Trail, relocation of existing infrastructure, and a zone change to allow future visitor-serving uses of a hotel, standalone restaurant, and small office adjacent to the ferry terminal. The ferry terminal and future visitor-serving uses would be on-site, while the access improvements would be off-site. The access improvements would be implemented with construction of the ferry terminal, and the construction of the visitor-serving uses would occur after the ferry terminal and access improvements are implemented.

1.1 Proposed Project Description

Ferry services have played an important role in the development of the San Francisco Bay Area transportation network, and they offer a convenient and practical mobility alternative to congested land-based transportation and public transit services. In its 2016 Strategic Plan,[1] WETA, who oversees the operation and expansion of the San Francisco Bay Ferry services, envisioned eleven new ferry terminals, including a new terminal in Redwood City, and eight new routes by the year 2035. In May 2024, the WETA Board approved a 2050 Service Vision and Expansion Policy[2] that identifies a ferry terminal at Redwood City as one of four Tier 1 priority projects for expanding the ferry network. The Port of Redwood City has long been considered a potential ferry terminal site. A Redwood City – San Francisco route was identified in an Implementation and Operations Plan (IOP)[3] prepared in 2002 for the expansion of ferry service in the San Francisco Bay Area and evaluated in a 2003 Program EIR.[4] The first planning study for the terminal was completed in 2007,[5] which identified the San Francisco route and a possible route between Oakland and Redwood City. The first Redwood City and WETA study of ferry service at a Port of Redwood City site

[1] Water Emergency Transportation Authority (WETA). 2016. 2016 Strategic Plan. Available: https://weta.sanfranciscobayferry.com/sites/default/files/weta/strategicplan/WETAStrategicPlanFinal.pdf.

[2] WETA. May 9, 2024. 2050 Service Vision and Expansion Policy, adopted by WETA Board – Resolution 2024-19. Available: https://www.bayferry2050.org/service-vision.

[3] WETA (formerly Water Transit Authority). 2002. A Strategy to Improve Public Transit with an Environmentally Friendly Ferry System: Final Implementation & Operations Plan.

[4] WETA (formerly Water Transit Authority). June 2003. Expansion of Ferry Transit Service in the San Francisco Bay Area Final Program Environmental Impact Report. Prepared by URS Corporation.

[5] Port of Redwood City. 2007. Port of Redwood City Ferry Terminal Locational Analysis, Environmental Assessment, & Conceptual Design. Prepared by CHS Consulting Group. Available: https://www.redwoodcity.org/home/showpublisheddocument?id=18192.

was conducted in 2012.[6] In 2020, the Port adopted the 2020 Vision Plan,[7] a long-term strategic vision with the goal of strengthening the Port's impact to the region's economy and quality of life. The 2020 Vision Plan identifies a ferry terminal at the Port as a key component of this vision.

The underlying purpose of the proposed ferry terminal project is to implement the expansion of ferry service identified in WETA's 2050 Service Vision and Expansion Policy and 2016 Strategic Plan and the Port's 2020 Vision Plan, thereby providing a new Bay Area transit option. The proposed project also includes future visitor-serving uses, the purpose of which is to create a new Port waterfront destination by encouraging commercial and recreational uses pursuant to the Port's 2020 Vision Plan. The proposed project includes off-site access improvements to improve vehicle and non-motorized transportation modes to the project site and nearby waterfront park. A summary of the proposed project components is provided below.

1.1.1 Ferry Terminal and Service

The proposed project would provide San Francisco Bay Ferry-operated passenger ferry service at Redwood City with origin and destination points of San Francisco and Oakland. The proposed ferry routes are shown in **Figure 1.1** and the proposed on-site and off-site improvements are shown in **Figure 1.2** and **Figure 1.3** respectively. Ferry service would be provided by San Francisco Bay Ferry with initial service during weekday morning and afternoon commute periods between the hours of approximately 6 AM to 9 PM at an average frequency of one every hour using ferry vessels capable of carrying up to 320 passengers. As the ferry service matures, midday, evening, weekend, and special event service may be added. The service would be passenger only and would not transport vehicles. Transport of bicycles and small non-gas powered mobility devices, such as skateboards and scooters, would be allowed pursuant to WETA/San Francisco Bay Ferry operating rules and U.S. Coast Guard (USCG) regulations. The ferry terminal would have waterside and landside components, including a floating ferry dock with berths for two vessels, a gangway that provides a walkway connecting the float to the landside terminal facilities, and a fixed access pier with a security gate and canopy that provides access to the gangway. Other features include kiosks, an interim portable restroom facility, bicycle storage, a surface parking lot, and new utilities required to establish the proposed ferry service. WETA has a program in place to transition their fleet to zero-emission propulsion technology that includes electrification of ferry floats and development of high-speed, high-capacity zero-emission vehicles. There is no feasible zero emission technology currently available for ferries to serve the proposed Redwood City routes. If electric vessels are used in the future to transition the Redwood City route to zero-emission vessels, however, the proposed ferry terminal design would comply with WETA standard design recommendations for accommodating such electric vessels.

[6] WETA. July 2012. Redwood City Ferry Terminal - Site Feasibility Report (Draft). Prepared by KPFF Consulting Engineers. Available: https://www.redwoodcity.org/home/showpublisheddocument?id=18035.

[7] Port of Redwood City. January 8, 2020. Port of Redwood City 2020 Vision Plan. Prepared by Vickerman & Associates, LLC. Available: 2020 Vision | Port of Redwood (redwoodcityport.com).

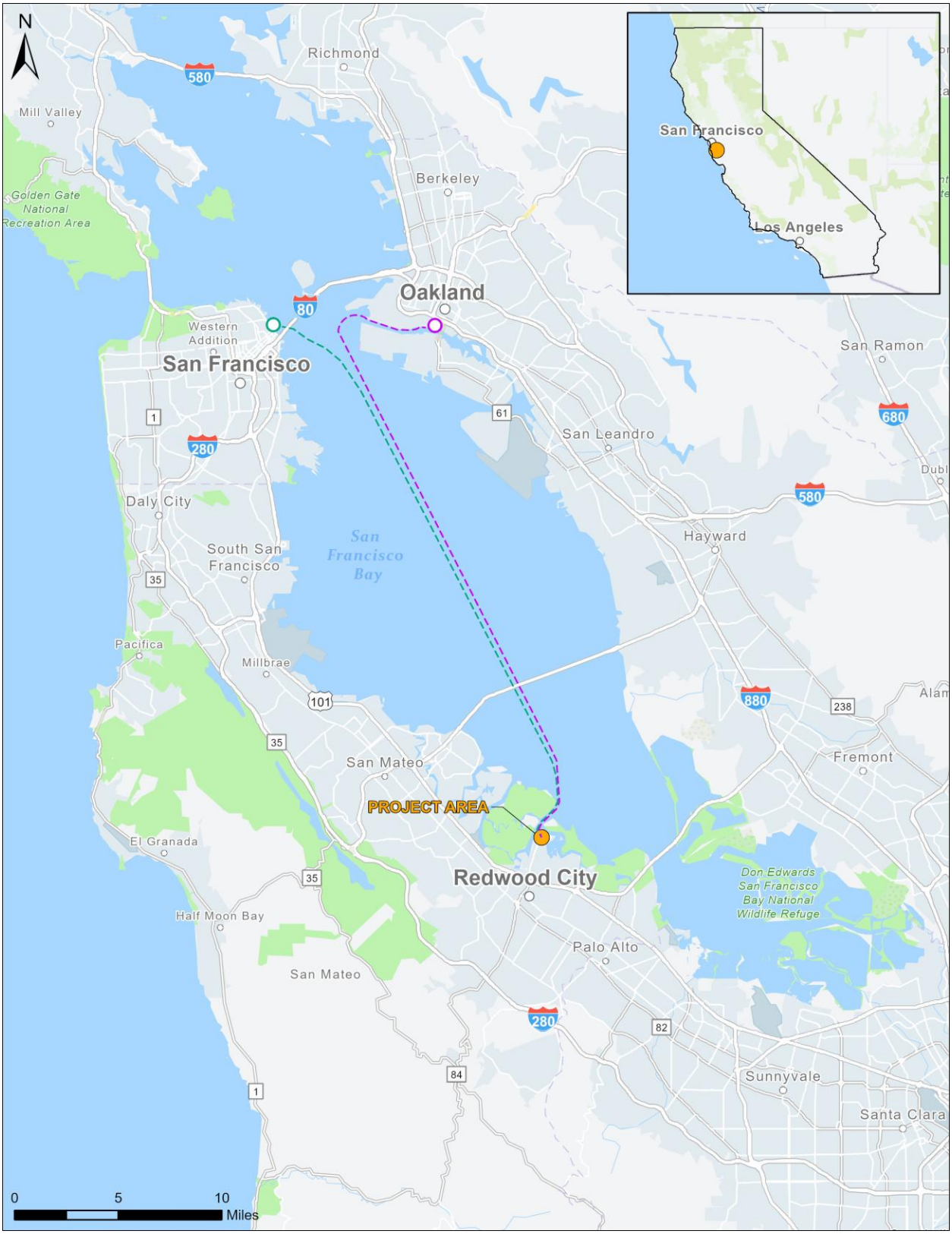


Figure 1.1 Proposed Project Location and Proposed Ferry Service Routes Map

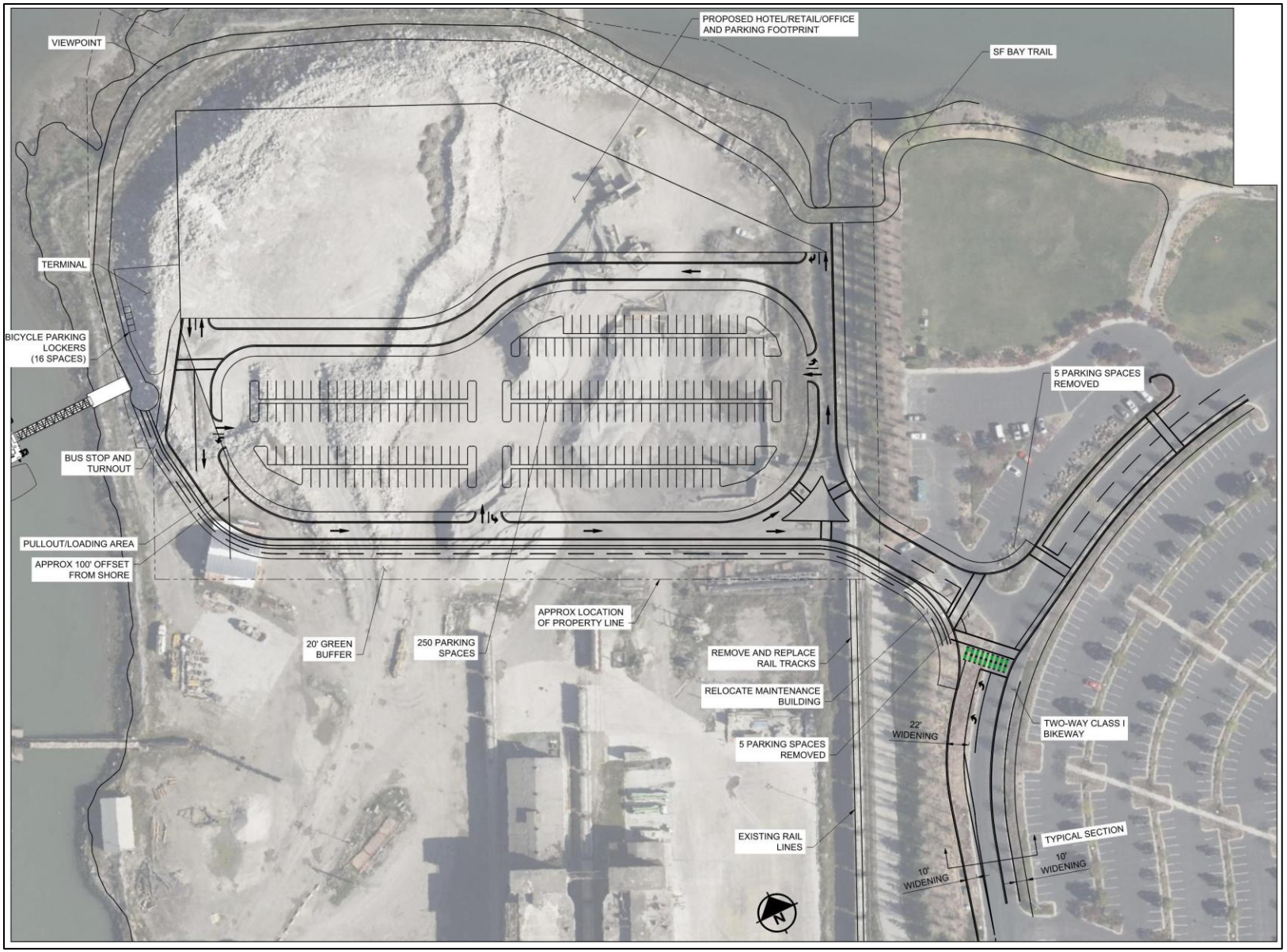


Figure 1.2 Proposed Project On-Site Improvements



Figure 1.3 Proposed Project Off-Site Improvements

1.1.2 Future Visitor-Serving Uses

The proposed project would include a zone change by the City of Redwood City to change the zoning classification of the project site from General Industrial (GI) to General Commercial (CG). This would allow for the construction of visitor-serving uses (in the northern part of the proposed project site as shown in **Figure 1.2**) comprised of an up to three-story full-service hotel (with a maximum of 180,000 square feet total and that may include 100 to 200 rooms, and related services such as bar/restaurant, and conference/meeting rooms); a standalone restaurant (up to 20,000 square feet); a standalone office space (up to 10,000 square feet); and a permanent restroom facility at the ferry terminal. New utilities and utility connections and additional parking would also be required to serve the new development. The precise number of parking spaces and location required would be determined according to the City's requirements at the time specific development is proposed. It is assumed that the parking for the visitor-serving uses would be provided on the ground floor of the hotel, but it may also include some surface parking. It is assumed that a portion of the parking would be shared parking with the ferry terminal.

1.1.3 Access Improvements

The proposed project also includes widening the Seaport Boulevard loop from the Pacific Shores Center entrance to the ferry terminal site to accommodate a bicycle trail and sidewalk, and extending the Bay Trail along the northern edge of the project site to the ferry terminal as shown in **Figure 1.2**. This would include improvements at the Seaport Boulevard intersection to facilitate a connection from the existing trail south of Pacific Shores Center to the proposed bicycle and pedestrian improvements. To maintain the existing landscaped entry design and signage at the Pacific Shores Center entrance, the roadway would be shifted to the southwest and the proposed bicycle trail and sidewalk would be on the northeast in the footprint of the existing roadway. Approximately 200 feet of roadway to the east would also be shifted to the southwest. Leaving the roadway where it is and widening it to the northeast would require major changes to the gateway sign and landscaping. Shifting the road to the southwest avoids this impact and involves a similar amount of new pavement construction and right-of-way.

The future on-site trail and sidewalk will connect to the Bay Trail segments along Seaport Boulevard and to the future US 101/ SR 84 Interchange Improvement Project.[8] Connection to future/planned improvements at the 101/84 interchange will create a seamless bike connection to Broadway and the central part of Redwood City. The relocation of existing infrastructure (e.g., railroad spur, terminus of Frontage Road, lighting and utilities, and a maintenance building) and modifications to an existing public parking lot would be required to accommodate the proposed access improvements. The access improvements would be implemented concurrently with the construction of the ferry terminal.

Local shuttle service would provide public transit to and from the ferry terminal. The existing Seaport Center Caltrain shuttle that operates between the Caltrain Redwood City Station and the Pacific Shores Center and Seaport Center would serve the project site. The shuttle would provide connectivity to downtown Redwood City and other transit connections including the San Mateo County Transit District (SamTrans) Redwood City Transit Center that is co-located with the Caltrain Redwood City Station. Several

[8] City of Redwood City. 2025. SR84 – US101 Interchange Reimagined webpage, - Project Overview. Available: https://www.redwoodcity.org/departments/community-development-department/engineering-transportation/transportation-parking/101-woodside-interchange#Project%20Overview. Accessed June 20, 2025.

larger employers in the area operate private shuttles for employees to and from transit centers, which could also provide a connection to the ferry terminal either as a ferry terminal stop or from a connecting location. There are multiple transit connections from the San Francisco Ferry Terminal and the Jack London Square Ferry Terminal in Oakland that would provide local and regional access to ferry passengers embarking and disembarking in San Francisco and Oakland. This includes Muni Metro bus service in San Francisco and AC Transit, Amtrak, and Capital Corridor connections in Oakland.

The project site would be accessed from the western leg of the Seaport Boulevard loop road. Vehicles would travel north on Seaport Boulevard and onto the Seaport Boulevard loop road at the entrance to the Pacific Shores Center. The entrance to the Pacific Shores Center is an all-way stop-controlled intersection. Vehicles would turn left at the intersection then travel north along the western leg of the Seaport Boulevard loop road and turn left onto the new access road into the project site. The access road would have one lane in either direction for vehicles entering and exiting the project site. The intersection of the access road and Seaport Boulevard would be controlled by an all-way stop. A minimum 140-foot left turn pocket on Seaport Boulevard would be provided for vehicles turning left into the project site. Vehicles exiting the project site could turn left or right onto Seaport Boulevard, but most vehicles would turn right to exit the Pacific Shores Center. The new site access road would eliminate one of two existing entrances to the existing public parking lot for the waterfront park east of the project site, thereby limiting parking lot access to the northern driveway from Seaport Boulevard loop. The one driveway that would remain for the public parking lot would provide access in and out and it would be located away from the new access road to avoid conflicts with vehicles going to and from the ferry terminal site.

As described above, the entrance to the Pacific Shores Center is currently an all-way stop-controlled intersection. The intersection analysis in this report that is separate from and not required under the CEQA evaluation indicates that this intersection would operate with high service delays and low speeds (Level of Service F) at peak hours by 2040 due to future cumulative traffic increases associated with the proposed project and the Pacific Shores Center businesses (cumulative [2040] project conditions). To address the projected future traffic delays, the proposed project would install a traffic signal at this intersection to improve traffic flow under future cumulative conditions. This analysis assumes installation of the traffic signal in 2039 and operation by 2040. However, should future intersection conditions indicate that a traffic signal is required prior to 2040 to meet City standards, the Port would install the traffic signal at an earlier date.

1.1.4 Plan Amendments

In addition to the zone change discussed above, the proposed project also includes an amendment to the San Francisco Bay Conservation and Development Commission (BCDC)'s San Francisco Bay Area Seaport Plan[9] (Seaport Plan) to allow visitor-serving amenities at the project site consistent with the Port's 2020 Vision Plan.[10] The Seaport Plan includes the project site as part of the Port Priority Use Area (PUA) for the Port of Redwood City, which requires the land to be protected and reserved for port purposes. Under the PUA, uses such as hotels and restaurants are only allowed as an interim use. The proposed project would

[9] San Francisco Bay Conservation and Development Commission (BCDC). November 2023. San Francisco Bay Area Seaport Plan. Available: https://bcdc.ca.gov/resources/plans/.

[10] Port of Redwood City. January 8, 2020. Port of Redwood City 2020 Vision Plan. Prepared by Vickerman & Associates, LLC. Available: 2020 Vision | Port of Redwood (redwoodcityport.com).

amend the Seaport Plan to adjust the boundaries of the PUA to exclude the project site to allow the establishment of future visitor-serving uses as a long-term use. Additionally, the proposed project includes an amendment to the San Francisco Vessel Mutual Assistance Plan[11] (SF-VMAP) to incorporate the Redwood City ferry service and vessels into the SF-VMAP's list of participating boats/routes that may be called upon to assist in the evacuation of another stricken ferry vessel and would also receive aid if under the mutual assistance plan should it be needed. The amendment would ensure that the Redwood City Ferry service is included in the planning, coordination, and implementation in the event of an emergency.

1.2 Agencies and Transportation-related Roles in Proposed Project

Agencies, as listed below, are participating in the current planning efforts and/or transportation operations associated with future design and operations of the proposed project. The transportation-related roles of the agencies, in the proposed project context, are described as follows:

- **Port of Redwood City**
  - Owns the project site that that would generate all project trips
  - Would determine the characteristics (size and type) of proposed developments and manage the site development, circulation, and access
- **WETA**
  - Oversees the operation of San Francisco Bay Ferry passenger ferry services in San Francisco Bay Area
  - Manages vessel operations to/from the proposed project ferry terminal facility
- **Redwood City**
  - Houses the project site that would generate all project trips and existing developments that receive the largest share of the project generated trips
  - Manages local transportation access facilities (roads, paths, sidewalks) to the project site
- **City/County Association of Governments of San Mateo County (C/CAG)**
  - Administers the San Mateo County Congestion Management Program (CMP)
  - Manages the countywide congestion impact of new development
- **California Department of Transportation (Caltrans)**
  - Manages intersections on the State highway system that provide local transportation access to the project site

[11] U.S. Coast Guard, Sector San Francisco Bay. May 30, 2021. San Francisco Vessel Mutual Assistance Plan (SF-VMAP).

- Manages the operations of State highways that connect Redwood City with San Francisco and Oakland, which would experience travel reduction due to a shift in travel from highway mode to ferry mode

1.3 Purpose of this Report

This report serves two purposes. The first purpose of this report is to evaluate the proposed project's transportation impacts relative to CEQA. The second purpose is to meet regional/local transportation/traffic impact study requirements for the proposed project.

For the CEQA transportation analysis, the proposed project's impacts are evaluated using thresholds of significance; these thresholds are defined per CEQA Guidelines[12] Section 15064.3 and Appendix G checklist. For the non-CEQA transportation analysis, the impacts of the proposed project are evaluated using intersection level-of-service (LOS) and roadway segment volume-to-capacity (v/c) ratio LOS.

This report summarizes the results of the CEQA and non-CEQA transportation analyses for the proposed project performed under the following four scenarios: existing (2023) conditions, cumulative (2040) No Project (abbreviated to "no project") conditions, existing (2023) plus Proposed Project (abbreviated to "project") conditions, and cumulative (2040) project conditions.

1.3.1 CEQA Transportation Analysis Overview

Senate Bill 743 (SB 743)[13] (Stats. 2013, ch. 386), and SB 743-related requirements incorporated in the transportation/traffic impact study guidelines of Redwood City (2020 Transportation Analysis Manual [TAM]),[14] the City/County Association of Governments of San Mateo County (C/CAG) Congestion Management Program (CMP),[15] and the California Department of Transportation (Caltrans) transportation impacts guidance[16] together formed the basis of the CEQA transportation impact analysis. SB 743 implemented Statewide CEQA Guidelines changes that are relevant to the proposed project; specifically, SB 743 eliminated traffic congestion and automobile delay as metrics for determining significant impacts (Pub. Res. Code § 21099(b)(1); CEQA Guidelines § 15064.3(a)). CEQA Guidelines Section 15064.3(b) implements SB 743 and sets forth guidelines for determining the significance of automobile transportation impacts. SB 743 required the Governor's Office of Land Use and Climate Innovation (LCI) (formerly the Governor's Office of Planning and Research [OPR])[17] to establish new metrics for determining the

[12] California Natural Resources Agency (CNRA). 2018. CEQA Guidelines – Final Adopted Text. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf.

[13] California Legislative Information. 2013. SB 743 as Enrolled and Chaptered on September 27, 2013. Available: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743.

[14] City of Redwood City. July 21, 2020. RWCmoves Appendix F, Redwood City Transportation Analysis Manual. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311184673700000.

[15] City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP). Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

[16] California Department of Transportation (Caltrans). September 2020. Transportation Analysis under CEQA (TAC) - First Edition, Evaluating Transportation Impacts of State Highway System Projects. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf.

[17] The Governor's Office of Planning and Research (OPR) was renamed to the Governor's Office of Land Use and Climate Innovation (LCI), effective July 1, 2024.

significance of automobile transportation impacts of projects. LCI[18] selected vehicle miles traveled (VMT) as the preferred transportation impact metric and applied their discretion to require its use Statewide.

As per CEQA Guidelines[19] Section 15064.3 and Appendix G checklist for transportation, the CEQA transportation impact analysis uses the following evaluation thresholds:

(1) Would the proposed project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

(2) Would the proposed project conflict or be inconsistent with the criteria for evaluating impacts identified in Redwood City's 2020 TAM:

- If a land use change exceeds countywide per capita VMT thresholds for land use types identified in Redwood City's 2020 TAM; or
- If a transportation project would result in an increase in per capita VMT.

(3) Would the proposed project substantially increase hazards due to a geometric design feature or incompatible uses?

(4) Would the proposed project result in inadequate emergency access?

To evaluate the project's impacts under threshold 2 above, this transportation study estimated project trips and VMT, and to evaluate impacts under thresholds 1, 3, and 4 above, this transportation study conducted an alternate (transit/bike/pedestrian) modal system assessment, site access and circulation assessment (including entrance intersection, interior layout, parking for ferry use and emergency vehicle access), and safety assessment on project vicinity area roadways and, evaluated whether the proposed project would conflict with relevant transportation-related programs, plans, ordinances, and policies.

1.3.2 Non-CEQA Transportation Analysis Overview

The non-CEQA transportation impact analysis is comprised of a quantitative LOS analysis on area roadways. The LOS analysis estimated the proposed project effects for average weekday AM peak hour and average weekday PM peak hour in terms of average vehicle delay for intersections and volume-to-capacity (v/c) ratios for segments on the roadway network in the project vicinity, and applied Highway Capacity Manual (HCM)[20] methods to determine their LOS. The LOS methodologies are also based on the transportation/traffic impact study guidelines of Redwood City[21] and C/CAG.[22]

[18] California Governor's Office of Land Use and Climate Innovation (formerly Office of Planning and Research [OPR]). No date. SB 743 Frequently Asked Questions webpage. Available: https://opr.ca.gov/ceqa/sb-743/faq.html#:~:text=Starting%20on%20July%201%2C%202020%2C%20agencies%20analyzing%20the,a%20proposed%20project%20would%20create%20on%20California%20roads. Accessed August 30, 2024.

[19] California Natural Resources Agency (CNRA). 2018. CEQA Guidelines – Final Adopted Text. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf.

[20] National Academies of Sciences, Engineering, and Medicine. 2022. Highway Capacity Manual (HCM) 7th Edition: A Guide for Multimodal Mobility Analysis. Washington, DC: The National Academies Press.

[21] City of Redwood City. July 21, 2020. RWCmoves Appendix F, Redwood City Transportation Analysis Manual. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311118467370000.

[22] City/County Association of Governments of San Mateo County (C/CAG). 2023. San Mateo County Congestion Management Program (CMP), Appendix B: Traffic LOS Calculation Methods. October 2023. Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

1.4 Roadways Labeling Convention

This transportation study uses the following labeling convention:

- The main report (this transportation study report excluding attachments) assigned north/south direction labels to US 101 highway and its parallel arterials of Veterans Boulevard, East Bayshore Road, and Blomquist Street, and assigned east-west labels for the cross-streets to US 101, including Seaport Boulevard, Marsh Road, State Route (SR) 84 portions of Marsh Road and Woodside Road, Whipple Road, and Maple Street. This labeling convention overlooks the actual directional orientation of the roadways on the ground.
- **Attachment 9,** Synchro reports of intersection LOS analysis, exchange the label assignments as follows: north (in the main report) with west (in **Attachment 9**), south with east, east with north, and west with south, respectively. This is due to the development of Synchro models prior to the finalization of the labeling convention in the main report. The labeling differences are considered in the graphical representation and interpretation of the intersection LOS analysis results in the main report.

1.5 Organization of this Report

This report is organized into the following sections:

- **Section 1 - Introduction:** provides a summary of the proposed project, identifies the transportation-related roles of agencies in the context of the proposed project, describes the purpose and organization of this report, and discusses the labeling convention used for roadways.
- **Section 2 - Data and Methodologies:** presents detailed data and methodologies used in the transportation analyses.
- **Section 3 - Existing Conditions**: presents the regulatory setting (transportation plans, ordinances, guidelines, and policies) and environmental setting (existing and planned roadway network and alternative modal network, background traffic, VMT, and LOS, and traffic safety). This section includes the VMT and LOS analysis results under existing (2023) and cumulative (2040) no project conditions.
- **Section 4 - Project Impacts:** presents the transportation impacts of the proposed project in terms of changes in trips, traffic, VMT, alternate modal system and safety, and an assessment of site access and circulation based on the proposed project site location, design, and layout. This includes VMT analysis results under existing (2023) plus project and cumulative (2040) project conditions and side-by-side comparisons to existing (2023) and cumulative (2040) no project conditions. These results inform the CEQA transportation impacts evaluation of the proposed project as per the CEQA Guidelines Appendix G checklist for transportation in the EIR. This also includes LOS results under existing (2023) plus project and cumulative (2040) project conditions and side-by-side comparisons to existing (2023) and cumulative (2040) no project conditions to inform the non-CEQA transportation analysis.
- **Section 5 - Acronyms and Abbreviations:** provides the full names for acronyms and abbreviations used in this report.

- **Section 6 - References:** identifies the materials and documents consulted in preparing this report.
- **Attachments to this report**
  - **Attachment 1 - Project Area Intersection Configurations**: includes the schematics for the intersection configurations under existing (2023) and cumulative (2040) no project conditions.
  - **Attachment 2 - Project Area Segment Configurations**: includes the schematics for the intersection configurations under existing (2023) and cumulative (2040) no project conditions.
  - **Attachment 3 - Raw Turning Movement Counts (TMCs) and Average Daily Traffic Counts (ADTs)**: includes raw intersection and segment traffic counts taken on various dates, weekday AM and PM peak hour turning movement count diagrams, and hourly distribution charts for daily segment counts.
  - **Attachment 4 - Background Traffic Volume Diagrams**: includes weekday AM and PM peak hour background traffic volume diagrams for intersections and segments under existing (2023) and cumulative (2040) no project conditions.
  - **Attachment 5 - Ferry Ridership Adjustment Methodology**: includes details of the ridership adjustment methodology used to adjust the 2019 and 2040 ridership estimates in the Redwood City Ferry Business Plan[23] to baseline year (2023) and cumulative year (2040) values in this transportation analysis.
  - **Attachment 6 - Project Traffic Volume Diagrams**: includes 2023 and 2040 weekday AM and PM peak hour project traffic volume diagrams for intersections and segments.
  - **Attachment 7 - Background plus Project Traffic Volume Diagrams**: includes weekday AM and PM peak hour background plus project traffic volume diagrams for intersections and segments under existing (2023) plus project and cumulative (2040) project conditions.
  - **Attachment 8 - Signal Timing Data**: includes the signal timing data provided by Redwood City, Caltrans, and City of Menlo Park for the signalized project area intersections.
  - **Attachment 9 - Synchro Delay and Queuing Reports:** includes Synchro traffic analysis modeling related delay and queuing reports for intersections.
  - **Attachment 10 - Volume, Delay, V/C, and LOS Summary Tables:** includes tabulated summaries of volume, delay (for intersections), volume-to-capacity ratio (v/c) for segments), and LOS results for all scenarios.

[23] Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan. Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf.

Section 2
Data and Methodologies

This section presents the data and methodologies used in the transportation analysis. The CEQA Transportation Analysis and the non-CEQA transportation analysis share certain data inputs and modeling outputs; this section discusses the shared data and methods, followed by the specific CEQA transportation analysis and the non-CEQA transportation analysis methodologies.

2.1 Shared Data and Methods

2.1.1 Analysis Years Identification

For its 2023 Transportation Impact Fee Study,[24] Redwood City updated C/CAG's travel demand model (TDM) with a base year of 2015 and a forecast year of 2040 to a base year of 2023 by including 41 citywide land use projects completed between the years of 2015 and 2023 and updating the housing element in the City's plan to year 2023. Consistent with the City's study, this transportation impact analysis used the year 2023 for baseline conditions analysis and the year 2040 for cumulative conditions analysis.

2.1.2 Geographical Areas Identification for VMT Analysis

The proposed ferry terminal project element would provide a regional transit service across the San Francisco Bay Area, servicing the cities of Redwood City, San Francisco, and Oakland. The proposed visitor-serving uses would primarily serve Redwood City and its adjacent cities and unincorporated areas in San Mateo County. The transportation impact analysis used Redwood City, San Mateo County, and San Francisco Bay Area boundaries approximated to their associated transportation analysis zones (TAZs) boundaries in the 2023 Redwood City updated version of the C/CAG's TDM as the geographical areas for VMT analysis. The C/CAG's TDM provided population, employment, service population (population plus employment), and daily VMT within these TAZs as shown in **Table 2.1**. For the purpose of this analysis, TAZs have been used to better reflect trips to and from the future ferry terminal since the impact of a future ferry terminal would extend beyond Redwood City boundaries and may attract users from nearby areas. The City, County, and regional TAZ boundaries in the C/CAG travel demand model do not align perfectly with the geographic boundaries. The population, employment, and service population (which is the sum of population and employment) estimates for the geographies in the model differ from the U.S. Census estimates, which use geographic boundaries. The model estimates are the basis for the per capita VMT thresholds of significance estimation, so they are presented in **Table 2.1**. instead of U.S. Census estimates.

[24] City of Redwood City. December 2023 (update). Redwood City Transportation Impact Fee Study. Prepared by Economic & Planning Systems, Inc. and Hexagon Transportation Consultants, Inc. Available: https://www.redwoodcity.org/home/showpublisheddocument/27445/638388322844730000.

Table 2.1 Socioeconomic Data for VMT Analysis Geographies in 2023 and 2040

	Population* (persons)		Employment (persons)		Service Population (persons)		Daily VMT	
Geography	**2023**	**2040**	**2023**	**2040**	**2023**	**2040**	**2023**	**2040**
Redwood City TAZs	97,600	127,300	66,800	96,900	164,400	224,200	5,229,300	7,006,400
San Mateo County TAZs	822,500	950,400	412,300	492,200	1,234,800	1,442,600	37,500,700	44,154,100
San Francisco Bay Area TAZs	9,057,000	11,383,800	4,785,000	5,426,300	13,842,000	16,810,100	N/A**	N/A**

Source: Redwood City updated C/CAG's travel demand model with base year of 2023 and forecast year of 2040.

Notes:

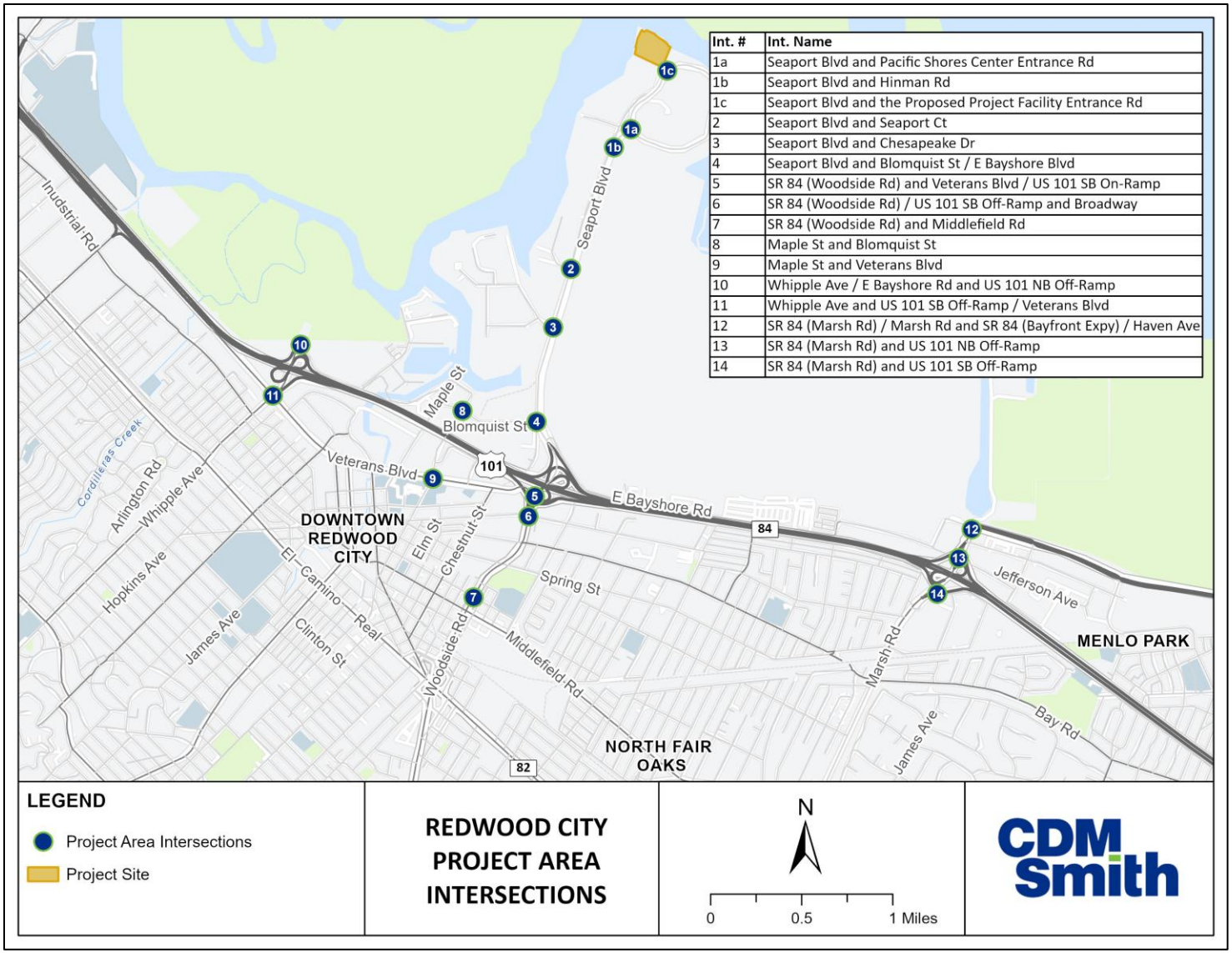
*The model estimates are the basis for the per capita VMT thresholds of significance estimation, so they are presented here instead of U.S. Census estimates.

**The baseline and cumulative criteria for the VMT analysis requires only baseline VMT for Redwood City TAZs and San Mateo County TAZs. Hence, the baseline VMT for San Francisco Bay Area TAZs was not required for the analysis and accordingly was not obtained by the consultant team.

Key: TAZs = Transportation Analysis Zones, VMT = vehicle miles traveled, N/A = not available

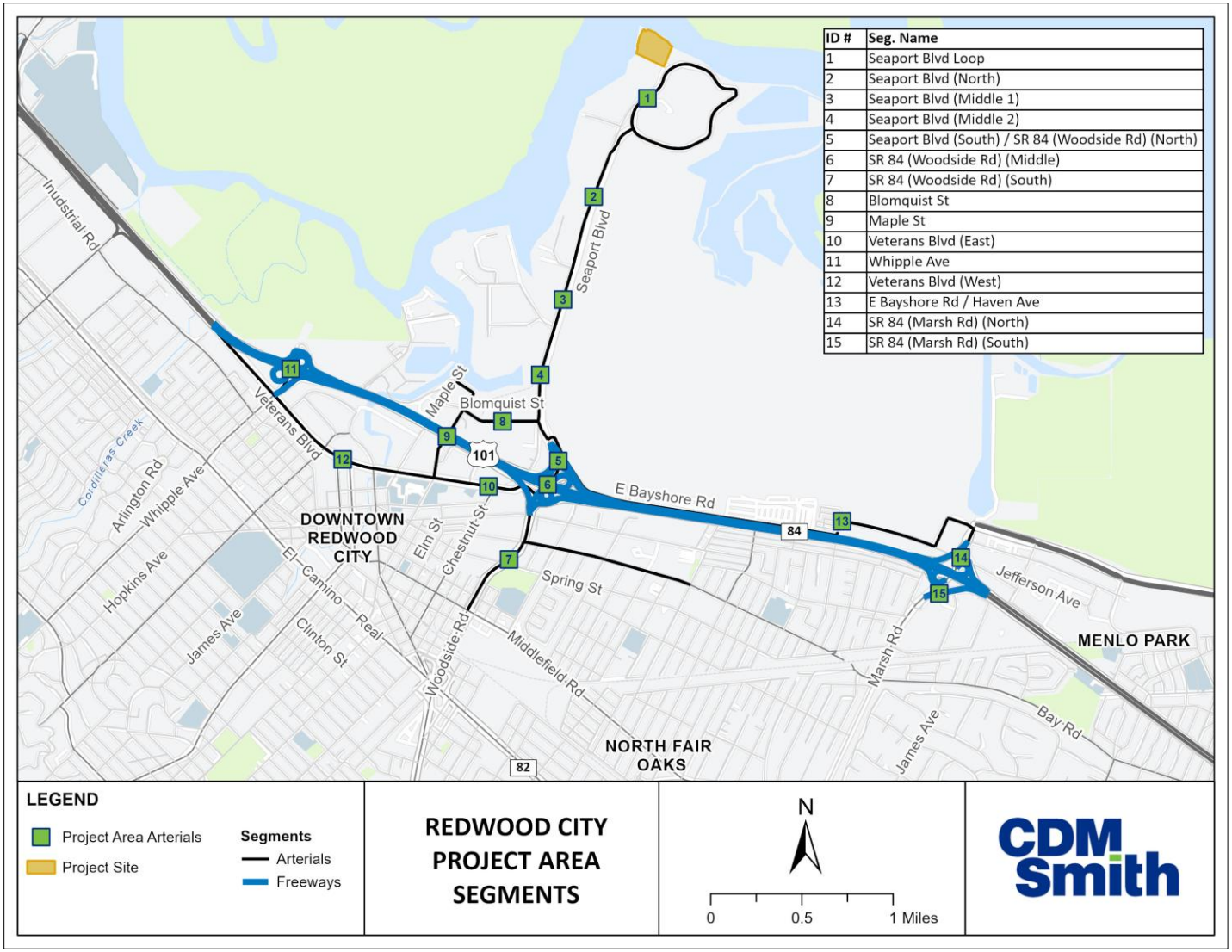
2.1.3 Project Area Identification for Traffic, Access, and Safety Analysis

Background and proposed project traffic estimation, alternate modal system assessment, and Redwood City's non-freeway crash data assessment (part of the safety assessment) are limited to 15 project area roadway intersections, 16 freeway segments, and 15 arterial segments under existing conditions, as shown in **Figure 2.1** and **Figure 2.2**. The analysis considered a reconfiguration of the US 101/SR 84 interchange under future conditions as shown in **Figure 2.3**, which increases the number of analyzed intersections and the number of arterial segments to 16 each. Outside the project area, traffic impacts from the project's net change in peak hour trips through 2040 is expected to be negative north of the US 101 / Whipple Avenue interchange and to remain constant south of the US 101 / Marsh Road interchange. The project would have a negative net change because the ferry terminal component would reduce more peak hour trips north of the US 101 / Whipple Avenue interchange than the visitor-serving uses component would add. South of the US 101 / Marsh Road interchange, there would be no net change in traffic because the traffic reduction from the ferry terminal component would fully offset the increase in traffic due to the visitor-serving uses component in the northbound direction, and there would be a change in traffic in the southbound direction (plus 70 vehicle trips in the AM peak hour and minus 40 vehicle trips in the PM peak hour). **Attachment 1** and **Attachment 2** show the schematics for the intersection and segment configurations under existing (2023) conditions and cumulative no project (2023) conditions. Summary level discussions of the roadway network elements in the vicinity of the proposed project are presented in **Section 3.2.1**.



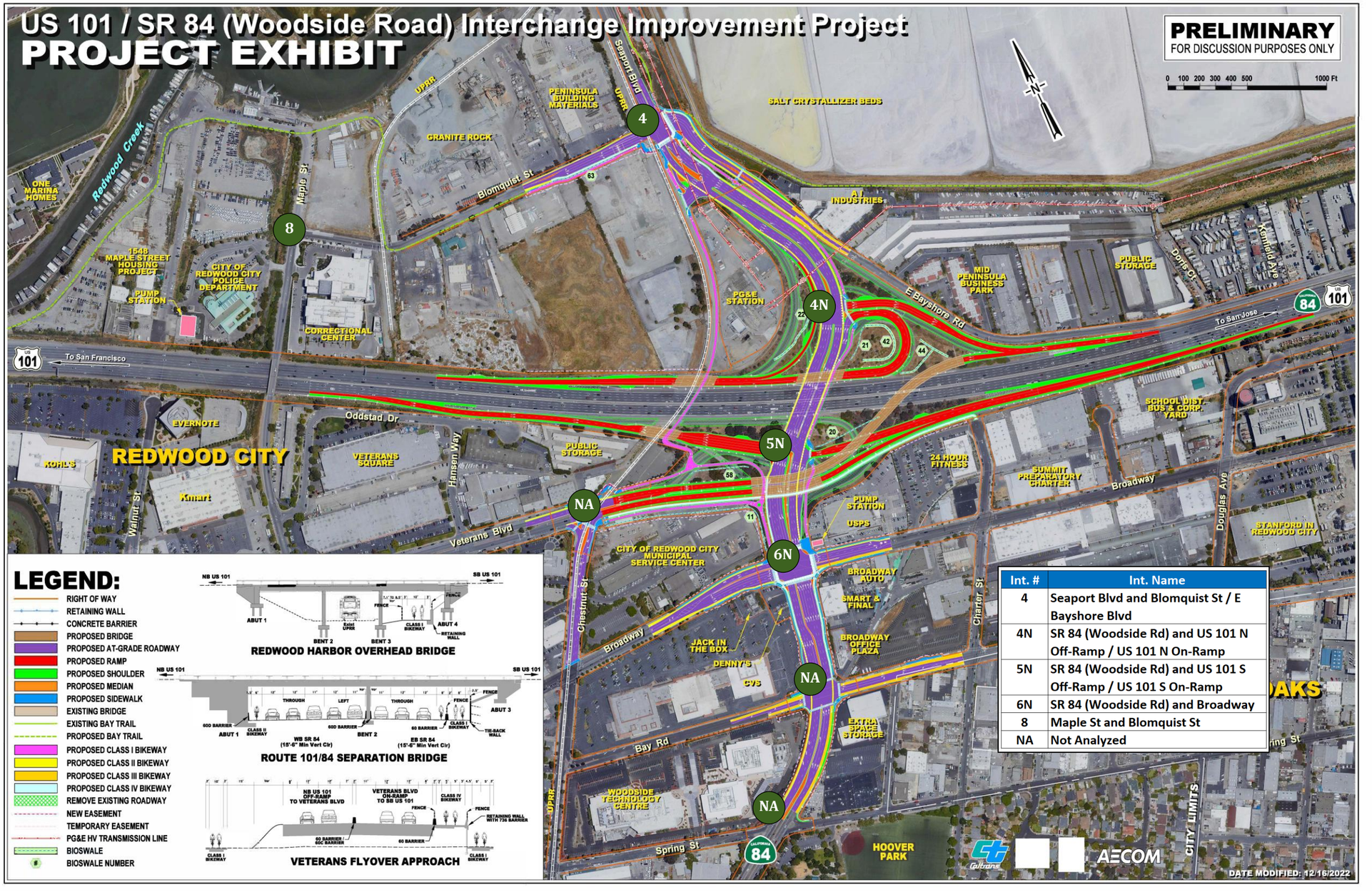
Source: CDM Smith, 2024.
Note: Under the proposed project, intersection 1c would be added along Seaport Boulevard loop road at the entrance to the proposed project site.

Figure 2.1 Existing Project Area Intersections



Source: CDM Smith, 2024.

Figure 2.2 Existing Project Area Segments



Sources: City of Redwood City and Caltrans. December 9, 2015. US 101/SR 84 (Woodside Road) Interchange Improvement Project, Revised Final Traffic Operations Analysis Report. Available: https://www.redwoodcity.org/home/showpublisheddocument/25747/638041021964800000; City of Redwood City. 2025. SR84 – US101 Interchange Reimagined webpage, Project Overview. Available: https://www.redwoodcity.org/departments/community-development-department/engineering-transportation/transportation-parking/101-woodside-interchange#Project%20Overview. Accessed June 20, 2025.

Figure 2.3 US 101 / SR 84 Interchange Improvement Project-Related Reconfiguration

LOS Analysis Configuration and Control Type Details and Differences between Scenarios

For the purpose of LOS analysis, the transportation analysis team identified the off-site traffic operations network in the vicinity of the project site consisting of intersections, freeway segments, and arterial segments as shown in **Table 2.2**, **Table 2.3**, and **Table 2.4**, respectively.

Under cumulative (2040) no project and project conditions, intersections 4, 5, and 6 are modified due to the US 101 / SR-84 interchange reconfiguration project into intersection 4 with modified configuration, and new intersections 4N, 5N, and 6N. Under the proposed project conditions (in 2023 and 2040), intersection 1c is added because it is part of the proposed project.

Under the proposed project conditions (in 2040 only), the control type for intersection 1a is modified from all-way stop control (AWSC) to signalized operations. This modification was included because it is part of the proposed project that would be implemented in 2039 and operational by 2040. The configurations at all other intersections are assumed to be the same under all conditions.

Under cumulative (2040) no project and project conditions, arterial segments 4N, 5N, and 6N replace arterial segments 5 and 6, which includes widening SR 84 (Woodside Road) from 2 lanes to 3 lanes each way between Blomquist Street / E Bayshore Boulevard and Broadway due to the US 101 / SR-84 interchange reconfiguration project. Segments 7 and 10 are relabeled to 7N and 10N under these conditions due to change in their end nodes. The configurations for all freeway and other arterial segments remain the same under all conditions.

Table 2.2 Project Area Intersections

Int. #	Intersection Name	Control Type
1c*	Seaport Blvd Loop and Proposed Project Facility Entrance Rd	N/A (No Project) TWSC (Project)
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC (No Project and 2023 Project) Signalized (2040 Project)
1b	Seaport Blvd and Hinman Rd	TWSC
2	Seaport Blvd and Seaport Ct	Signalized
3	Seaport Blvd and Chesapeake Dr	Signalized
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized
5**	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Signalized (Existing Only)
6**	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Signalized (Existing Only)
4N***	SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Signalized (Cumulative Only)
5N***	SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Signalized (Cumulative Only)
6N***	SR 84 (Woodside Rd) and Broadway	Signalized (Cumulative Only)
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized
8	Maple St and Blomquist St	AWSC
9	Maple St and Veterans Blvd	Signalized
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized

Int. #	Intersection Name	Control Type
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized

Source: CDM Smith, 2024.
Notes:
*Under existing (2023) plus project and cumulative (2040) project conditions only
**Under existing (2023) conditions and existing (2023) plus project only
***Under cumulative (2040) no project and project conditions only
Key: Int. = Intersection, AWSC = all-way stop control, TWSC = two-way stop control, NB = Northbound, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Rd = Road, SR = State Route, St = Street

Table 2.3 Project Area Freeway Segments

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Segment Type	Number of Lanes
O1	US 101 NB		Off to Marsh Rd	Diverge	5
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	Basic	4
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	Merge	4
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	Weave	5
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	Basic	4
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	Weave	5
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	Basic	4
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	Merge	4
D1	US 101 NB	On from WB Whipple Ave		Merge	5
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	Diverge	6
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	Basic	5
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	Merge	5
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	Weave	5
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	Basic	4
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	Weave	5
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	Basic	4
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	Merge	4
D2	US 101 SB	On from EB Marsh Rd		Merge	5

Source: CDM Smith, 2024.
Key: Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street, EB = Eastbound, NB = Northbound, SB = Southbound, WB = Westbound
Definitions: Basic segment – Segments that are not merge, diverge, or weaving segments; Merge segment - Segments in which two or more traffic streams combine to form a single traffic stream; Diverge segment - Segments in which a single traffic stream divides to form two or more separate traffic streams; and Weave segment - Segments in which two or more traffic streams traveling in the same general direction cross paths along a significant length of freeway without the aid of traffic control devices, formed when a diverge segment closely follows a merge segment or when an upstream on-ramp and downstream off-ramp are connected by a continuous auxiliary lane

Table 2.4 Project Area Arterial Segments

Arterial Seg. #	Arterial Seg. Name	From Intersection	To Intersection	Speed Limit (miles per hour)	Number of Lanes (NB/EB)	Number of Lanes (SB/WB)
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		25	1	1
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	35	2	2
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	35	2	2
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	35	2	2
5*	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	35	2	2
6*	SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	35	2	2
4N**	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	35	3	3
5N**	SR 84 (Woodside Rd) (Middle Top)	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	35	3	3
6N**	SR 84 (Woodside Rd) (Middle Bottom)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	6N: SR 84 (Woodside Rd) and Broadway	35	3	3
7	SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	35	2	2
7N**	SR 84 (Woodside Rd) (South)	6N: SR 84 (Woodside Rd) and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	35	2	2
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	25	1	1
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	25	1	1
10*	Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	35	2	2
10N**	Veterans Blvd (East)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	35	2	2
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	25	2	2
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	45	3	3

Arterial Seg. #	Arterial Seg. Name	From Intersection	To Intersection	Speed Limit (miles per hour)	Number of Lanes (NB/EB)	Number of Lanes (SB/WB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	25	1	1
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	35	2	2
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	35	2	2

Source: CDM Smith 2024.
Notes:
*Under existing (2023) and existing (2023) plus project conditions only.
**Under cumulative (2040) no project and project conditions only.
Key: Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

2.1.4 Background Traffic Estimation

This transportation study established the existing (2023) conditions by combining the latest available traffic counts in the project vicinity that were taken over 2017-2024, ferry trip generation analysis in 2019, visitor-serving uses trip generation analysis in 2024, and a targeted set of socioeconomic and land use development adjustments to bring all data prior to 2023 to 2023 conditions. This transportation study did not adjust the data belonging to 2023 or later. For these reasons, in the context of the transportation analysis, "existing (2023)" conditions is equivalent to "baseline (2023) no project" conditions, and "existing (2023) plus project" conditions is equivalent to "baseline (2023) project" conditions.

Under the no project conditions, the proposed project site would remain vacant, such that no trips are generated. Existing (2023) traffic generated by existing background land uses and operating on existing transportation facilities in the project area were estimated using 2017-2024 weekday peak period turning movement counts (TMCs), a segment count, Caltrans' US 101 freeway mainline traffic data, and methodologies to update TMCs to 2023 conditions, balance volumes between intersections, and estimate segment volumes. This traffic is also assumed to represent the baseline (2023) conditions and consists of turning movement volumes for arterials and ramps to/from US 101 in the project area, pedestrian and bike crossing volumes, and heavy vehicle shares. The intersection traffic counts included heavy vehicle share and pedestrian and bicycle crossing movements, which were coded into a Synchro/SimTraffic model as conflicts to vehicular movements and thus improved the accuracy of delay/LOS calculations.

The cumulative (2040) no project conditions were primarily based on the existing (2023) conditions and traffic growth rates seen between the base year (2023) and forecast year (2040) in the C/CAG travel demand model update made by Redwood City for the Redwood City Transportation Impact Fee Study published in December 2023.[25] This transportation study added the impact of the US 101 / SR 84

[25] City of Redwood City. December 2023 (update). Redwood City Transportation Impact Fee Study. Prepared by Economic & Planning Systems, Inc. and Hexagon Transportation Consultants, Inc. Available: https://www.redwoodcity.org/home/showpublisheddocument/27445/638388322844730000.

Interchange Improvement Project related roadway reconfigurations (currently under implementation but not coded in the 2023 version of C/CAG model) on the traffic flow patterns.

The background traffic estimation concluded with per capita VMT calculation at set geographical levels of Redwood City, San Mateo County, and the San Francisco Bay Area region. This calculation was performed by dividing C/CAG travel demand model daily VMT in existing (2023) and cumulative conditions (2040) by service population for Redwood City TAZs and San Mateo County TAZs. Direct data was used for the San Francisco Bay Area region based on a C/CAG publication.[26]

The methodologies used in the background traffic estimation are explained in more detail as follows.

Intersection TMCs Update Methodology

The transportation analysis team compiled TMCs at project area intersections on a weekday AM peak hour and PM peak hour basis from various sources and dates as shown in **Table 2.5**. These include new TMCs gathered in February 2024 at five (5) project area intersections located on the main access road to the proposed project site, Seaport Boulevard. This transportation analysis identified an AM peak hour of 7 – 8 AM and PM peak hour of 4 – 5 PM for the new TMCs. Redwood City and the City of Menlo Park also provided copies of several studies and EIRs prepared for development projects in their cities. These documents provided historical TMCs at ten (10) other project area intersections dating from April 2017 to December 2022. **Attachment 3** contains the raw intersection TMCs for all 15 project area intersections in both Redwood City and Menlo Park. The transportation analysis used the peak hours for the historical TMCs as observed on their respective count dates. Lastly, TMCs at the proposed intersection 1c (Seaport Boulevard and Proposed Project Facility Entrance Road) were derived from the TMCs at intersection 1a (Seaport Boulevard and Pacific Shores Center Entrance Road).

Generally, the latest available count for each project area intersection was used in this transportation analysis. However, the latest available count at the project area intersections was missing TMCs on some ramps as follows: (a) US 101 northbound (NB) Off-Ramp to eastbound Seaport Boulevard and US 101 NB On-Ramp from westbound Seaport Boulevard just south of intersection #4; (b) US 101 NB Off-Ramp to westbound SR 84 (Woodside Road) and US 101 southbound (SB) Loop Off-Ramp to eastbound SR 84 (Woodside Road) just north of intersection #5; (c) US 101 NB Loop On-Ramp from eastward Whipple Avenue just south of intersection #10; and (d) US 101 SB Loop On-Ramp from westward Whipple Avenue just north of intersection #11. In these situations, either TMCs from multiple count dates were combined or volumes were estimated using simple arithmetic (additions/subtractions) to avoid the missing count issue.

[26] City/County Association of Governments of San Mateo County (C/CAG). September 2021. SB 743 Implementation Decisions, Table 5: Total Project Generated VMT – San Mateo County and Bay Area Region. Available: https://ccag.ca.gov/wp-content/uploads/2021/11/1_20210929_CCAG_SB_743_Implementation_Decisions_Cln.pdf.

Table 2.5 TMC Data Sources and Dates

Int. #	Intersection Name	Source	Date
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	New Field Traffic Count	2/13/2024
1b	Seaport Blvd and Hinman Rd	New Field Traffic Count	2/13/2024
2	Seaport Blvd and Seaport Ct	New Field Traffic Count	2/13/2024
3	Seaport Blvd and Chesapeake Dr	New Field Traffic Count	2/13/2024
4	Seaport Blvd and Blomquist St	New Field Traffic Count	2/13/2024
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Redwood City	9/10/2019 & 4/25/2017
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Redwood City	4/25/2017
7	SR 84 (Woodside Rd) and Middlefield Rd	Redwood City	1/31/2018
8	Maple St and Blomquist St	Redwood City	9/10/2019
9	Maple St and Veterans Blvd	Redwood City	9/10/2019
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Redwood City	9/10/2019 & 4/25/2017
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Redwood City	9/10/2019
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Menlo Park	12/15/2022
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Menlo Park	12/15/2022
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Menlo Park	12/15/2022

Source: CDM Smith, 2024.
Key: Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, SR = State Route, St = Street, E = East, NB = Northbound, SB = Southbound

The historical TMCs were updated to existing (2023) conditions through an update process as follows:

- The transportation analysis team reviewed 41 citywide land use projects, approved by Redwood City between 2015 and 2023, that the City used to perform the C/CAG model updates. Among the 41 projects, the team identified 13 land use projects (see **Table 2.6**) as impacting the turning movements of the project area intersections and having sufficient data to estimate turning movement impacts on the project area intersections.
- For each project area intersection, the latest count date and data were identified. The turning volume impacts of only those land use projects that met the date criterion were added to the turning volume counts to update the counts to existing conditions.

Table 2.6 City Development Projects Analyzed for Count Updates

City Dev. #	City Development Project Name	City Council Approval Date	Count Date and Whether City Council Approval occurred after Count Date					Int. #s Impacted
			4/25/ 2017	1/31/ 2018	9/10/ 2019	12/15/ 2022	2/13/ 2024	
14	550 Allerton	6/11/2018	Y	Y				6, 7
15	601 Marshall	7/23/2018	Y	Y				6, 7
18	1 Uccelli Blvd	9/10/2018	Y	Y				6, 7
20	815 Hamilton	12/3/2018	Y	Y				6, 7
21	600 Bair Island (Hotel)	2/6/2019	Y	Y				6, 7
23	1305 El Camino (Greystar III)	11/25/2019	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
24	103 Wilson (Greystar II)	4/27/2020	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
27	Stanford, 405, 425, 475, 500-585 Broadway	2/22/2021	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
28	1175 Marshall	4/6/2021	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
30	1409 El Camino (Greystar IV)	1/10/2022	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
31	1985 Broadway	1/10/2022	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
34	851 Main	4/1/2022	Y	Y	Y			5, 6, 7, 8, 9, 10, 11
37	1180 Main	10/24/2022	Y	Y	Y	Y*		5, 6, 7, 8, 9, 10, 11, 12, 13, 14

Source: City of Redwood City, 2024.
Notes: Intersections #1a, 1b, 2, 3, and 4 counts were taken after 2023; hence, they did not require an update.
*Although the City Council approval date is not after the count date, it is highly likely that the project was not completed by the count date.
Key: Blvd = Boulevard

Intersections Volume Balancing Methodology

The transportation analysis balanced volume estimates under existing (2023) conditions on adjacent intersections with no interim driveways by matching departing leg of an upstream intersection to the arriving leg of a downstream intersection. This was conducted when the intersections are adjacent and have limited or no driveways or cross-streets between them. Volume balancing was performed for the intersection sets of 1a, 1b, 2, 3, 4, 5, and 6; 10 and 11; and 12, 13, and 14. Although adjacent, no volume balancing was performed for intersection sets of 6 and 7; 4 and 8; 5 and 9; 8 and 9; and 9 and 11 due to the presence of driveways or cross-streets. The process of volume balancing favored selecting the more conservative volume for the segment connecting the intersections. **Attachment 4** contains the balanced volume diagrams under existing (2023) conditions.

Existing Segment Volume Estimation Methodology

The transportation analysis team collected field arterial segment average daily traffic (ADT) counts on Veterans Boulevard between Maple Street and Chestnut Street, taken over 5 consecutive weekdays from the 12th to the 16th of February, 2024 (Monday-Friday), to produce weekday segment volume estimates, on a weekday daily AM peak hour and PM peak hour basis. **Attachment 3** contains the raw segment ADT counts taken on Veterans Boulevard.

The transportation analysis estimated weekday AM and PM peak hour segment volumes on US 101 mainline using the following data and assumptions:

- Caltrans' 2019 mainline bi-directional annual average daily traffic (AADT) of 224,000 on US 101 at Redwood City, Junction Route 84
- Caltrans Freeway Performance Measurement System (PeMS) detectors' data:
  - Peak month factor of 1.14
  - Peak weekday factor of 1.08
  - AM and PM peak hour shares in the range of 6.1-6.4 percent in northbound and southbound directions
  - 2019-2023 daily traffic adjustment factors of 0.93 for northbound and 0.97 for southbound directions.

The transportation analysis estimated weekday AM and PM peak hour volumes on US 101 ramps and proposed project area arterial segments from intersection TMCs and derived volumes. The peak hour volume estimates were then used to roughly estimate daily totals on these segments using the field counts on Veterans Boulevard. The counts provided AM and PM peak share of daily total volume of 6.2 percent in the AM peak hour of 8 – 9 AM and 7.8 percent in the PM peak hour of 4 – 5 PM.

Traffic Forecasting Methodology

Redwood City provided C/CAG travel demand model outputs of daily traffic volumes over the off-site traffic operations network in the vicinity of the proposed project, under baseline (2023) and cumulative (2040) no project conditions. The transportation analysis estimated segment level growth rates and applied them to turn movement volumes at the intersections on the segments. After rebalancing the volumes of adjacent intersections, the forecast segment and turn movement volumes were used in cumulative (2040) no project and proposed project conditions.

Further, the transportation analysis re-assigned the turning movement volumes from the existing intersections prior to the US 101/SR 84 Interchange reconfiguration to the new intersections after the interchange reconfiguration. **Attachment 4** contains the balanced traffic volume diagrams under cumulative (2040) no project conditions.

Figure 2.4 and **Figure 2.5** show the weekday AM and PM peak hour comparisons between the raw counts and balanced volumes under existing (2023) and cumulative (2040) no project conditions. The compound annualized growth rate (CAGR) in traffic volume at the project area intersections between existing (2023) and cumulative (2040) no project conditions ranges between 1.4 and 2.8 percent. While 1c is an intersection that would be constructed under the proposed project, (i.e., the intersection is present under existing (2023) plus project and cumulative (2040) project conditions only), the through flows along Seaport Boulevard loop road at this location are shown in the no project condition figures.

The differences between the raw counts and existing (2023) volumes are small in magnitude at most project area intersections. However, at intersection 4 (Seaport Boulevard and Blomquist Street / East Bayshore Road), which is a key gateway intersection to the project site, the traffic showed a drop between 2017 and 2024 TMCs by 29.3 percent and 25.2 percent in weekday AM and PM peak hours, respectively. This is due to the Covid-19 pandemic and other changes in jobs and commuting patterns for businesses along Seaport Boulevard. By 2040, the background traffic is projected to rise above the 2017 TMC levels by 23.2 percent and 28.4 percent in weekday AM and PM peak hours, which is equivalent to 0.9 percent and 1.1 percent of CAGR, respectively. When considering the traffic volume growth between existing (2023) and cumulative (2040) no project conditions, the CAGR is higher at intersection 4 (i.e., 2.8 percent in both weekday AM and PM peak hours).

Background Per Capita VMT Calculation Methodology

This analysis calculated per capita VMT by dividing daily VMT for Redwood City, San Mateo County, and the San Francisco Bay Area region by service population. This analysis used the 2023 and 2040 daily VMT and service population estimates in **Table 2.1** to estimate the per capita VMT for Redwood City TAZs and San Mateo County TAZs. The transportation analysis team gathered per capita VMT estimates for the San Francisco Bay Area region from a C/CAG publication,[27] which is based on an older 2015/2040 C/CAG travel demand model.

[27] City/County Association of Governments of San Mateo County (C/CAG). September 2021. SB 743 Implementation Decisions, Table 5: Total Project Generated VMT – San Mateo County and Bay Area Region. Available: https://ccag.ca.gov/wp-content/uploads/2021/11/1_20210929_CCAG_SB_743_Implementation_Decisions_Cln.pdf.

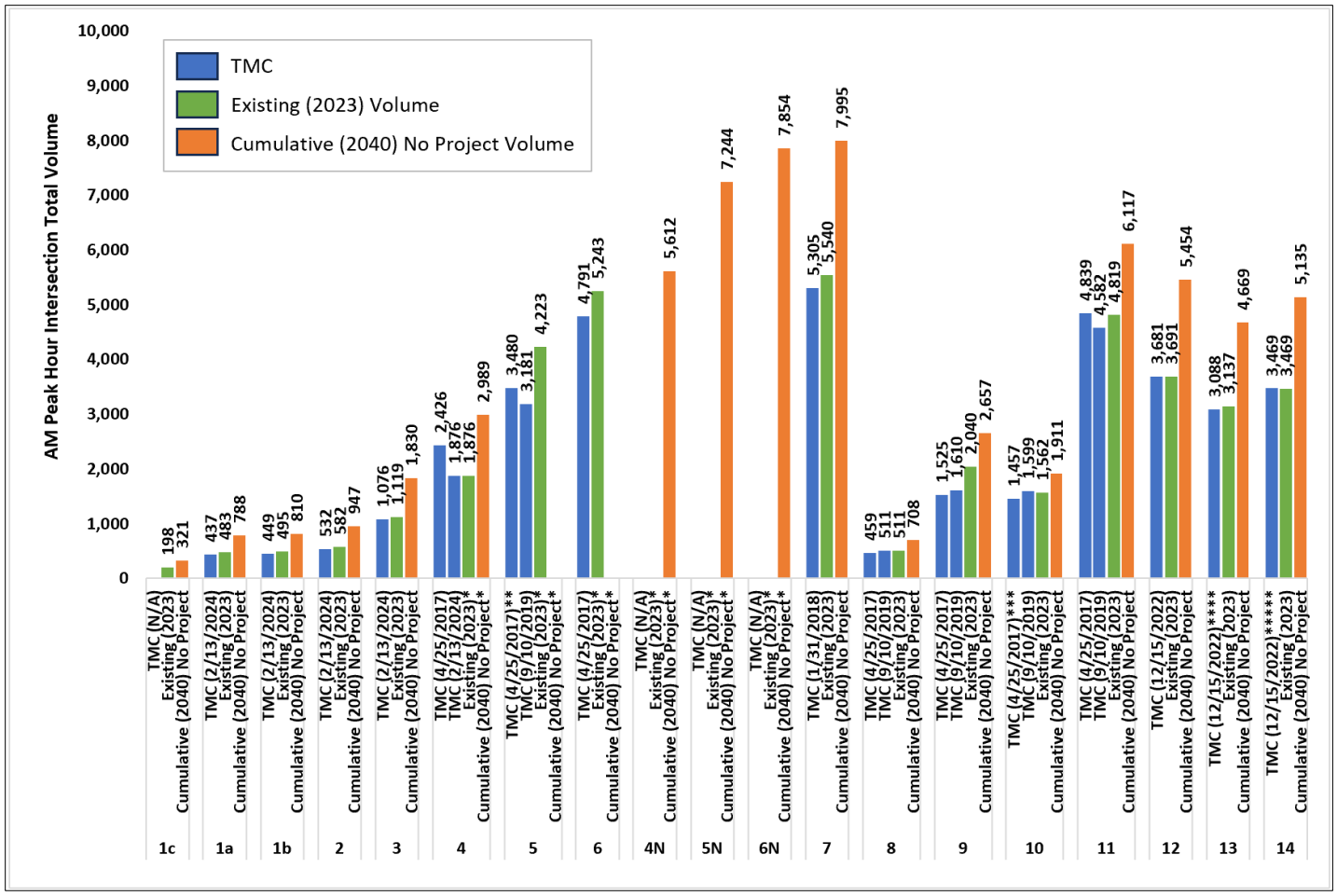


Figure 2.4 AM Peak Hour Raw Counts to Existing (2023) and Cumulative (2040) No Project Intersection Total Volume Comparisons

* US 101 / SR 84 Interchange Improvement Project relabels intersections 4, 5, and 6 to intersections 4 (modified), 4N, 5N, and 6N in future year (2040) only.

** Turn movement associated with US 101 SB Loop Off-Ramp (526 vehicles) incorrectly included in intersection #5 in 4/25/2017 raw count was removed for comparability to 9/10/2019 raw count, Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

*** Turn movement associated with US 101 NB Loop Ramp (1,029 vehicles) incorrectly included in intersection #10 in 4/25/2017 raw count was removed for comparability to 9/10/2019 raw count, Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

**** Turn movements associated with US 101 NB Loop On-Ramp and US 101 NB On-Ramp (381 and 1,454 vehicles, respectively) incorrectly included in intersection #13 in 12/15/2022 raw count was removed for comparability to Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

***** Turn movements associated with US 101 SB Loop On-Ramp and US 101 SB On-Ramp (120 and 650 vehicles, respectively) incorrectly included in intersection #14 in 12/15/2022 raw count was removed for comparability to Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

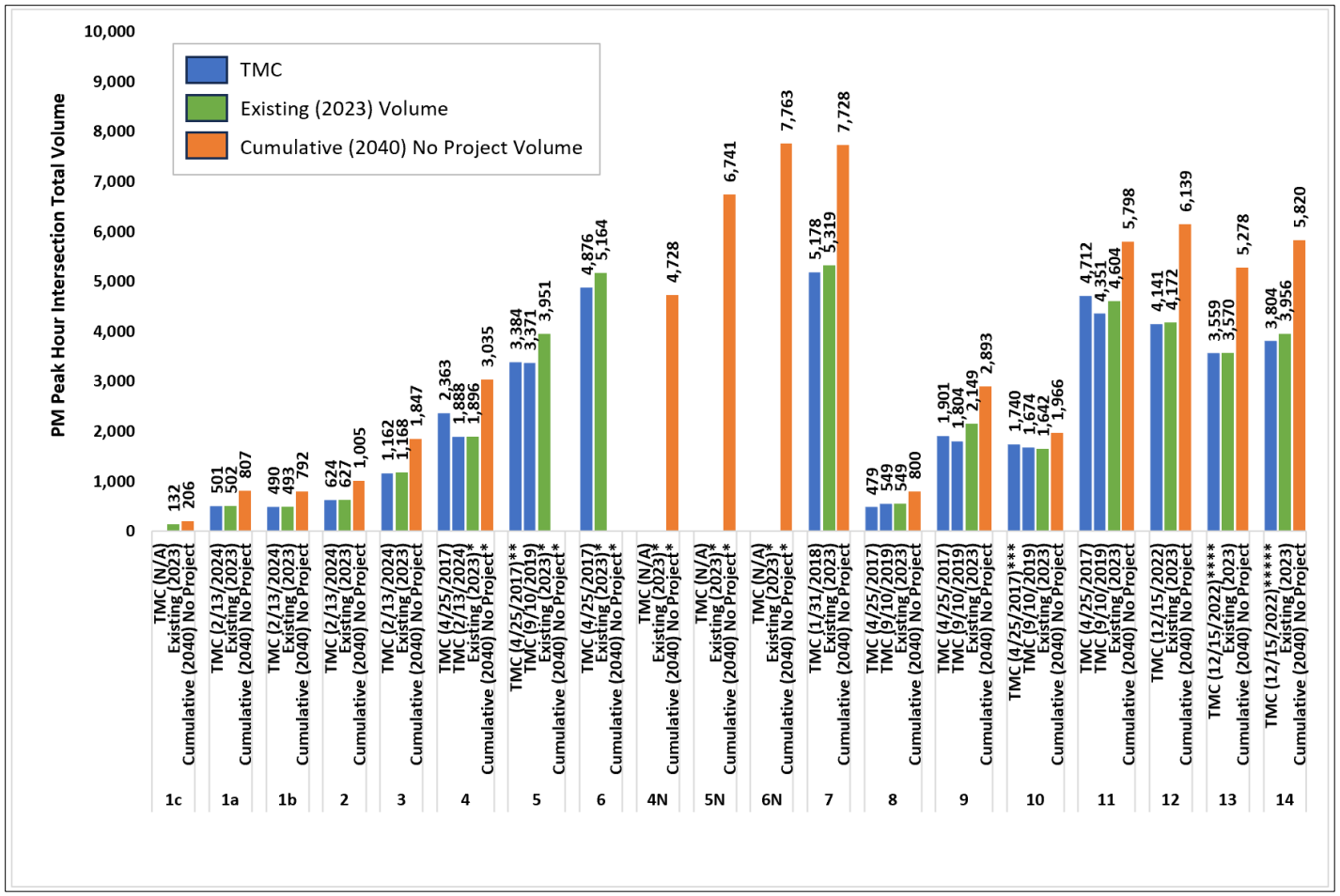


Figure 2.5 PM Peak Hour Raw Counts to Existing (2023) and Cumulative (2040) No Project Intersection Total Volume Comparisons

* US 101 / SR 84 Interchange Improvement Project relabels intersections 4, 5, and 6 to intersections 4 (modified), 4N, 5N, and 6N in future year (2040) only.

** Turn movement associated with US 101 SB Loop Off-Ramp (163 vehicles) incorrectly included in intersection #5 in 4/25/2017 raw count was removed for comparability to 9/10/2019 raw count, Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

*** Turn movement associated with US 101 NB Loop Ramp (851 vehicles) incorrectly included in intersection #10 in 4/25/2017 raw count was removed for comparability to 9/10/2019 raw count, Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

**** Turn movements associated with US 101 NB Loop On-Ramp and US 101 NB On-Ramp (388 and 1,177 vehicles, respectively) incorrectly included in intersection #13 in 12/15/2022 raw count was removed for comparability to Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

***** Turn movements associated with US 101 SB Loop On-Ramp and US 101 SB On-Ramp (328 and 830 vehicles, respectively) incorrectly included in intersection #14 in 12/15/2022 raw count was removed for comparability to Existing (2023) volume and Cumulative (2040) No Project volume where this turn movement is correctly not included.

2.1.5 Proposed Project Trips and Traffic Estimation

The transportation analysis estimated proposed project trips and traffic due to a ferry terminal project (ferry terminal and service and access improvements combined, referred to herein as the "ferry terminal component") and all project elements [ferry terminal and service, access improvements, and visitor-serving uses] combined, referred to herein as the "full project"). The transportation analysis assumed that proposed access improvements, such as on-site bicycle parking spaces, on-site transit stop and shelter with lighting and signage, and off-site bicycle and pedestrian trail facilities, support multimodal access to and from the proposed project site and connectivity with the existing multimodal transportation network in the project vicinity, discussed qualitatively under site access and circulation assessment in **Section 2.4**.

The transportation analysis made ferry operations and maximum build-out assumptions for the project site. Based on these assumptions, the transportation analysis estimated the project trips and traffic using a four-step travel demand modeling process – trip generation,[28] mode splits,[29] trip distribution,[30] and traffic assignment.[31] While the trip generation and mode split steps considered all modes (auto, transit, bike, pedestrian, and other unknown), the trip distribution and traffic assignment steps only considered motorized (auto and transit) travel modes. The methodologies used are discussed in more detail as follows.

Ferry Operations and Proposed Project Site Maximum Build-Out Assumptions

The proposed ferry terminal would operate new ferry service routes between Redwood City and San Francisco, and between Redwood City and Oakland. The transportation analysis assumed 18 weekday daily services, 12 weekend daily services, and 2 services on a special event day. To account for potential increase in ferry service over time, a 20 percent increase in trips was assumed for both weekdays and weekends. The transportation analysis also assumed 15 special event services per year. The weekday services were assumed to be split as 8 services between Redwood City and Oakland, and 10 services between Redwood City and San Francisco. The weekend and special event day services were assumed only between Redwood City and San Francisco.

Under the proposed project, the 9.2-acre project site would also be re-zoned from GI (General Industrial) to CG (General Commercial) to allow future visitor-serving uses. At maximum buildout, the visitor-serving uses would occupy approximately 90,000 square feet of the proposed project site and would create a new Port waterfront destination by encouraging commercial and recreational uses. The transportation analysis assumed the visitor-serving uses to comprise a three-story full-service hotel (up to 180,000 square feet total, inclusive of an associated restaurant, retail and meeting event facilities space, and 100 to 200 rooms, and integrated ground floor parking); a one-story standalone restaurant (up to 20,000 square feet) and integrated parking on the ground floor; a one-story standalone office space (up to 10,000 square feet); and a permanent restroom facility at the ferry terminal.

[28] Trip generation step determines the total number of trips produced and attracted by the proposed project considering socioeconomic factors and land uses.
[29] Mode splits step determines the mode of transportation (e.g., drive alone, carpool, transit, taxi, walk, bike, etc.) that travelers would use for each trip.
[30] Trip distribution step determines how trips generated by the proposed project are likely to be distributed among TAZs.
[31] Traffic assignment step determines the routes that travelers would take between their origin and destination.

Trip Generation Methodology

The transportation analysis began with the ridership (person trip) estimates developed in the Redwood City Ferry Business Plan[32] for the years 2019 and 2040 and adjusted them to the years 2023 and 2040 while adjusting for recent post-Covid-19 pandemic population trends,[33] economic trends,[34] and travel trends.[35] In addition to this, a ferry operations (wake) analysis performed for the proposed project by COWI in early 2025[36] found the need to reduce ferry speed along certain portions of the ferry route to reduce project impacts. This reduction in speed led to an increase in the ferry transit times (in-vehicle travel times) for each ferry service by six (6) minutes over the ferry transit times used in the Redwood City Ferry Business Plan, which lowered the ridership estimates. **Attachment 5** contains more details on the ferry ridership adjustments. The transportation analysis estimated the adjusted daily total ridership and per ferry ridership by service route in the years 2023 and 2040, shown in **Table 2.7**.

Table 2.7 Proposed Ferry Terminal Average Daily Ridership (Person Trips)

Service Route	Year 2023 Average Daily Ridership			Year 2040 Average Daily Ridership		
	Wkdy. Total (Per Ferry)	Wknd. Total (Per Ferry)	Spl. Events Total (Per Ferry), {Per Event}	Wkdy. Total (Per Ferry)	Wknd. Total (Per Ferry)	Spl. Events Total (Per Ferry) {Per Event}
Oakland – Redwood City	640 (107)	N/A (N/A)	N/A (N/A)	1,780 (297)	N/A (N/A)	N/A (N/A)
San Francisco – Redwood City	830 (104)	730 (73)	90 (45) {200}	1,910 (239)	1,680 (168)	210 (105) {340}

Sources: City of Redwood City. October 2020. Ferry Financial Feasibility Study & Cost-Benefit and Economic Impact Analyses. Prepared by CDM Smith. Available: https://www.redwoodcity.org/home/showpublisheddocument/22921/637442616488470000; Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf; Ferry Ridership Adjustment Methodology (**Attachment 5** of this Report).
Key: N/A = Not Applicable, Wkdy. = Weekday, Wknd. = Weekend, Spl. = Special

[32] Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan. Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf.

[33] As per the California Department of Finance, the population estimates for San Francisco, Oakland, and Redwood City in 2023 are lower than that in 2020 by about 5 percent on average, due to net migration to other geographical regions in the U.S. California Department of Finance. May 2025. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2020-2025..

[34] As per CBRE, a global commercial real estate services firm, the office space vacancy for the San Francisco market has increased from 4.0 percent in 2019 to 35.6 percent in 2023. During this same period, the office space vacancy for the Oakland market has increased from 8.0 percent in 2019 to 20.6 percent in 2023. CBRE Research. 2024. Bay Area Office Snapshot Q4 2023. Available: https://mktgdocs.cbre.com/2299/a9cec7e2-5626-4146-81c2-d5be27c2e721-240941716.pdf.

[35] As per Bay Area Council Employer Surveys, the remote work eligible jobs commuted 4.4 days per week on average under pre-pandemic (2019) conditions; this reduced to 3.0 days per week on average by November 2023, where the remote work eligible jobs formed 51 percent, 40 percent, and 47 percent of the total jobs in San Francisco, Oakland, and Redwood City, respectively. Bay Area Council. 2024. Return to Office Survey - November 2023 and May 2021 Results. Available: https://www.bayareacouncil.org/employer-survey-results/. Accessed August 8, 2024.

[36] COWI. 2025. Port of Redwood City – Ferry Terminal Environmental Review: Ship Wake and Morphology Assessment Report.

The transportation analysis used ITE Trip Generation Manual 11th Edition[37] to generate weekday and weekend daily, AM peak hour and PM peak hour motorized vehicle trips for the proposed visitor-serving uses. The transportation analysis assumed ITE Land Use Code 310 (hotel) for the 200-room hotel use, ITE Land Use Code 710 (general office building) for the 10,000 square feet office space, and ITE Land Use Code 932 (high-turnover (sit-down) restaurant) for the 20,000 square feet restaurant. Further, due to the mixed use, the analysis reduced the vehicle trips from these land uses by an internal capture rate of around 4 percent using the U.S. Environmental Protection Agency's (USEPA's) Mixed-Use Trip Generation Model.[38] Estimated motorized vehicle trips due to the proposed future visitor-serving uses are shown in **Table 2.8**.

Mode Splits Methodology

The transportation analysis grouped the trips generated by the proposed project and made mode split assumptions as follows:

- **Single Occupancy Vehicles**: The end-to-end trips avoided between Redwood City and Oakland and between Redwood City and San Francisco that would have moved directly to/from Redwood City and adjacent cities from/to the cities of San Francisco and Oakland under the no project conditions were assumed to all be "drive alone" (i.e., single occupancy) vehicles
- **Inter-regional Existing Mode Splits**: "first mile/last mile" trips between origins and destinations in Redwood City and adjacent cities, Oakland and San Francisco, and associated local ferry terminals with mode splits based on existing access mode splits at Oakland and San Francisco, and assumed mode splits at Redwood City, which is the average of the following:
  - historical average (2017-2022) mode splits seen in existing suburban ferry terminals of Richmond and Vallejo (operations overseen by WETA)[39]
  - existing mode splits in Redwood City for commute trips[40]
- **Internal Existing Mode Splits**: trips added by the visitor-serving land uses also use the existing mode splits in Redwood City for commute trips

Motorized vehicle trips were derived by aggregating drive alone, kiss-and-ride/carpool, taxi, transportation network company (TNC) and transit / employer shuttle trips, and associated average vehicle occupancy assumptions.[41]

[37] Institute of Transportation Engineers (ITE). 2021. Trip Generation Manual 11th Edition. Available: https://itetripgen.org/.
[38] U.S. Environmental Protection Agency (USEPA). No date. Mixed-Use Trip Generation Model v4. Available: https://www.epa.gov/smartgrowth/mixed-use-trip-generation-model. Accessed August 8, 2024.
[39] Water Emergency Transportation Authority (WETA). 2022. 2022 Onboard Passenger Survey, San Francisco and Oakland Ferry Terminals Access Mode Shares, 2017-2022 Average.
[40] City of Redwood City. July 2018. RWCmoves, Figure 1: How RWC Residents Travel to Work (based on 2011-2015 (5-Year) American Community Survey). Available: https://rwcmoves.com/wp-content/uploads/2018/07/RWCmoves-Transportation-Plan_July16.pdf.
[41] U.S. Department of Transportation, Federal Highway Administration (FHWA). April 2018. Average Vehicle Occupancy Factors for Computing Travel Time Reliability Measures and Total Peak Hour Excessive Delay Metrics. Available: https://www.fhwa.dot.gov/tpm/guidance/avo_factors.pdf.

Table 2.8 Proposed Future Visitor-Serving Uses Project Weekday Vehicle Trips

ITE Land Use and Code	Units	Weekday daily rate (trips/unit)		Weekday AM peak hour* rate (trips/unit)		Weekday PM peak hour** rate (trips/unit)		2023						Annual Average Daily Trips (Weekday and Weekends Trips Combined)
								Weekday daily trips		Weekday AM peak hour trips		Weekday PM peak hour trips		
								Total		Total		Total		
		In %	Out %	In %	Out %	In %	Out %	In	Out	In	Out	In	Out	
Hotel (310)	200 rooms	7.99		0.46		0.59		1,600		92		118		
		50%	50%	56%	44%	51%	49%	800	800	52	40	60	58	
General Office Building (710)	10 x	10.84		1.52		1.44		110		15		14		
	1,000 SF	50%	50%	88%	12%	17%	83%	55	55	13	2	2	12	
High-Turnover (Sit-Down) Restaurant (932)	20 x	107.20		9.57		9.05		2,150		191		181		
	1,000 SF	50%	50%	55%	45%	61%	39%	1,075	1,075	105	86	110	71	
Visitor-Serving Uses [without internal capture]								**3,860**		**298**		**313**		
								1,930	**1,930**	**170**	**128**	**172**	**141**	
MXD Tool based % Internal Capture								**4.2%**		**3.6%**		**4.1%**		
Hotel (310) [with internal capture]								1,540		89		113		1,490
								770	770	50	39	58	55	
General Office Building (710) [with internal capture]								110		14		13		80
								55	55	13	1	2	11	
High-Turnover (Sit-Down) Restaurant (932) [with internal capture]								2,060		184		174		2,280
								1,030	1,030	101	83	105	69	
Visitor-Serving Uses [with internal capture]								**3,710**		**287**		**300**		**3,850**
								1,855	**1,855**	**164**	**123**	**165**	**135**	

Sources: Institute of Transportation Engineers (ITE). 2021. Trip Generation Manual 11th Edition, Daily and Peak Hour Trip Generation Rates; U.S. Environmental Protection Agency (USEPA). No date. Mixed-Use Trip Generation Model v4 (also called the MXD Tool). Available: https://www.epa.gov/smartgrowth/mixed-use-trip-generation-model. Accessed August 8, 2024.

Notes: The USEPA, in cooperation with the ITE, developed a spreadsheet tool to estimate the internal capture of trips generated by a new mixed-use development.

*Peak hour of adjacent street traffic, one hour between 7 and 9 AM.

**Peak hour of adjacent street traffic, one hour between 4 and 6 PM.

Key: ITE = Institute of Transportation Engineers, MXD Tool = USEPA Mixed-Use Trip Generation Model, AM = morning, PM = evening

Table 2.9 shows the average mode splits that are assumed for the proposed ferry terminal, both in 2023 and 2040, and the average vehicle occupancy assumptions for the same modes. For the existing ferry terminals of San Francisco and Oakland that would be serviced by the proposed ferry service, the analysis assumed the historical average (2017-2022) mode splits to apply for proposed services, both in 2023 and 2040, as shown in **Table 2.10**. The mode splits for the proposed visitor-serving uses were assumed to be the same as the mode splits in Redwood City for commute trips, both in 2023 and 2040 (see "RWCmoves Plan-Based Existing Mode Splits" column in **Table 2.9**). The transit use estimates for the ferry terminal are based on the assumption identified in the project description that the two existing Caltrain shuttles, the Seaport Center Caltrain shuttle and the Pacific Shores shuttle that operate between the Port and the Redwood City Caltrain Station, would be modified to serve the ferry terminal. Based on the experience of the South San Francisco ferry terminal, transit use by ferry passengers can be much higher than that estimated for the project, particularly when employers provide direct shuttle services. The 2022 Onboard Passenger survey results indicated that 15 percent of the passengers that used the ferry depart the terminal on an employer shuttle. Relative to the Redwood City ferry terminal, the project description did not make the assumption that employers would provide shuttle services, thus the estimate of ferry passengers using transit did not include the potential for employer provided shuttles. This is because the decision to provide employee shuttles lies with the employers and is out of the control of the Port or the City.

Table 2.9 Mode Split Assumptions for the Proposed Ferry Terminal

Mode	Comparable WETA Terminals Based Mode Splits	RWCmoves Plan Based Existing Mode Splits	Average Mode Splits for Proposed Ferry Terminal	Average Vehicle Occupancy Assumption
Drive Alone + Other	55.8%	80.0%	67.9%	1.00
Kiss-and-Ride/ Carpool + Taxi + TNC	27.0%	10.0%	18.5%	1.70
Transit / Employer Shuttle	1.8%	5.0%	3.4%	12.50
Walk Only	6.7%	3.0%	4.9%	1.00
Bike	8.7%	2.0%	5.3%	1.00
TOTAL	**100.0%**	**100.0%**	**100.0%**	

Sources: WETA. 2022. 2022 Onboard Passenger Survey, Richmond and Vallejo Ferry Terminals Access Mode Shares, 2017-2022 Average; City of Redwood City. July 2018. RWCmoves, Figure 1: How RWC Residents Travel to Work (based on 2011-2015 (5-Year) American Community Survey). Available: https://rwcmoves.com/wp-content/uploads/2018/07/RWCmoves-Transportation-Plan_July16.pdf; FHWA. April 2018. Average Vehicle Occupancy Factors for Computing Travel Time Reliability Measures and Total Peak Hour Excessive Delay Metrics. Available: https://www.fhwa.dot.gov/tpm/guidance/avo_factors.pdf.
Key: RWCmoves = Redwood City Moves, TNC = Transportation Network Company, WETA = Water Emergency Transportation Authority

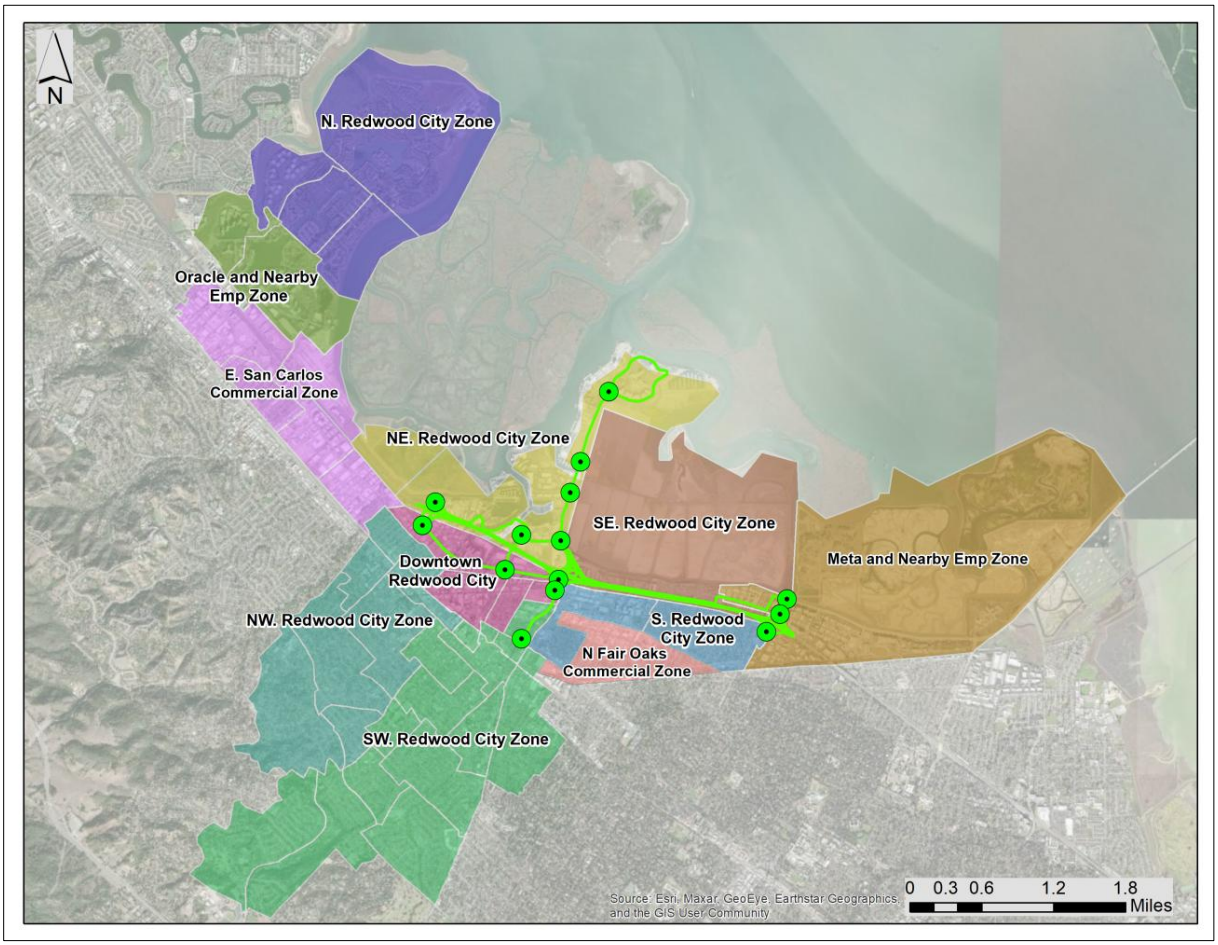
Table 2.10 Mode Split Assumptions for San Francisco and Oakland Ferry Terminals

Mode	Mode Splits for Oakland Ferry Terminal	Mode Splits for San Francisco Ferry Terminal	Average Vehicle Occupancy Assumption
Drive Alone + Other	41.6%	9.3%	1.00
Kiss-and-Ride/ Carpool + Taxi + TNC	16.3%	11.0%	1.70
Transit / Employer Shuttle	2.7%	20.3%	12.50
Walk Only	22.5%	43.7%	1.00
Bike	16.9%	15.7%	1.00
TOTAL	**100.0%**	**100.0%**	

Sources: WETA. 2022. 2022 Onboard Passenger Survey, San Francisco and Oakland Ferry Terminals Access Mode Shares, 2017-2022 Average; FHWA. April 2018. Average Vehicle Occupancy Factors for Computing Travel Time Reliability Measures and Total Peak Hour Excessive Delay Metrics. Available: https://www.fhwa.dot.gov/tpm/guidance/avo_factors.pdf.
Key: TNC = Transportation Network Company

Trip Distribution

For the motorized vehicle trips due to the proposed project, trip distribution was performed between the proposed project site and the eleven (11) zones in the proposed project catchment area (see **Figure 2.6**) formed by aggregating TAZs in Redwood City, Menlo Park, San Carlos, and North Fair Oaks.



Source: CDM Smith, 2024.

Figure 2.6 Proposed Project Catchment Area

The parameter used for the distribution varied by trip type as follows:

- "first mile/last mile" trips between origins and destinations in Redwood City and adjacent cities and the proposed ferry terminal:
  - Redwood City home to San Francisco / Oakland work trips were assumed to be distributed based on population in each TAZ
  - San Franciso / Oakland home to Redwood City work trips were assumed to be distributed based on employment in each TAZ
- trips added by the visitor-serving land uses were assumed to be distributed based on service population (population plus employment total) in each TAZ, and as a special consideration for hotel stays, one incoming and one outgoing trip to nearby airports (such as San Francisco, Oakland, and San Jose), was assumed in addition to the trips to TAZs during the hotel stay

For the end-to-end trips avoided between Redwood City and Oakland and between Redwood City and San Francisco that would be present under the no project conditions and for the "first mile/last mile" trips to/from San Francisco and Oakland terminals, average first mile/last mile trip lengths are assumed in the VMT calculation as discussed in **Section 2.3**.

Traffic Assignment

This step was conducted for LOS calculation purposes only. Traffic assignment identifies the segments and intersection turning movements of the project area that are likely to be affected by the distributed motorized vehicle trips in the previous step. This was performed by considering logical pathways between the proposed project site and the eleven (11) aggregated zones in the proposed project catchment area. **Figure 2.7** shows an example assignment logic for the trips to the proposed project site from the downtown Redwood City aggregated zone. The dotted line represents 50 percent assignment, and the solid line represents 100 percent assignment. The logical rules varied by trip type and direction of movement (i.e., inbound to/outbound from Redwood City for end-to-end trips avoided, and inbound to/outbound from the proposed project site for all added trips). The traffic assignment for all origin-destination pairs were weighted based on the distributed project trips and aggregated to derive the project area segment and intersection turning movement volumes.



Source: CDM Smith, 2024.
Note: For the routing example, some of the turn movements or white cells are labeled and segments are highlighted in black, while other turn movements or white cells are left blank and segments are left in gray. With a different routing example, the turn movements or white cells that are labeled and the segments that are highlighted in black would change. The dotted black line represents partially assigned traffic flow (50 percent for two pathways, 33 percent for three pathways, etc.)
Key: EBT = Eastbound Through, EBL = Eastbound Left, EBR = Eastbound Right and SBL = Southbound Left

Figure 2.7 Example Traffic Assignment Logic for Trips to Project Site from Downtown Redwood City

2.2 Non-CEQA LOS Analysis

Outside the context of the CEQA Guidelines, the transportation analysis performed an LOS analysis for project area intersections and segments to meet Redwood City and C/CAG's transportation impact analysis requirements.[42,43] The transportation analysis analyzed background and background plus project traffic scenarios under existing (2023) and cumulative (2040) conditions. The transportation analysis developed and utilized Synchro models to analyze delay-based intersection LOS, and spreadsheet-based calculations to analyze volume-to-capacity (v/c) ratio-based segment LOS. The methodologies used are discussed in more detail as follows.

[42] City of Redwood City. July 21, 2020. RWCmoves Appendix F, Redwood City Transportation Analysis Manual. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311184673700000.

[43] City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP). Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

Peak Hours Identification

The intersection LOS analysis relied on historical and new TMCs at intersections; these belonged to various years and seasons. The weekday peak hour time windows varied across the counts as shown in **Table 2.11**. The LOS analysis used peak hours "as is" in the historical counts and identified the AM and PM peak hours for the new counts conducted as part of this study on February 13, 2024 (Tuesday) as 8 – 9 AM and 4 – 5 PM. The segment LOS analysis and the intersection LOS analysis shared the same peak hours.

Table 2.11 LOS Analysis Peak Hours

Count Date	AM Peak Hour	PM Peak Hour
4/25/2017	07:45-08:45	16:30-17:30
1/31/2018	07:30-08:30	16:00-17:00
9/10/2019	07:45-08:45	16:30-17:30
12/15/2022	07:45-08:45	16:45-17:45
2/13/2024*	08:00-09:00	16:00-17:00

Source: City of Redwood City and City of Menlo Park's past traffic counts, February 2024.
*New count conducted for this study; all others are historical counts gathered from Redwood City and Menlo Park.
Key: AM = morning, PM = evening

Signal Timing Data

Redwood City, City of Menlo Park, and Caltrans provided signal timing data for the project area's signalized intersections, which were coded into the Synchro/SimTraffic model for existing conditions.

Synchro Traffic Modeling

The off-site traffic operations network in the vicinity of the proposed project was modeled in Trafficware's Synchro traffic modeling software. The model network reflected the geometry (lanes, turn pockets, divider, lane merge, lane addition, etc.), traffic control (stop, yield, or signal control) and volumes of project area intersections and roadway segments under the selected transportation analysis conditions (i.e., existing (2023), existing (2023) plus project, cumulative (2040) no project, or cumulative (2040) project). The models were used to analyze intersection operations only; freeway and arterial segment operations were not modeled in the Synchro models. The following detailed assumptions were made for Synchro models:

- Existing condition models:
  - In consultation with Caltrans, the following signal timing coding assumptions were made at select intersections:
    - SR 84 (Woodside Road) / US 101 SB Off-Ramp and Broadway (intersection #6): "uncoordinated" intersection control type. This intersection is free running throughout the day but is yellow yield coordination to the adjacent intersections of SR 84 (Woodside Road) and Veterans Boulevard / US 101 SB On-Ramp (intersection #5), and SR 84 (Woodside Rd) and Bay Rd (intersection not studied for LOS).
    - SR 84 (Woodside Road) and Middlefield Road (intersection #7): free-running all day.
    - Whipple Avenue / E Bayshore Road and US 101 NB Off-Ramp (intersection #10): free-running all day.

  - SR 84 (Marsh Road) / Marsh Road and SR 84 (Bayfront Expressway) / Haven Avenue (intersection #12): intersection with four signal green light phases.

- The signalized study intersections along Seaport Boulevard (intersections #2-4), SR 84 (Woodside Road) (intersections #5-7), Whipple Avenue (intersections #10-11), and the Maple Street and Veterans Boulevard intersection (intersection #9) operate with an "actuated-uncoordinated" control type, while the intersections along Marsh Road (intersections #12-14) operate with an "actuated-coordinated" control type.

- Future condition models:
  - Incorporated the geometry changes and subsequent signal timing changes from the US 101/SR 84 (Woodside Road) Interchange Improvement Project for the intersections along Seaport Boulevard and SR 84 (Woodside Road) from Blomquist Street to Bay Road:
    - For the Seaport Boulevard and Blomquist Street / E Bayshore Boulevard (intersection #4), since the crosswalk crossing Seaport Boulevard was shifted from the east leg to the west leg of the intersection, the associated pedestrian phase was shifted from the northbound through phase to the southbound through phase, with the same WALK and FLASHING DON'T WALK (FDW) time. Since a new crosswalk was added to cross the south leg of the intersection, the associated pedestrian phase was added to the eastbound through phase, with the same WALK and FDW time as the westbound through phase of the same intersection. Cycle length was kept the same as existing.
    - An additional intersection, the SR 84 (Woodside Road) and US 101 NB Off-Ramp / US 101 NB On-Ramp intersection (intersection #4N, coded in Synchro as intersection #104), was added. A two-phase operation was assumed, and cycle length (rounded to the nearest five) was set to match that of the adjacent SR 84 (Woodside Road) and US 101 SB ramps intersection (intersection #5N). The basic parameters such as yellow time, all-red time, vehicle extension time, and recall mode for the phases were set to match the similar phases of the adjacent SR 84 (Woodside Road) and US 101 SB ramps intersection as well.
    - The north leg (Veterans Boulevard) of SR 84 (Woodside Road) and Veterans Boulevard / US 101 SB On-Ramp (intersection #5 in the existing models) was replaced by the US 101 SB Off-Ramp. Since the north leg became an eastbound one-way approach, the protected eastbound-left phase was removed (intersection #5N in the future models, coded in Synchro as intersection #105). Since a new crosswalk was added to cross the south leg of the intersection, the associated pedestrian phase was added to the eastbound through phase, with the WALK and FDW time set to match the adjacent SR 84 (Woodside Road) and Broadway intersection. Cycle length was kept the same as existing.

- The northeast leg (US 101 SB Off-Ramp) of the SR 84 (Woodside Road) / US 101 SB Off-Ramp and Broadway intersection (intersection #6 in the existing models) was omitted creating the SR 84 (Woodside Road) and Broadway intersection (intersection #6N, coded in Synchro as intersection #106 in the future models). Since a new crosswalk was added to cross the east leg of the intersection, the associated pedestrian phase was added to the northbound through phase, with the WALK and FDW time set to match the northbound through phase of the same intersection. Because of this additional associated pedestrian phase, the minimum split for the northbound-through phase increased. The cycle length was then recalculated by adding the additional time needed for the northbound phase's minimum split and subtracting the southwest-bound phase's split in the existing conditions and rounded to the nearest five seconds.

– Cycle length was kept the same as existing conditions (except the aforementioned adjustment for the SR 84 (Woodside Road) and US 101 SB Ramps intersection), while splits and offsets were optimized using Synchro.

– A new intersection, the Seaport Boulevard Loop and Proposed Project Facility Entrance Road (intersection #1c), was added. It is coded as a three-way stop-controlled intersection.

– The Seaport Boulevard and Pacific Shores Center Entrance Road intersection (intersection #1a) was converted from a three-way stop-controlled intersection in the cumulative (2040) no project conditions to a signalized intersection in the cumulative (2040) project conditions. It is assumed that the intersection would operate with a split phasing with three phases, one for each approach. Given the travel speed of the roadways and size of the intersection, it is assumed that the yellow time would be 3 seconds, and all-red time would be 1 second. The rest of the basic parameters were maintained as the default values in Synchro. It is assumed that the control type would be actuated-uncoordinated, and all phases are non-recalled. The cycle length was optimized using Synchro.

Segment Volume-to-Capacity Calculation

A spreadsheet was developed to perform v/c calculations on freeway and arterial segments. The transportation analysis gathered a wide range of data for US 101, which was used in AM and PM peak hour v/c calculations on the freeway segments:

- Caltrans Traffic Census[44] 2019 bi-directional mainline average daily traffic (ADT) and 2021 truck percentage on US 101 at the interchange with SR 84 in Redwood City (California Postmile 5.385) of 224,000 and 4.5 percent, respectively
- Caltrans PeMS 2019 to 2024 ADT adjustment factors, 2024 data on directional splits, peak month factor, peak day factor, 8-9 AM and 4-5 PM peak hour flow shares
- Assumed peak hour factor of 0.95

[44] California Department of Transportation (Caltrans). 2019 Traffic Volumes: Annual Average Daily Traffic (AADT) For ALL Vehicles on California State Highways. Available: https://dot.ca.gov/programs/traffic-operations/census; Caltrans. 2021 Truck Traffic: Annual Average Daily Traffic (AADT) For Truck Traffic on California State Highways. Available: https://dot.ca.gov/programs/traffic-operations/census.

- Vehicles to passenger car equivalent conversion calculations
- US 101 / SR 84 (Woodside Road) Interchange Improvement Project FREQ Models based US 101 mainline capacities
- On- and off-ramp volumes derived from Redwood City's and Menlo Park's intersection counts

The freeway volume data and v/c calculations were compiled into a spreadsheet.

The transportation analysis also estimated daily traffic volumes and conducted AM and PM peak hour v/c calculations on the arterial segments using the following:

- New field ADT count on Veterans Boulevard between Maple Street and Hansen Way over 5 consecutive weekdays from February 12, 2024 through February 16, 2024, using tube counts to estimate typical AM and PM peak hour shares of traffic on the project area arterial roadway system
- Derived AM and PM peak hour arterial segment volumes and truck percentages by direction using intersection approach volumes, and derived daily volumes using the field observations above
- Vehicles to passenger car equivalent conversion calculations
- Capacity calculations using number of through lanes on arterial segments, assumed saturation flow rate of 1,700 vehicles per hour per lane, and assumed green-to-cycle-length (g/C) ratio of 0.45 for through movements based on pages 16-29 of the 7th edition of the HCM[45]

The arterial volume data and v/c calculations were compiled into a spreadsheet.

Intersection Vehicular LOS Determination

The transportation analysis used the 2010 HCM LOS criteria for signalized and unsignalized intersections, which are the same as those used in the 2023 C/CAG CMP (see **Figure 2.8** and **Figure 2.9**) to evaluate project area intersections. Using delay results from Synchro/SimTraffic modeling and delay thresholds in the HCM LOS criteria tables, this study assigned an LOS to each intersection.

[45] National Academies of Sciences, Engineering, and Medicine. 2022. Highway Capacity Manual (HCM) 7th Edition: A Guide for Multimodal Mobility Analysis. Washington, DC: The National Academies Press.

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≤10	Free Flow
B	>10 – 20	Stable Flow (slight delays)
C	>20 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F[1]	>80	Forced flow (congested and queues fail to clear)

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.
1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

Source: City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP), Appendix B: Traffic LOS Calculation Methods. Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

Figure 2.8 2010 HCM LOS Criteria for Signalized Intersections

Table 2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F[1]	>50

Source: *Highway Capacity Manual 2010*, Transportation Research Board, 2010.
1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

Source: City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP), Appendix B: Traffic LOS Calculation Methods. Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

Figure 2.9 2010 HCM LOS Criteria for Unsignalized Intersections

Freeway Segment Vehicular LOS Determination

The transportation analysis used the 1994 HCM LOS criteria for basic freeway sections (**Figure 2.10**) to evaluate project area freeway segments.

Table B-1
1994 HCM Level of Service Criteria for Basic Freeway Sections

	70 mph Free-Flow Speed				65 mph Free-Flow Speed				60 mph Free-Flow Speed			
LOS	Density[a] (pc/mi/ln)	Speed[b] (mph)	Maximum[c] V/C	MSF[d] (pcphpl)	Density[a] (pc/mi/ln)	Speed[b] (mph)	Maximum[c] V/C	MSF[d] (pcphpl)	Density[a] (pc/mi/ln)	Speed[b] (mph)	Maximum[c] V/C	MSF[d] (pcphpl)
A	≤ 10.0	≥ 70.0	0.318/0.304	700	≤ 10.0	≥ 65.0	0.295/0.283	650	≤ 10.0	60.0	0.272/0.261	600
B	≤ 16.0	≥ 70.0	0.509/0.487	1,120	≤ 16.0	≥ 65.0	0.473/0.457	1,040	≤ 16.0	60.0	0.436/0.412	960
C	≤ 24.0	≥ 68.5	0.747/0.715	1,644	≤ 24.0	≥ 64.5	0.704/0.673	1,548	≤ 24.0	60.0	0.655/0.626	1,440
D	≤ 32.0	≥ 63.0	0.916/0.876	2,015	≤ 32.0	≥ 61.0	0.887/0.849	1,952	≤ 32.0	57.0	0.829/0.793	1,824
E	≤ 36.7/39.7	≥ 60.0/58.0	1.000	2,200/2,300	≤ 39.3/43.4	≥ 56.0/53.0	1.000	2,200/2,300	≤ 41.5/46.0	53.0/50.0	1.000	2,200/2,300
F	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable

[a] Density in passenger cars per mile per lane.
[b] Average travel speed in miles per hour.
[c] Maximum volume-to-capacity ratio.
[d] Maximum service flow rate under ideal conditions in passenger cars per hour per lane.

≤ less than or equal to
≥ greater than or equal to

Note: In table entries with split values, the first value is for four-lane freeways, and the second is for six- and eight-lane freeways.

Source: Transportation Research Board, *Highway Capacity Manual, Special Report 209* (Washington, D.C., 1994), pp. 3-9.

Source: City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP), Appendix B: Traffic LOS Calculation Methods. Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

Figure 2.10 1994 HCM LOS Criteria for Freeway Segments

Arterial Segment Vehicular LOS Determination

The transportation analysis used the 1994 HCM LOS criteria for arterials (**Figure 2.11**) to evaluate project area arterial segments. This study used the calculated v/c ratios and v/c thresholds in the HCM LOS criteria table to assign an LOS to each arterial segment.

Table B-5
CMP Level of Service Criteria for Arterials[a] Based on Volume-to-Capacity Ratios

Level of Service	Description	V/C[b]
A	Free-flow conditions with unimpeded maneuverability. Stopped delay at signalized intersection is minimal.	0.00 to 0.60
B	Reasonably unimpeded operations with slightly restricted maneuverability. Stopped delays are not bothersome.	0.61 to 0.70
C	Stable operations with somewhat more restrictions in making mid-block lane changes than LOS B. Motorists will experience appreciable tension while driving.	0.71 to 0.80
D	Approaching unstable operations where small increases in volume produce substantial increases in delay and decreases in speed.	0.81 to 0.90
E	Operations with significant intersection approach delays and low average speeds.	0.91 to 1.00
F	Operations with extremely low speeds caused by intersection congestion, high delay, and adverse signal progression.	Greater Than 1.00

[a] For arterials that are multilane divided or undivided with some parking, a signalized intersection density of four to eight per mile, and moderate roadside development.
[b] Volume-to-capacity ratio.

≥ greater than or equal to.
< less than.

Source: Transportation Research Board, *Highway Capacity Manual, Special Report 209* (Washington, D.C., 1994).

Source: City/County Association of Governments of San Mateo County (C/CAG). 2023. San Mateo County Congestion Management Program (CMP), Appendix B: Traffic LOS Calculation Methods. October 2023. Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023 Final-wAppendix.pdf.

Figure 2.11 1994 HCM LOS Criteria for Arterial Segments

2.3 CEQA VMT Analysis

To address the requirements of CEQA Guidelines[46] Section 15064.3 and the Appendix G checklist for transportation, the transportation analysis includes a VMT analysis that accounts for all trip types: end-to-end trips avoided, "first mile/last mile" trips added to/from the proposed ferry terminal, "first mile/last mile" trips added to/from Oakland/San Francisco ferry terminals, and trips added by the proposed visitor-serving uses.

This analysis estimated average trip length by trip type using the trip distribution assumptions by trip type and TAZ-to-TAZ distance matrices from Redwood City's updated C/CAG TDM, as shown in **Table 2.12**. Additional assumptions were also needed in special cases as follows:

[46] California Natural Resources Agency (CNRA). 2018. CEQA Guidelines – Final Adopted Text. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf.

- Access distance to the Oakland Ferry Terminal and San Francisco Ferry Terminal from a home location in these cities is based on a 30-minute commute time catchment area at an average speed of 25 miles per hour (mph), that is, 6.25 miles as average for this catchment area;
- Access distance to the Oakland Ferry Terminal and San Francisco Ferry Terminal to a work location in these cities is based on a 15-minute commute time catchment area at an average speed of 25 mph, that is, 3.13 miles as average for this catchment area; and
- Based on hotel industry statistics,[47] the duration of business travel trips (typically done during weekdays) averages to 4.1 days per stay at a hotel. Thus, an average trip length for visitor-serving uses was calculated as approximately 8 miles using a weighted average of the first inbound trip from the airport of 22.5 miles length,[48] one outbound and one inbound trip per day over 4.1 days of stay of 4.5 miles length each,[49] and the last outbound trip to the airport of 22.5 miles length.

Table 2.12 Average Trip Length Estimates

Trip Type	From	To	Average Trip Length (in miles/trip)	
			2023	2040
end-to-end trips avoided*	Centroid for Proposed Redwood City Ferry Terminal Catchment Area (TAZ ID: 2015)	Centroid for Oakland Ferry Terminal Catchment Area (TAZ ID: 2301)	34.66	34.78
end-to-end trips avoided*	Centroid for Proposed Redwood City Ferry Terminal Catchment Area (TAZ ID: 2015)	Centroid for San Francisco Ferry Terminal Catchment Area (TAZ ID: 1711)	25.19	26.48
"first mile/last mile" trips added to/from existing ferry terminal	Home (in Oakland)	Oakland Ferry Terminal	6.25	6.25
"first mile/last mile" trips added to/from existing ferry terminal	Office (in Oakland)	Oakland Ferry Terminal	3.13	3.13
"first mile/last mile" trips added to/from existing ferry terminal	Home (in San Francisco)	San Francisco Ferry Terminal	6.25	6.25
"first mile/last mile" trips added to/from existing ferry terminal	Office (in San Francisco)	San Francisco Ferry Terminal	3.13	3.13
"first mile/last mile" trips added to/from proposed ferry terminal	Home (in Redwood City)	Proposed Redwood City Ferry Terminal (TAZ ID: 1673)	4.41	4.37
"first mile/last mile" trips added to/from proposed ferry terminal	Office (in Redwood City)	Proposed Redwood City Ferry Terminal (TAZ ID: 1673)	4.52	4.74
trips added by proposed visitor-serving uses	Service Population (in Redwood City)	Proposed Visitor-Serving Uses (TAZ ID: 1673)	7.99	7.95

Source: CDM Smith, 2024.
Key: TAZ ID = Traffic Analysis Zone Identification
Note:
*Trips that would not happen if the proposed project is implemented.

[47] Hotel Online website. June 5, 2024. U.S. Business Travel Industry Responsible for Almost 2% of U.S. GDP and 3.5% of Employment in Latest Full-Year Figures. Available: https://www.hotel-online.com/press_releases/release/u-s-business-travel-industry-responsible-for-almost-2-of-u-s-gdp-and-3-5-of-employment-in-latest-full-year-figures/.

[48] The average of distances from the proposed project site to airports of San Francisco, San Jose, and Oakland is 15.4, 20.2, 30.8 miles, respectively, which was used to compute the average distance from the proposed project site to the airport as 22.5 miles.

[49] Using the Redwood City's Modified C/CAG Travel Demand Model, the weighted average distance from the Redwood City ferry terminal catchment area transportation analysis zones (TAZs) to the TAZ encompassing the proposed visitor-serving uses, where weights are employment in the catchment area TAZs, was calculated as 4.5 miles.

For the ferry terminal component and the full project, the transportation analysis estimated annual project trips by applying annualization factors (approximately 261 weekdays, 104 weekend days, and 15 special event days) to weekday, weekend, and special event day average daily vehicle trips.

For visitor-serving uses, weekday, Friday (applicable to restaurant use only), Saturday, and Sunday ITE trip generation rates were used to estimate weekday to average day conversion factors of 1.04, 1.31, and 0.91 for hotel, office, and restaurant land uses, respectively. A conversion factor below 1.0 means that the weekend daily traffic on an average daily basis is higher than the weekday daily average traffic. Applying these conversion factors to weekday daily traffic and an annualization factor of 365, the transportation analysis estimated annual vehicle trips added due to visitor-serving uses.

The transportation analysis computed annual VMT by trip type by multiplying the annual vehicle trips by trip type with the average trip lengths by trip type. Avoided trips result in a negative VMT change and added trips result in a positive VMT change. The transportation analysis computed the net total annual VMT due to the ferry terminal component and the full project. The transportation analysis also estimated per capita VMT by land use type (ferry terminal, hotel, office, and restaurant) by dividing net total annual VMT by net total annual person trips for each land use.

2.4 Other CEQA Transportation Analysis

To address the requirements of the CEQA Guidelines[50] other than Section 15064.3 as listed in Appendix G checklist for transportation, a qualitative analysis was performed for site circulation, parking, transit, bicycle facilities, pedestrian facilities, and safety assessment for this study that is aligned to the 2020 TAM guidelines.[51] The methodologies used are discussed in more detail as follows.

Plans, Ordinances, and Policies Identification and Review

The transportation analysis identified various plans, ordinances, and policies as follows, against which consistency of the proposed project was checked as discussed in **Section 3.1,** Regulatory Setting:

- Port's 2020 Vision Plan[52]
- WETA's 2016 Strategic Plan[53]
- WETA's 2050 Service Vision and Expansion Policy [54]

[50] California Natural Resources Agency (CNRA). 2018. CEQA Guidelines – Final Adopted Text. Available: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/2018_CEQA_FINAL_TEXT_122818.pdf.

[51] City of Redwood City. July 21, 2020. RWCmoves Appendix F, Redwood City Transportation Analysis Manual. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311118467370000.

[52] Port of Redwood City. January 8, 2020. Port of Redwood City 2020 Vision Plan. Prepared by Vickerman & Associates, LLC. Available: 2020 Vision | Port of Redwood (redwoodcityport.com).

[53] Water Emergency Transportation Authority (WETA). 2016. 2016 Strategic Plan. Available: https://weta.sanfranciscobayferry.com/sites/default/files/weta/strategicplan/WETAStrategicPlanFinal.pdf.

[54] WETA. May 9, 2024. 2050 Service Vision and Expansion Policy, adopted by WETA Board – Resolution 2024-19. Available: https://www.bayferry2050.org/service-vision.

- City/County Association of Governments of San Mateo County's (C/CAG's) San Mateo Countywide Transportation Plan 2040,[55] 2023 Congestion Management Program (CMP)[56] and Transportation Demand Management (TDMt[57]) Program[58]
- Redwood City's 2010 General Plan,[59] 2018 Transportation Plan (RWCmoves),[60] 2022 Walk Bike Thrive,[61] City Municipal Code[62] and 2018 Transportation Demand Management Program[63]
- California State Transportation Agency's (CalSTA's) California Transportation Plan 2050[64]
- California Air Resources Board's (CARB's) 2017 Scoping Plan[65] and 2022 Scoping Plan Update[66]
- Metropolitan Transportation Commission's (MTC's) Plan Bay Area 2050+[67] and Transit-Oriented Communities (TOC) Policy[68]
- San Mateo County Transportation Authority's (SMCTA's) 2025-2029 Strategic Plan[69]
- San Mateo County Transit District (SamTrans) Reimagine SamTrans[70]

[55] City/County Association of Governments of San Mateo County (C/CAG). February 2017. San Mateo Countywide Transportation Plan 2040. Available: https://ccag.ca.gov/wp-content/uploads/2014/05/SMCTP-2040-FINAL_.pdf.

[56] City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP). Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

[57] Transportation Demand Management is normally abbreviated as TDM, however, to avoid confusion with a similar acronym for Travel Demand Model, this report uses TDMt as the abbreviation for Transportation Demand Management.

[58] City/County Association of Governments of San Mateo County (C/CAG). No date. Transportation Demand Management Program – Frequently Asked Questions webpage. Available: https://ccagtdm.org/faq/. Accessed August 30, 2024.

[59] City of Redwood City. October 2010. General Plan. Available: https://www.redwoodcity.org/departments/community-development-department/policy-initiatives/general-plan-precise-plans/general-plan.

[60] City of Redwood City. July 2018. RWCmoves. Available: https://rwcmoves.com/final-plan.

[61] City of Redwood City. June 2022. RWC Walk Bike Thrive. Prepared by Fehr and Peers and Eisen Letunic. Available: https://www.redwoodcity.org/home/showpublisheddocument/25615/638016840641870000.

[62] City of Redwood City. Municipal Code. Available: https://library.municode.com/ca/redwood_city/codes/city_code. Accessed August 8, 2024.

[63] City of Redwood City. July 2018. RWCmoves, Appendix E – Redwood City Transportation Demand Management Program. Available: https://rwcmoves.com/wp-content/uploads/2018/07/RWCmoves_AppendixE_TDM-Plan_20180710_3.pdf.

[64] California State Transportation Agency (CalSTA). February 2021. California Transportation Plan 2050. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf.

[65] California Air Resources Board (CARB). November 2017. California's 2017 Climate Change Scoping Plan. Available: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf.

[66] California Air Resources Board (CARB). December 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Available: https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf.

[67] San Francisco Bay Area Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG). MTC and ABAG. March 2026. Plan Bay Area 2050+, Transportation Project List. Available: https://planbayarea.org/sites/default/files/documents/Final_Plan_Bay_Area_2050_Plus_Transportation_Project_List_Report.pdf?cb=9ba7b9c8.

[68] Metropolitan Transportation Commission (MTC). October 2024. MTC's Transit-Oriented Communities Policy - Overview. Available: https://mtc.ca.gov/sites/default/files/documents/2024-10/MTC_TOC_Policy_Overview_October_2024.pdf.

[69] San Mateo County Transportation Authority (SMCTA). No date. 2025-2029 Strategic Plan. Available: https://www.smcta.com/media/StrategicPlan2025-2029.

[70] San Mateo County Transit District (SamTrans). March 2022. Reimagine SamTrans. Available: https://www.samtrans.com/media/19711/.

The transportation analysis also identified and reviewed key resources to determine applicable transportation analysis methodologies suited to the proposed project:

- California Senate Bill 743 (SB 743)[71]
- LCI (formerly OPR)'s Technical Advisory to SB 743[72]
- Caltrans' Transportation Analysis Framework (TAF)[73] and Transportation Analysis under CEQA (TAC)[74]

Multimodal System Assessment

Road Network

The transportation analysis identified key roadway segments and intersections of the off-site roadway network in the proposed project vicinity and developed detailed descriptions included in **Section 3.2.1**.

Transit

The transportation analysis assessed the off-site roadway network in the proposed project vicinity for the presence of public transit and private shuttle services and identified the need for improving transit access and connectivity to/from the project site, and existing projects/policies/programs addressing these needs. The details of existing public transit services and private shuttles in the area that provide access from Redwood City's downtown area and other areas are included in **Section 3.2.2**. The existing Seaport Center Caltrain shuttle that operates between the Caltrain Redwood City Station and the Pacific Shores Center and Seaport Center would serve the project site and additional private shuttles would provide connection to the ferry terminal either as a ferry terminal stop or from a connecting location.

Pedestrian

The transportation analysis assessed the off-site roadway network in the vicinity of the proposed project for the presence of sidewalks and crosswalks, the need for improving pedestrian access and connectivity to/from the project site, and existing projects/policies/programs addressing these needs. The details of existing and planned pedestrian facilities that would provide access from Redwood City's downtown area and other parts to the proposed project site are included in **Section 3.2.2**.

[71] California Legislative Information. 2013. SB 743 as Enrolled and Chaptered on September 27, 2013. Available: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743.

[72] California Governor's Office of Land Use and Climate Innovation (formerly Office of Planning and Research [OPR]). December 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available: https://lci.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

[73] California Department of Transportation (Caltrans). September 2020. Transportation Analysis Framework (TAF) - First Edition, Evaluating Transportation Impacts of State Highway System Projects. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-taf-fnl-a11y.pdf.

[74] California Department of Transportation (Caltrans). September 2020. Transportation Analysis under CEQA (TAC) - First Edition, Evaluating Transportation Impacts of State Highway System Projects. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf.

Bicycle

The transportation analysis assessed the off-site roadway network in the vicinity of the proposed project for the presence and quality (or class) of existing and planned bicycle facilities, the need for further improving bicycle access and connectivity to/from the project site, and existing projects/policies/programs addressing these needs. Other mobility options, such as bikeshare and e-mobility bikes and scooters, were also considered. The details of existing and planned bicycle facilities that would provide access from Redwood City's downtown area and other parts to the proposed project site are included in **Section 3.2.2**.

Site Access and Circulation Assessment

Figure 1.2 and **Figure 1.3** show the on-site layout and off-site access drawings for the proposed ferry terminal and parking lot and the general location of the future visitor-serving uses. These layouts/drawings, along with the project description, were used to assess the end-to-end multimodal access and circulations for general vehicles, bikes, pedestrians, transit vehicles, emergency vehicles, and users with disabilities. Redwood City's Municipal Code and other regional/local requirements pertaining to residential, commercial, and industrial land use developments were reviewed and determined to not directly apply to ferry terminal (transit facility) use. Parking for vehicles and bikes and pick-up / drop-off areas associated with the ferry terminal component was discussed in the general terms of WETA's typical ferry terminal operations. The precise location and design of entrances and exits to the visitor-serving uses would be determined during future site planning and evaluated for compliance with the associated regional/local requirements at that time.

Traffic Safety Assessment

Redwood City provided the Port with data for a 6-year historical period (January 1, 2017 to December 31, 2022) of crashes on the non-freeway roadway network in the project vicinity.[75] The transportation analysis summarized and analyzed the existing traffic safety conditions. This analysis also qualitatively discussed the need for improving traffic safety near the project site, and existing projects/policies/programs addressing these needs. The details of existing crashes on the non-freeway roadway network that would provide access from Redwood City's downtown area and other parts to the proposed project site are included in **Section 3.2.5**. Safety impacts are discussed qualitatively based on anticipated VMT changes and shifts in traffic patterns in **Section 4.2.1**.

[75] Owrang, Malahat. Senior Transportation Planner, City of Redwood City. Personal Communication. December 21, 2023.

Section 3
Existing Conditions

3.1 Regulatory Setting

This section discusses the federal, State, regional, and local regulatory framework related to transportation that is relevant to the proposed project.

3.1.1 Federal

Americans with Disabilities Act of 1990

Title III of the Americans with Disabilities Act (ADA), Title 42 of the United States Code, prohibits discrimination on the basis of disability in places of public accommodation (i.e., businesses and non-profit agencies that serve the public) and commercial facilities (i.e., other businesses). Part 36, Appendix A, titled "Standards for Accessible Design," establishes minimum accessibility standards for use in designing and constructing a new facility or altering an existing facility, parking spaces including access aisles serving car and van parking spaces,[76] and sidewalks. Relevant guidelines include detectable warning for pedestrians entering traffic where there is no curb and an unobstructed, 48-inch pedestrian travel way; parking space and access aisles dimensions, markings, and locations; and sidewalk width.

3.1.2 State

California Senate Bill 743

Senate Bill 743 (Stats. 2013, ch. 386) (SB 743), passed into law in 2013,[77] initiated an update to the CEQA Guidelines to change how lead agencies evaluate transportation impacts under CEQA, with the goal of better measuring the actual transportation-related environmental impacts of any given project.

SB 743 implements Statewide CEQA changes relevant to the proposed project; specifically, it eliminated traffic congestion and automobile delay as a significant impact under CEQA (Pub. Res. Code § 21099(b)(1); CEQA Guidelines § 15064.3(a)).

California Governor's Office of Planning and Research 2018 Technical Guidelines

Following the codification of SB 743 as Section 21099 of CEQA in 2013, LCI (formerly OPR) developed technical guidelines for the California Natural Resources Agency (CNRA) to update CEQA on the analysis of transportation impacts (Cal. Code Regs., Title 14, Div. 6, Ch. 3, § 15000 et seq.) and promote the reduction of greenhouse gas (GHG) emissions.

LCI's Technical Advisory defines "automobile" as excluding heavy-duty trucks (i.e., automobile is defined as "on-road passenger vehicles, specifically cars and light trucks.") (LCI [formerly OPR] SB 743 Technical Advisory, p. 4; see also Pub. Res. Code § 21168.6.6(a)(3)(A)(ii)(II); Gov. Code § 65080(b)(2)(A).)

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[76] U.S. Department of Justice, Civil Rights Division. No date. Americans with Disabilities Act (ADA) - Accessible Parking Spaces webpage. Available: https://www.ada.gov/topics/parking/. Accessed August 24, 2024.

[77] California Legislative Information. 2013. SB 743 as Enrolled and Chaptered on September 27, 2013. Available: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743.

LCI selected VMT as the preferred transportation impact metric over the metric of automobile delay (as measured by "level of service" and other similar metrics) and applied their discretion to require its use Statewide. LCI's Technical Advisory,[78] recommends that applying a per capita or per employee VMT that is 15 percent below that of existing development is a reasonable threshold. This threshold is based on evidence that suggests a 15 percent reduction in VMT is an achievable reduction at the project level in a variety of settings and would help the State achieve its climate goals based on currently available information. LCI also recommends a number of screening criteria to help jurisdictions determine types of projects for which a VMT impact is unlikely, such as those adjacent to high quality transit services, in existing low VMT areas, or providing local-serving retail or public facilities (grocery store, neighborhood school, library, drug store, dry cleaners, gym, etc.). Caltrans' VMT-Focused Transportation Impact Study Guide supports the use of the LCI recommendations for land use projects and plans.

CEQA Guidelines Section 15064.3 - Determining the Significance of Transportation Impacts

CEQA Guidelines Section 15064.3(b) that went into effect Statewide on July 1, 2020[79] implements SB 743 and LCI recommendations for determining significance of automobile transportation impacts using VMT as a metric. Under CEQA Guidelines Section 15064.3 subdivision (b),[80] the updated criteria for analyzing transportation impacts for land use and transportation projects are codified in the guidelines as follows:

> *"…**Land Use Projects:** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.*
>
> ***Transportation Projects:** Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152…"*

[78] California Governor's Office of Land Use and Climate Innovation (formerly Office of Planning and Research [OPR]). December 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. P.10. Available: https://lci.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

[79] California Governor's Office of Land Use and Climate Innovation (formerly Office of Planning and Research [OPR]). No date. SB 743 Frequently Asked Questions webpage. Available: https://opr.ca.gov/ceqa/sb-743/faq.html#:~:text=Starting%20on%20July%201%2C%202020%2C%20agencies%20analyzing%20the,a%20proposed%20project%20would%20create%20on%20California%20roads. Accessed August 30, 2024.

[80] California Code of Regulations Title 14, Division 6, Chapter 3, Article 5, Section 15064.3 - Determining the Significance of Transportation Impacts.

Caltrans Transportation Analysis Framework and Transportation Analysis under CEQA

Consistent with the language of Section 15064.3 of the CEQA Guidelines, Caltrans developed a Transportation Analysis Framework (TAF)[81] and Transportation Analysis under CEQA (TAC)[82] to guide CEQA transportation impact analysis for projects on the State Highway System (SHS). The proposed project is not on the SHS; hence, these guidelines do not apply to the proposed project.

The traffic generated by the proposed project, however, would use the SHS, including US 101, SR 84 (Marsh Road), SR 84 (Woodside Road), and associated intersections and interchanges. This analysis, with coordination support from Redwood City, collected data on these SHS roadway segments and intersections from Caltrans and used them in the VMT analysis that met the regional/local requirements.

California State Transportation Agency's (CalSTA's) California Transportation Plan 2050

The Statewide transportation plan[83] found that more efficient land use alone could reduce VMT by roughly 8 percent from the 2050 baseline. When the land use strategies are combined with an increase in telework and transportation focus strategies such as higher capacity, frequency and fare free local transit, reduced last-mile deliveries, increase in high occupancy vehicle (HOV) 3+ vehicles, road user charges, congestion pricing, etc., the benefits can reach up to a 27 percent reduction in VMT along with a non-auto mode share increase of 10 percent. The Plan expects that per capita VMT would reduce from 23 miles per day in the 2050 baseline to only 16 miles per day under the Plan's combined scenario. The proposed project is aligned to the Statewide plan by increasing transit capacity and reducing VMT.

Caltrans' VMT-Focused Transportation Impact Study Guide

Caltrans developed a Transportation Impact Study Guide[84] to provide guidance to Caltrans Districts, lead agencies, tribal governments, developers, and consultants regarding Caltrans review of a land use project or plan's transportation analysis using a VMT metric. Caltrans' reviews are founded upon their goals to reduce single occupancy vehicle trips, provide a safe transportation system, reduce per capita VMT, increase accessibility to destinations via cycling, walking, carpooling, and transit, and GHG emissions.

California Manual on Uniform Traffic Control Devices

The California Manual on Uniform Traffic Control Devices (MUTCD)[85] provides uniform standards and specifications for all official traffic control devices in California. The MUTCD aims to improve safety and mobility for all travelers in California by providing guidance to transportation practitioners that strives to

[81] California Department of Transportation (Caltrans). September 2020. Transportation Analysis Framework (TAF) - First Edition, Evaluating Transportation Impacts of State Highway System Projects. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-taf-fnl-a11y.pdf.

[82] California Department of Transportation (Caltrans). September 2020. Transportation Analysis under CEQA (TAC) - First Edition, Evaluating Transportation Impacts of State Highway System Projects. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-09-10-1st-edition-tac-fnl-a11y.pdf.

[83] California State Transportation Agency (CalSTA). February 2021. California Transportation Plan 2050. Available: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/ctp-2050-v3-a11y.pdf.

[84] California Department of Transportation (Caltrans). May 2020. Vehicle Miles Traveled-Focused Transportation Impact Study Guide. Available: https://dot.ca.gov/caltrans-near-me/district-4/d4-programs/d4-transplanning-local-assistance/d4-transportation-planning-community-engagement/-/media/f8573ade5689499b8bec8e27b041f397.ashx.

[85] California Department of Transportation (Caltrans). 2026. California Manual on Uniform Traffic Control Devices (MUTCD) 2026, Revision 9. Available: https://dot.ca.gov/programs/safety-programs/camutcd.

balance safety and convenience for drivers, pedestrians, and bicyclists. The MUTCD integrates multimodal policies for safer crossings, work zones, and intersections.

California Highway Design Manual

The California Highway Design Manual (HDM)[86] establishes uniform policies and procedures to carry out the State highway design functions of Caltrans. It provides comprehensive guidelines and standards for geometric design, traffic operations, highway safety, roadside design, environmental considerations, and structural design. The manual ensures that highway design projects meet high standards of safety, functionality, and environmental sustainability.

The California Air Resources Board (CARB) 2017 Scoping Plan and 2022 Update

The 2017 Scoping Plan - Identified VMT Reductions and Relationship to State Climate Goals[87] recommended that a reduction in light-duty VMT of 16.8 percent is necessary to achieve the State's GHG reduction goals. The Final 2022 Scoping Plan Update[88] identifies strategies to meet Statewide GHG reduction goals, which include achieving a Statewide reduction of VMT of at least 25 percent below 2019 levels by 2030 and 30 percent below 2019 levels by 2045.

3.1.3 Regional/Local

San Francisco Bay Area Metropolitan Transportation Commission Resolutions 3434 and 4530, and Plan Bay Area 2050+

The 2005 MTC Resolution 3434 (Transit-Oriented Development Policy for Regional Transit Expansion Projects)[89] and its revised 2008 version,[90] allows programming and allocation of regional funds for environmental and design related work for regional transit extension projects. These projects included WETA's ferry expansion projects, including a new Redwood City ferry terminal and service. The resolution or Transit-Oriented Development (TOD) policy encourages minimum levels of development around transit stations (including ferry terminals) along new corridors, multimodal station access, and pedestrian-, bicycle-, and ADA-friendly and universal design.

Further, MTC's regional transportation plan, the Plan Bay Area 2050+,[91] adopted Project ID 25-T11-165 to implement new ferry service between Oakland, San Francisco, and Redwood City in the period of 2036 -

[86] California Department of Transportation (Caltrans). 2025. Highway Design Manual. Available: https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm.

[87] California Air Resources Board (CARB). January 2019. 2017 Scoping Plan – Identified VMT Reductions and Relationship to State Climate Goals. Available: https://ww2.arb.ca.gov/sites/default/files/2019-01/2017_sp_vmt_reductions_jan19.pdf.

[88] California Air Resources Board (CARB). December 2022. 2022 Scoping Plan for Achieving Carbon Neutrality. Available: https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf.

[89] San Francisco Bay Area Metropolitan Transportation Commission. 2005. MTC Resolution 3434 - Transit-Oriented Development (TOD) Policy for Regional Transit Expansion Projects, Adopted on July 27, 2005. Available: https://mtc.ca.gov/sites/default/files/Resolution%203434%20TOD_policy.pdf.

[90] San Francisco Bay Area Metropolitan Transportation Commission. September 2008. Resolution No. 3434, Revised. Available: https://mtc.ca.gov/sites/default/files/documents/2024-05/RES-3434_approved.pdf.

[91] MTC and Association of Bay Area Governments (ABAG). March 2026. Plan Bay Area 2050+. Available: https://planbayarea.org/sites/default/files/documents/Final_Plan_Bay_Area_2050_Plus_0.pdf?cb=c85e41cb.

2050, including a new terminal in Redwood City.[92] Since 2023, MTC's Transportation Improvement Program (TIP) has been allocating funds to Project ID 25-T11-165.

MTC adopted a Transit-Oriented Communities (TOC) Policy[93] on September 28, 2022 (MTC Resolution 4530). The TOC Policy applies to the half-mile area around existing and planned fixed-guideway transit stops and stations (i.e., regional rail, commuter rail, light rail transit, bus rapid transit, and ferries) and under the TOC Policy, the proposed project qualifies as a Tier 4 level of transit service. Compliance with the TOC Policy is voluntary for advancing goals of Plan Bay Area 2050+ or to be eligible for some types of MTC discretionary funding. The individual policies under the TOC Policy that apply to the proposed project include vehicle parking and bicycle parking requirements for new commercial development, where a maximum of four parking spaces are allowed per 1,000 square feet, and a minimum of 1 secure bicycle parking space is required per 5,000 square feet of commercial office space.[94] It is important to note that the vehicle and bicycle parking requirements apply to different land use types; the vehicle parking requirements apply to new commercial development (e.g., office, hotel, restaurant), while the bicycle parking requirements apply to new commercial office development only.

Water Emergency Transportation Authority – 2002 Implementation and Operations Plan (IOP), 2003 Program EIR, 2016 Strategic Plan, and 2050 Service Vision and Expansion Policy

In its 2016 Strategic Plan,[95] WETA envisions eleven new ferry terminals, including a new terminal in Redwood City, and eight new routes by 2035. The Port of Redwood City has long been considered a potential ferry terminal site. A Redwood City – San Francisco route was identified in an IOP[96] prepared in 2002 for the expansion of ferry service in the San Francisco Bay Area and evaluated in a 2003 Program EIR.[97]

Adopted in May 2024, the WETA 2050 Service Vision and Expansion Policy[98] describes WETA's vision for the ferry system, the criteria for evaluating routes that enter the project development pipeline, and the roles, responsibilities, and financial commitments of WETA and its partners in enhancing and expanding ferry service over the next 25 years. Service Vision Goal 1 seeks to grow WETA's ferry network and routes and specifically identifies Redwood City service as a priority project.

[92] San Francisco Bay Area Metropolitan Transportation Commission. March 2026. Plan Bay Area 2050+, Transportation Project List. Available: https://planbayarea.org/sites/default/files/documents/Final_Plan_Bay_Area_2050_Plus_Transportation_Project_List_Report.pdf?cb=9ba7b9c8.

[93] Metropolitan Transportation Commission (MTC). October 2024. MTC's Transit-Oriented Communities Policy - Overview. Available: https://mtc.ca.gov/sites/default/files/documents/2024-10/MTC_TOC_Policy_Overview_October_2024.pdf.

[94] Metropolitan Transportation Commission (MTC). October 2024. MTC's Transit-Oriented Communities Policy - Overview. Available: https://mtc.ca.gov/sites/default/files/documents/2024-10/MTC_TOC_Policy_Overview_October_2024.pdf.

[95] Water Emergency Transportation Authority (WETA). 2016. 2016 Strategic Plan. Available: https://weta.sanfranciscobayferry.com/sites/default/files/weta/strategicplan/WETAStrategicPlanFinal.pdf.

[96] WETA (formerly Water Transit Authority). 2002. A Strategy to Improve Public Transit with an Environmentally Friendly Ferry System: Final Implementation & Operations Plan.

[97] Water Emergency Transportation Authority (WETA) (formerly Water Transit Authority). June 2003. Expansion of Ferry Transit Service in the San Francisco Bay Area Final Program Environmental Impact Report. Prepared by URS Corporation.

[98] WETA. May 9, 2024. 2050 Service Vision and Expansion Policy, adopted by WETA Board – Resolution 2024-19. Available: https://www.bayferry2050.org/service-vision.

Port of Redwood City Ferry Terminal 2007-2022 Studies and 2020 Vision Plan

The first planning study for the terminal was completed in 2007 and the first Redwood City and WETA study of ferry service at a Port of Redwood City site was conducted in 2012.[99, 100] In 2020, the Port adopted a long-term strategic vision with the goal of strengthening the Port's impact on the region's economy and quality of life. The 2020 Vision Plan[101] identifies a ferry terminal as a key component of this vision. The proposed project would implement the expansion of ferry service identified in WETA's 2016 Strategic Plan and the Port's 2020 Vision Plan to expand ferry service, reduce highway congestion, and enhance the emergency response network. The proposed project would also support implementation of 2020 Vision Plan goals for increasing the City's connection to the waterfront. The ferry terminal studies include a 2022 Redwood City Ferry Business Plan[102] and this study, which is part of the EIR for the proposed project.

City/County Association of Governments of San Mateo County (C/CAG) San Mateo Countywide Transportation Plan 2040, 2023 Congestion Management Program, and 2022 Transportation Demand Management Policy Implementation Guide

C/CAG's Countywide Transportation Plan 2040[103] identifies the Redwood City ferry terminal project as a regional transportation plan (RTP) project and recognizes WETA's strategic plan goals for this terminal, including its ability to provide critical emergency response.

C/CAG, as the Congestion Management Agency for San Mateo County, is required to prepare and adopt a CMP on a biennial basis. The purpose of the CMP is to identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions. The latest version of the CMP was developed in 2023.[104]

The 2023 CMP states that while VMT became the required metric for analyzing the impact of development on the transportation system on July 1, 2020 (as part of SB 743), specific guidance has not been released for incorporating VMT into the CMP and, as such, LOS is still used.

The 2023 CMP provides a list of CMP roadway facilities, including segments and intersections, as well as LOS methodologies and LOS standards[105] applied to the roadway facilities to evaluate their performance.

Table 3.1 shows the traffic LOS definitions used to describe the quality of traffic operations.

[99] Port of Redwood City. 2007. Port of Redwood City Ferry Terminal Locational Analysis, Environmental Assessment, & Conceptual Design. Prepared by CHS Consulting Group. Available: https://www.redwoodcity.org/home/showpublisheddocument?id=18192.

[100] WETA. July 2012. Redwood City Ferry Terminal - Site Feasibility Report (Draft). Prepared by KPFF Consulting Engineers. Available: https://www.redwoodcity.org/home/showpublisheddocument?id=18035.

[101] Port of Redwood City. January 8, 2020. Port of Redwood City 2020 Vision Plan. Prepared by Vickerman & Associates, LLC. Available: 2020 Vision | Port of Redwood (redwoodcityport.com).

[102] Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan. Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf.

[103] City/County Association of Governments of San Mateo County (C/CAG). February 2017. San Mateo Countywide Transportation Plan 2040. Available: https://ccag.ca.gov/wp-content/uploads/2014/05/SMCTP-2040-FINAL_.pdf.

[104] City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP). Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.

[105] As per the C/CAG 2023 CMP, LOS standards were set as per California Government Code Sections 65089.1 (A) and (B) and are intended to measure roadway congestion for all State highways and principal arterials included in the CMP's Roadway System. As per the legislative requirements, the CMP may not establish any standard below LOS E unless the LOS was F at the time that the standard was established in 1991.

Table 3.1 Traffic LOS Definitions

LOS Level	Description
A	Free-flow conditions with unimpeded maneuverability.
B	Reasonably unimpeded operations with slightly restricted maneuverability.
C	Stable operations with somewhat more restrictions. Motorists will experience appreciable tension while driving.
D	Approaching unstable operations where small increases in volume produce substantial increases in delay and decreases in speed.
E	Unstable flow at or near capacity levels with poor levels of comfort and convenience.
F	Forced traffic flow in which the amount of traffic approaching a point exceeds the amount that can be served. Characterized by stop-and-go waves and poor travel times.

Source: City/County Association of Governments of San Mateo County (C/CAG). October 2023. 2023 San Mateo County Congestion Management Program (CMP). Available: https://ccag.ca.gov/wp-content/uploads/2024/02/CCAGCMP2023Final-wAppendix.pdf.
Key: LOS = Level of Service

The roadway network in the vicinity of the proposed project analyzed in this study overlapped with a limited number of the 2023 CMP roadway facilities, with set LOS standards as shown below:

- **Freeway**: US 101 from Whipple Avenue to Santa Clara County Line (LOS Standard: F)
- **Arterials**: SR 84 from Alameda de las Pulgas to US 101 (LOS Standard: E) and SR 84 from US 101 to Willow Road (LOS Standard: D)
- **Intersections:** Marsh Road/SR 84 (LOS Standard: F) and Middlefield Road/SR 84 (LOS Standard: E)

The 2023 CMP used the following LOS methodologies for relevant CMP roadway facility types:

- **Freeways**: Freeways were monitored using average speeds from commercially available INRIX data during the months of April-May 2021. Data was pulled and analyzed for the AM and PM peak periods. LOS is calculated based on average speed on each segment using HCM 1994 procedures and reported for the worst-case direction in each peak period.
- **Arterials**: Arterials are monitored using data from 72-hour traffic counts or turning movement counts taken on each segment countywide. As with two-lane highways, the highest one-hour volume across the three days in each peak period is used to calculate a v/c ratio. Where volumes from a turning movement count are used, data from the peak hour is used. LOS is assigned based on HCM 1994 methodology for arterials.
- **Intersections**: Turning movement counts were collected at each intersection during the AM and PM peak periods. Each intersection was analyzed in Synchro software and assigned an LOS using HCM 2010 methodologies (Note: where signal parameters did not allow the use of HCM 2010, HCM 2000 was used). LOS is reported for both peak periods alongside the delay (in seconds).

C/CAG has a Travel Demand Management (TDMt[106]) Policy Update Approach[107] and an associated Implementation Guide,[108] adopted as a part of the CMP.

According to C/CAG's TDMt policy, access improvements such as on-site bicycle parking spaces, on-site transit stop, shelter with lighting and signage, and off-site bicycle and pedestrian facilities could reduce auto dependence for the trips to/from visitor-serving uses by an additional five to twelve (5-12) percent, compared to the conditions without these access improvements.[109] Conservatively, this analysis did not assume trip reductions due to the proposed access improvements.

San Mateo County Transportation Authority (SMCTA) is responsible for planning, funding, and delivering transportation improvements that use the countywide transportation sales tax. Relevant corridor planning initiatives include the 101 Corridor Connect project, which analyzes transportation improvements within one mile of either side of the Highway 101 corridor in San Mateo County to enhance mobility for all types of transportation.[110] SMCTA has contracted with the San Mateo County Transit District (SamTrans), which operates transit services in the County, to serve as its managing agency. As a result, SMCTA and SamTrans work closely together and share administrative functions.[111]

Redwood City 2010 General Plan, 2018 Transportation Plan (RWCmoves), 2022 Walk Bike Thrive Plan, Zoning Code, 2020 Transportation Analysis Manual, and 2018 Transportation Demand Management Program

Multiple documents and requirements from Redwood City apply to the proposed project. A summary of requirements from each document is presented below:

- **2010 General Plan:**[112] One of the four guiding principles of the General Plan is as follows:

  > *"…Work to develop attractive and convenient transportation alternatives, including transportation hub and ferry system..."*

[106] Transportation Demand Management is normally abbreviated as TDM, however, to avoid confusion with a similar acronym for Travel Demand Model, this report uses TDMt as the abbreviation for Transportation Demand Management.

[107] City/County Association of Governments of San Mateo County (C/CAG). September 2021. Transportation Demand Management Policy Update Approach. Available: https://ccag.ca.gov/wp-content/uploads/2021/09/6.3-A5-CCAG_TDM-Policy-Update-Approach-June-2021_Final-w-redlines.pdf.

[108] City/County Association of Governments of San Mateo County (C/CAG). April 2022. Transportation Demand Management Policy Implementation Guide. Available: https://ccagtdm.org/wp-content/uploads/2022/04/CCAG_TDM-Policy-Update_Implementation-Guide_FINAL_4-19-2022_v11_CLEAN.pdf.

[109] As per C/CAG, the travel demand measures of M8 - Secure Bicycle Storage, M20 - Capital Improvement for Transit including Bus Pullout Space, Bus Shelter, and Visual/Electrical Improvements (i.e., lighting, signage), and M9 - Design Streets to Encourage Bike/Pedestrian Access can potentially reduce VMT by 1 percent, 3 percent (aggregate), and 1 percent, respectively. If the access improvements were treated as M23 – Gap Closure, the VMT reduction benefit can increase by 7 percent further.

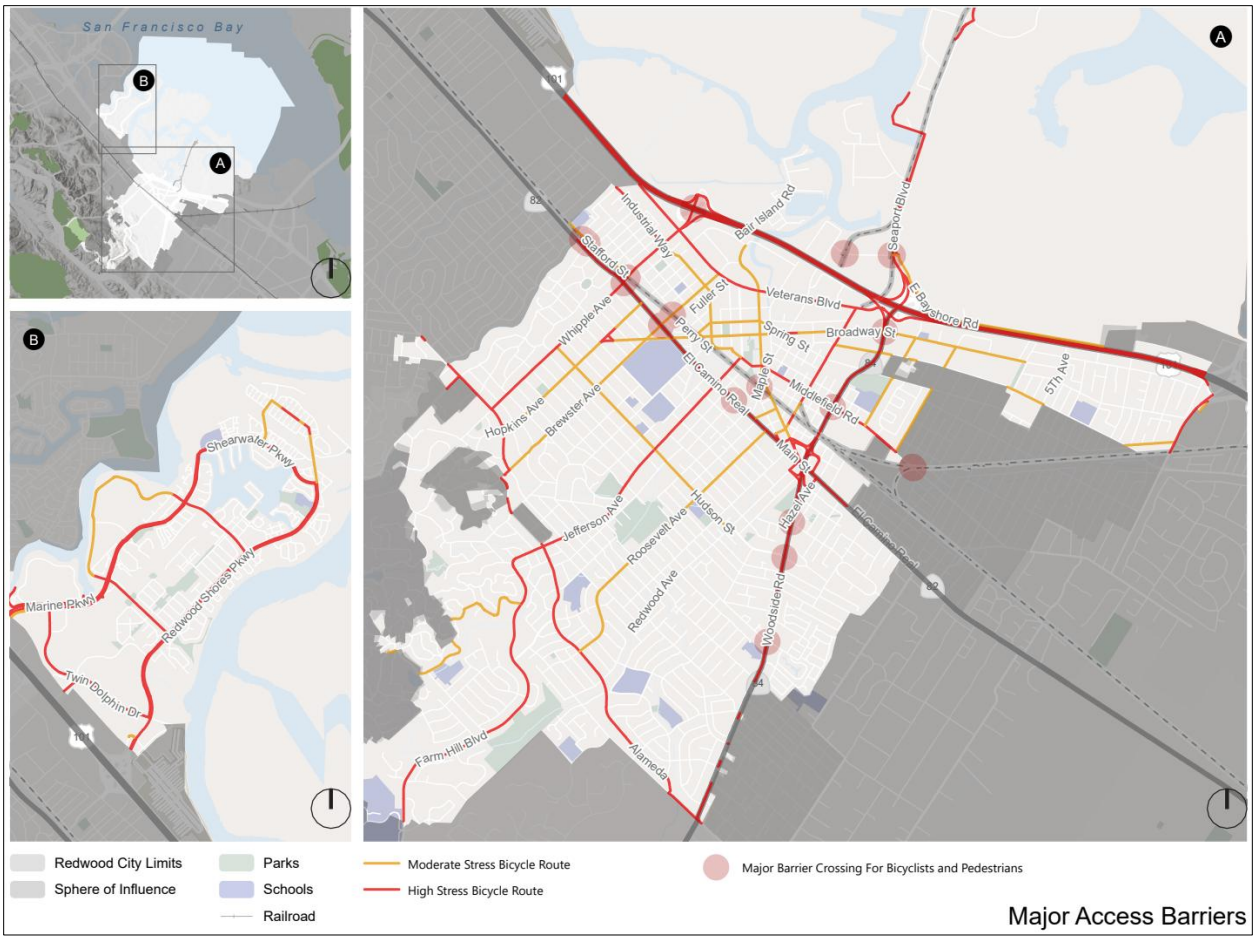
[110] San Mateo County Transportation Authority (SMCTA). 2025. 101 Corridor Connect. Available: https://www.smcta.com/101CC.

[111] San Mateo County Transit District (SamTrans). 2026. Background webpage. Available: https://www.samtrans.com/background. Accessed May 13, 2026.

[112] City of Redwood City. October 2010. General Plan. Available: https://www.redwoodcity.org/departments/community-development-department/policy-initiatives/general-plan-precise-plans/general-plan.

- The General Plan identifies a need to encourage transit use, including promoting development of ferry service and expanding shuttle service over time to support commuters of the potential ferry service. The General Plan considered a mid-Peninsula deep-water Port location as being well suited for a potential commuter ferry terminal location. The General Plan also views the Seaport Corridor as connecting the proposed ferry with employment concentrations along Seaport Boulevard, the Port, Downtown, and Caltrain Station. The General Plan anticipates that commuters would have comparable travel times to drivers using US 101 and the ferry service would provide an environmentally sustainable and pleasant alternative to car commutes, with the added benefit of a water-based emergency evacuation route in the event of a disaster. The General Plan also identifies the need for linking bicycle facilities and local transit shuttles from the terminal to local employment centers and other destinations. The General Plan also calls for new development to provide adequate emergency vehicle access and secure evacuation routes for inhabitants.
- **2018 Citywide Transportation Plan (RWCmoves):**[113] RWCmoves identifies Commuter Ferry Service as a signature project. The Plan also identifies improvements on the Seaport Boulevard multi-use path and Bay Trail gap closure around the future ferry terminal for multi-modal access. The Plan provides average mode shares in 2011-2015 among Redwood City commuters, which includes 73 percent drive alone users, 10 percent carpool, 5 percent transit, 2 percent biking, 3 percent pedestrian, and 7 percent other mode users. The Plan sets a goal of reaching a non-driving mode share of over 50 percent of all trips by 2040; remaining automobile trips should be shared rides and/or zero emission trips. The Plan also supports mixed-use development in the context of the goal of providing seamless connections and improved street access. Lastly, the Plan identifies a trend of shortening trip length through dense, mixed-use development. These findings support the purpose of the proposed project.
- **2022 Walk Bike Thrive Plan:**[114] This Plan identifies that as part of US 101/SR 84 (Woodside Road) Interchange Improvement Project, bicycle and pedestrian improvements will be constructed, which include bicycle and pedestrian undercrossing of US 101 at SR 84 (Woodside Road) path from Seaport Boulevard to Veterans Boulevard (under US 101). The Plan also includes a project to implement Seaport Boulevard path improvements. Lighting may also be needed for the bike and pedestrian undercrossing for additional safety. These projects will address concerns raised by stakeholders regarding how a traveler can get from SR 84 (Woodside Road) to Seaport Boulevard safely by bike without having to make a lengthy detour, especially when the Port is proposed to be developed as ferry commuter destination. These projects would also mostly overcome the "high stress" nature of the bicycle route along Seaport Boulevard (**Figure 3.1**).

[113] City of Redwood City. July 2018. RWCmoves. Available: https://rwcmoves.com/final-plan.
[114] City of Redwood City. June 2022. RWC Walk Bike Thrive. Prepared by Fehr and Peers and Eisen Letunic. Available: https://www.redwoodcity.org/home/showpublisheddocument/25615/638016840641870000.



Source: City of Redwood City. June 2022. RWC Walk Bike Thrive. Prepared by Fehr and Peers and Eisen Letunic. Available: https://www.redwoodcity.org/home/showpublisheddocument/25615/638016840641870000.

Figure 3.1 Bicycle Stress Levels in Proposed Project Vicinity

- **City of Redwood City Zoning Code:**[115] The existing zoning classification for the project site is general industrial (GI) which would allow the ferry terminal use. The proposed project includes a proposed zone change to General Commercial (CG) which would allow development of the visitor-serving uses, as well as the ferry terminal.
- **2020 Transportation Analysis Manual (TAM):**[116] The TAM provides guidelines on the evaluation methods and criteria for CEQA and non-CEQA transportation analysis in the context of local developments. The methods include the following:
  - **On-Site Circulation:** Review and evaluate site access locations, turning radii, truck loading areas, emergency access, and other site characteristics with respect to operations and safety for all modes of transportation.

[115] City of Redwood City. Municipal Code. Available: https://library.municode.com/ca/redwood_city/codes/city_code. Accessed August 8, 2024.

[116] City of Redwood City. July 21, 2020. RWCmoves Appendix F, Redwood City Transportation Analysis Manual. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311118467370000.

- **Pedestrian Facilities:** Identify any existing or planned pedestrian facilities that may be affected by the project. Document how the project will affect local pedestrian circulation (e.g., disclose how widening a road or adding a driveway will affect pedestrian safety and walking times).
- **Bicycle Facilities:** Identify any existing or planned facilities (per RWCmoves) that may be affected by the project.
- **Transit:** Identify any existing or planned transit facilities that may be affected by the project. If appropriate, document how the project improves access to or utilization of transit. For system planning, use crush load as capacity, not seated capacity.
- **Safety Assessment:** Evaluate project trips added to intersections or street segments that have safety enhancement projects identified within the study area that are proposed as part of RWCmoves or other future safety studies, such as Vision Zero.
- **Off-Site Traffic Operations:** Roadway facilities within one mile that are known to operate at LOS D (or according to the LOS standard as set by the CMP or the General Plan) or worse under existing conditions based on previous studies and locations where the project adds 30 or more peak hour trips may be required to be analyzed. The City reserves the right to define the study area. All roadway facility analysis should be conducted using the latest version of the HCM.
- **Intersection Traffic Control:** Evaluate unsignalized intersections located within the study area to determine appropriate traffic control under project conditions. Analysis should consider the appropriateness of roundabouts as an alternative to traffic signals.

Figure 3.2 shows the VMT impact criteria and thresholds defined in the TAM for land use types under baseline conditions. The TAM also states that the cumulative threshold for the project's effect on VMT is any change to the City's per capita VMT, applying the boundary method.

Table 3.2 summarizes Redwood City's mobility deficiency and impact criteria under baseline and/or cumulative conditions to evaluate a proposed project's non-CEQA LOS impacts.

Project Type	Significance Criteria	Current Level	Impact Threshold
Residential	A project exceeds existing countywide home-based VMT per capita minus 15 percent.	12.3 Home-based VMT per Capita (Countywide Average)	10.5 Home-based VMT per Capita
Office	A project exceeds countywide home-based work VMT per employee minus 15 percent.	17.6 Home-based work VMT per Employee (Countywide Average)	15.0 Home-based work VMT per Employee
Retail/Hotel	A net increase in total countywide VMT per service population.	32.0 Total VMT per service population	32.0 Total VMT per service population
Mixed-Use	Evaluate each component of a mixed-use development independently, taking credit for internal capture, and apply the significance criteria for each project type.		
Other Land Use Types	The City's TAM explicitly addresses residential, office and retail/hotel projects because those are very common land use types. Applicants should coordinate with the City to develop appropriate, project-based VMT thresholds for other land uses such as entertainment, education, medical, and industrial/warehouse.		

Source: City of Redwood City. July 21, 2020. RWCmoves. Appendix F, Table F-8, Redwood City Transportation Analysis Manual. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311118467370000.

Figure 3.2 VMT Impact Criteria for Land Use Projects under Baseline Conditions

Table 3.2 Mobility Deficiency Criteria and Standards

Facility Type	Standard	Mobility Deficiency Criteria
On-Site Circulation	N/A	Project designs for on-site circulation, access, and parking fail to meet City design guidelines. Where City standards are not defined, industry standards (Highway Design Manual, Manual on Uniform Traffic Control Devices [MUTCD], etc.) should be referenced, as appropriate. Failure to provide adequate accessibility for service and delivery trucks on-site, including access to loading areas. Project will result in a hazard or potentially unsafe conditions without improvements.
Parking	N/A	Project increases off-site parking demand above a level required by the City Zoning Code.
Pedestrian Facilities	N/A	Project fails to provide safe and accessible pedestrian connections between project buildings and adjacent streets, trails, and transit facilities. Project adds trips to an existing facility along the project frontage that does not meet current pedestrian design standards.
Bicycle Facilities	N/A	Project disrupts existing or planned bicycle facilities or is otherwise inconsistent with RWCmoves or future plans. Project adds bicycle trips along project frontage to an existing facility that does not meet current bicycle design standards.
Transit	N/A	Project disrupts existing or planned transit facilities and services or conflicts with City adopted plans, guidelines, policies, or standards.

Facility Type	Standard	Mobility Deficiency Criteria
Non-CMP Signalized Intersection	D (Outside Downtown) or E (Downtown)	Addition of project traffic causes a signalized intersection to 1) operate at LOS E or F overall or the worst-case movement, or 2) adds five seconds of delay to intersections already operating at LOS E or F under the comparable "no project" scenario.
Non-CMP Unsignalized Intersection	D (Outside Downtown) or E (Downtown)	Addition of project traffic causes an all-way stop-controlled or side street stop-controlled intersection to 1) operate at LOS E or F overall or for the worst-case movement, and 2) meets the Caltrans signal warrant criteria.
CMP Intersection	Varies (see C/CAG 2023 CMP requirements)	The proposed project is considered to have a CMP deficiency when the addition of the project will cause the CMP intersection to operate at a LOS that violates the standard adopted in the current CMP. The proposed project is considered to have a CMP impact when the cumulative analysis indicates that the combination of the proposed project and future cumulative traffic demand will result in the CMP intersection operating at a LOS that violates the standard adopted in the current CMP, and the proposed project increases average control delay at the intersection by four seconds or more.
CMP Freeway	Varies (see C/CAG 2023 CMP requirements)	The proposed project is considered to have a CMP deficiency when the addition of the project traffic causes the CMP roadway segment to operate at a LOS that violates the standard adopted in the current CMP. The proposed project is considered to have a CMP impact when the cumulative analysis indicates that the combination of the proposed project and future cumulative traffic demand will cause the freeway segment to operate at a LOS that violates the standard adopted in the current CMP, and the proposed project increases traffic demand on that freeway segment by an amount equal to one percent or more of the segment capacity, or causes the freeway segment v/c ratio to increase by one percent.
CMP Arterial	Varies (see C/CAG 2023 CMP requirements)	The proposed project is considered to have a CMP deficiency when the addition of the project traffic causes the CMP roadway segment to operate at a LOS that violates the standard adopted in the current CMP. The proposed project is considered to have a CMP impact when the cumulative analysis indicates that the combination of the proposed project and future cumulative traffic demand will cause the arterial segment to operate at a LOS that violates the standard adopted in the current CMP, and the proposed project increases traffic demand on that arterial segment by an amount equal to one percent or more of the segment capacity, or causes the arterial segment v/c ratio to increase by one percent.
Off-Site Traffic Operations	N/A	95th percentile vehicle queues exceed the existing or planned length of a turn pocket. The proposed project introduces a design feature that substantially increases safety hazards.

Source: City of Redwood City. July 21, 2020. RWCmoves Appendix F, Redwood City Transportation Analysis Manual. July 21, 2020. Available: https://www.redwoodcity.org/home/showpublisheddocument/22106/637311118467370000.
Key: CMP = Congestion Management Program, N/A = Not Available, RWCmoves = Redwood City moves

- **2018 Transportation Demand Management Program and Municipal Code Ordinance No. 2503, § 1, 1-10-22:**[117,118] Redwood City also developed a TDMt program,[119] codified as Chapter 48 of the City's Municipal Code.[120] The TDMt Program and the municipal ordinance require preparation of a Site TDMt Plan for a new commercial, office, or institutional development that is 10,000 square or more, or with ten (10) employees or more. In addition, commercial sites outside the downtown area with fifty (50) employees or more are subject to a fifty-two percent (52 percent) mode share target, while commercial sites with forty-nine (49) employees or less are not required to have a mode share target. The City's policy requires use of relevant TDMt measures to achieve mode share targets, such as bike racks, space for transit stop, well-lit pedestrian paths to any adjacent transit stop, shuttle service, shared parking among multiple uses for mixed-use sites, etc.

  The City's TDMt policies would not apply to the proposed ferry terminal project element, as the proposed ferry terminal would provide a regional transit service that would reduce auto dependence for regional travel from/to Redwood City to/from San Francisco and Oakland. Pedestrian, bicycle, and transit access improvements that would be developed concurrently with the ferry terminal project would also serve to reduce auto dependence for "first mile/last mile" access to the ferry terminal.

  For the future visitor-serving uses project element, under the maximum build-out assumption of the proposed project site of an up to 200-room hotel, 10,000 square foot office, and 20,000 square foot restaurant, the threshold for the preparation of a Site TDMt Plan would be exceeded. However, specific developer(s) or site development plans or employment plans do not exist at the time of preparation of this study; the precise mix of uses and square footage is unknown and would be developed during future site planning. When specific developer(s) and site development plans are identified for the project site, the developer(s) would be required, as part of the City's permitting process, to meet any applicable TDMt program and ordinance requirements. Whether a mode share target would apply to the proposed visitor-serving uses would be determined based on the total employment requirement for the proposed use during the permitting process.

San Mateo County Transportation Authority's (SMCTA's) 2025-2029 Strategic Plan

This transportation planning agency plan[121] identifies the Redwood City Ferry Terminal Project (Preliminary Engineering and Environmental Phase) as a key Measure A funded project of the past five years. The Plan has set up $26.5 million and $36.9 million of total unprogrammed funds and sales tax projections towards Ferry and Local Shuttles programs in San Mateo County over the fiscal year (FY) period of 2025-2029. These make up 2 percent and 4 percent of Measure A total funds, respectively. Measure A transit local shuttles program sponsored by SamTrans provides matching funding for operation of local

[117] City of Redwood City. July 2018. RWCmoves, Appendix E – Redwood City Transportation Demand Management Program. Available: https://rwcmoves.com/wp-content/uploads/2018/07/RWCmoves_AppendixE_TDM-Plan_20180710_3.pdf.
[118] City of Redwood City. Municipal Code – Chapter 48: Transportation Demand Management, Codified by Ord. No. 2503, § 1, 1-10-22. Available: https://library.municode.com/ca/redwood_city/codes/city_code?nodeId=CH48TRDEMA.
[119] City of Redwood City. July 2018. RWCmoves, Appendix E – Redwood City Transportation Demand Management Program. Available: https://rwcmoves.com/wp-content/uploads/2018/07/RWCmoves_AppendixE_TDM-Plan_20180710_3.pdf.
[120] City of Redwood City. Municipal Code – Chapter 48: Transportation Demand Management, Codified by Ord. No. 2503, § 1, 1-10-22. Available: https://library.municode.com/ca/redwood_city/codes/city_code?nodeId=CH48TRDEMA.
[121] San Mateo County Transportation Authority (SMCTA). No date. 2025-2029 Strategic Plan. Available: https://www.smcta.com/media/StrategicPlan2025-2029.

shuttle services, with priority given to local services connecting Caltrain, San Francisco Bay Area Rapid Transit District (BART) and future ferry terminals such as the proposed project.

San Mateo County Transit District (SamTrans) Reimagine SamTrans

This transit agency plan[122] notes that while there is no direct SamTrans service to the Port along Seaport Boulevard, there is peripheral service through SamTrans Route 270. Two free shuttle services, Redwood City-Seaport Centre Caltrain and Pacific Shores Shuttle, connect the Port to Caltrain. Aside from these, there is no direct service between the Port and Belmont, Foster City, and San Mateo, which are seen as potential opportunities in the SamTrans plan.

Menlo Park Transportation Master Plan

This transportation plan[123] provides a vision, goals, and performance metrics for achieving four guiding goals of safety, sustainability, mobility choice, and congestion management. Recommended Tier 1 projects identified in the Plan include the Bayfront Expressway Multimodal Corridor Project, which involves bicycle lane, pedestrian, and intersection improvements, and Transit Signal Priority for buses in the vicinity of Marsh Avenue, Haven Avenue, and Bayfront Expressway, and the Marsh Corridor Mobility Project to establish Class 2 bike lanes and an additional bicycle and pedestrian bridge over US 101, north of Marsh Road.

3.2 Environmental Setting

Redwood City and the Port of Redwood City are served by a wide range of transportation facilities and multimodal travel options. The level terrain, moderate weather, and proximity to amenities make activities such as biking, walking, and taking public transit particularly suitable in the City. There are currently no public ferry passenger services available in Redwood City. This section provides an overview of the current state of transportation amenities close to the project site, including the road system, facilities for cyclists and pedestrians, and public transit options. The potential adequacies and deficiencies of the existing transportation system to manage project trips are qualitatively discussed in this section.

3.2.1 Existing and Planned Roadway Network

Regional Access Roadways

US 101 provides north to south regional access to Redwood City and the project site through an 8-lane freeway. It serves as a major commuting route between San Francisco and San Jose. US 101 provides project site access through the Seaport Boulevard/Woodside Road (SR 84) interchange. US 101 also has interchanges at Whipple Avenue and Marsh Road (SR 84) that provide alternate access to the project site via local roads such as Veterans Boulevard, Maple Street, and East Bayshore Road/Blomquist Street. US 101 between SR 92 and Whipple Avenue and US 101 between Whipple Avenue and Santa Clara County Line are part of the existing (2023) C/CAG CMP network.

[122] San Mateo County Transit District (SamTrans). March 2022. Reimagine SamTrans. Available: https://www.samtrans.com/media/19711/.

[123] City of Menlo Park. November 2020. Transportation Master Plan. Available: https://menlopark.gov/files/sharedassets/public/v/2/public-works/documents/transportation/transportation-projects/2020-transportation-master-plan.pdf.

Local Roads

Seaport Boulevard is a four-lane local road stretching 1.7 miles east of US 101 that is the primary access road to the project site and serves primarily industrial land uses (e.g., Port of Redwood City) and commercial land uses (e.g., Pacific Shores Center). The Port of Redwood City Municipal Marina located west of Seaport Boulevard has liveaboards (people who reside on boats). Seaport Boulevard is the main access road to the Pacific Shores Center – a major employer in Redwood City. There is a Class 1 shared-use bicycle and pedestrian path that runs the length of the road starting at the intersection of East Bayshore Road/Blomquist Street. The speed limit on Seaport Boulevard is 35 mph.

Woodside Road (SR 84) is a state route and a four-lane arterial running east to west from US 101 and provides connections to Interstate 280 (I-280) and El Camino Real. Woodside Road turns into Seaport Boulevard as it crosses US 101. Between Veterans Boulevard and Blomquist Street, Woodside Road is a Caltrans Type L-10 interchange as defined in the Highway Design Manual[124] (Chapter 500: Traffic Interchanges) providing full access to US 101. The northbound US 101 on-ramp and off-ramp are unsignalized and provide channelized uncontrolled free-right-turn movements. One leg of the southbound US 101 diagonal off-ramp connecting to southbound Woodside Road terminates at the intersection of Broadway and Woodside Road, while the other leg connecting to northbound Woodside Road terminates at an unsignalized intersection. The on-ramps provide ramp metering. One leg of the southbound US 101 diagonal on-ramp terminates at the intersection between Veterans Boulevard and Woodside Road, while the other leg is channelized and unsignalized. HOV lanes are provided on the Seaport Boulevard diagonal on-ramp to northbound US 101 and on the Woodside Road diagonal on-ramp to southbound US 101. The US 101/SR 84 (Woodside Road) Interchange Improvement Project is one of the City's current capital projects with 95 percent design ready and an estimated completion year of 2028. The project scope includes traffic operation and bicycle and pedestrian access improvements across US 101. As per the redesign project's revised final traffic operations analysis report (2015),[125] this includes: (a) redesign of the existing southbound off-ramp termini from a five-legged intersection to a four-legged intersection, (b) a direct Veterans Boulevard ramp connection to US 101, (c) perpendicular ramp termini to Woodside Road to allow for improved crossings for both pedestrians and bicyclists, and (d) Class 1 shared-use path on the north side and south side of the US 101 / Woodside Road interchange to provide safer pedestrian/bicycle access across the interchange. The speed limit on Woodside Road is 35 mph. Woodside Road (SR 84) between Alameda de las Pulgas (west of El Camino Real) to US 101 is part of the existing (2023) C/CAG CMP network.

Whipple Avenue is a two-to four-lane arterial that stretches from US 101 westward through Redwood City. Between Veterans Boulevard and El Camino Real, Whipple Avenue is a four-lane road with a Caltrans Type L-9 interchange as defined in the *Highway Design Manual* (Chapter 500: Traffic Interchanges) providing full access to US 101. All on-ramp movements are unsignalized and provide channelized uncontrolled free-right-turn movements. The northbound US 101 diagonal off-ramp is signalized at the intersection with Whipple Avenue. The southbound US 101 diagonal off-ramp terminates at an

[124] California Department of Transportation (Caltrans). 2025. Highway Design Manual. Available: https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm.

[125] City of Redwood City. December 9, 2015. US 101/SR 84 (Woodside Road) Interchange Improvement Project, Revised Final Traffic Operations Analysis Report. Available: https://www.redwoodcity.org/home/showpublisheddocument/25747/638041021964800000.

intersection between Veterans Boulevard and Whipple Avenue. The on-ramps provide ramp metering. An HOV lane is provided on the southbound diagonal on-ramp. There is a Class 3 bicycle route that runs the length of Whipple Avenue along with shared bicycle-vehicle lanes (sharrows) for portions of the road. The speed limit on Whipple Avenue is 25 mph.

Marsh Road is an east-west, two-to four-lane arterial that crosses US 101 SB of the Redwood City border. This road also provides a regional connection to San Francisco East Bay via Bayfront Expressway and Dumbarton Bridge. The speed limit on this stretch of Marsh Road is 35 mph. Between Fair Oaks Avenue and Haven Avenue, Marsh Road is a four-lane road with a Caltrans Type L-9 interchange as defined in the *Highway Design Manual* (Chapter 500: Traffic Interchanges) providing full access to US 101. The northbound and southbound US 101 diagonal off-ramps are signalized at the intersection with Marsh Road. The on-ramps are unsignalized and provide channelized uncontrolled free-right-turn movements. The on-ramps provide ramp metering. An HOV lane is provided on the diagonal on-ramps. The on-ramps provide ramp metering. An HOV lane is provided on the diagonal on-ramps. There are no bicycle lanes present on Marsh Road. Marsh Road (SR 84) between US 101 and Willow Road and Marsh Road (SR 84) between Willow Rd and University Avenue are part of the existing (2023) C/CAG CMP network.

Veterans Boulevard is a four- and six-lane divided arterial running north to south, connecting US 101 and Redwood City. It begins at the southbound US 101 off-ramp north of Whipple Avenue and continues south to Woodside Road, where it aligns with the US 101 SB on-ramp. Between Whipple Avenue and Main Street, Veterans Boulevard has three lanes in each direction with a speed limit of 35 mph. Between Main Street and Chestnut Street, it features two lanes in each direction, and between Chestnut Street and Woodside Road, one lane in each direction. Class 2 bicycle lanes are present between Whipple Avenue and Chestnut Street.

Maple Street is an east-west, two-lane local road running from El Camino Real to Seaport Boulevard. It is the only roadway between Whipple Avenue and Woodside Road that crosses US 101 without an interchange. Maple Street has Class 3 bicycle route sharrows, allowing bicycle access onto Blomquist Street, which feeds into Seaport Boulevard. Redwood City's Walk Bike Thrive Plan[126] identifies a citywide bicycle network and cycle track on Maple Street from Main Street to the Caltrain tracks as a prioritized project. Maple Street from Broadway to Veterans Boulevard is identified as one of the City's top 10 pedestrian focus areas.

East Bayshore Road, a two-lane local road, heads south from Whipple Avenue along the east side of US 101, ending currently at a roundabout intersection with Bair Island Road. The speed limit on this stretch of East Bayshore Road is 25 mph. South of Woodside Road, East Bayshore Road continues as a collector and frontage road along the east side of US 101. There are Class 2 bicycle lanes and Class 3 sharrow lanes from Sleepy Hollow Lane along East Bayshore Road leading into Seaport Boulevard.

Blomquist Street is a two-lane local road running south from Maple Street to its intersection with Woodside Road. Beyond Woodside Road, it becomes the southern segment of East Bayshore Road. Blomquist Street intersects with Seaport Boulevard. Class 2 bicycle lanes are present along Blomquist Street, and the speed limit is 25 mph.

[126] City of Redwood City. June 2022. RWC Walk Bike Thrive. Prepared by Fehr and Peers and Eisen Letunic. Available: https://www.redwoodcity.org/home/showpublisheddocument/25615/638016840641870000.

Local Intersections

The project trips would flow through nodes or intersections in the roadway network in the vicinity of the project site. This analysis considered fifteen (15) key nodes (see **Figure 2.1**) where a majority of the project related turn movements are expected to occur. Four (4) among these 15 intersections are part of the 2023 C/CAG CMP network, including: SR 82/Whipple Ave and Middlefield Rd/SR 84 in Redwood City, and Willow Rd/SR 84 and Marsh Rd/SR 84 in Menlo Park.

Three (3) among these 15 intersections (labeled 1a, 1b, and 8) are unsignalized (stop-controlled) intersections, while the remaining are signalized intersections. Six (6) intersections (1a, 1b, 3, 10, 13, and 14) are three-legged intersections, seven (7) intersections (labeled 2, 4, 5, 7, 9, 11, and 12) are four-legged intersections, and one intersection (labeled 6) is a five-legged intersection. The more legs at an intersection, the lesser the capacity available to serve individual turn movements. Based on the US 101/SR 84 (Woodside Road) Interchange Improvement Project described earlier, intersections 5 and 6 are expected to be re-configured to improve traffic operations.

Intersection 8 (1 number) was converted from a three-legged to a four-legged intersection to serve new development projects such as the County Navigation Center/1469 Maple Street, 1548 Maple Street residential project, and 1580 Maple Street residential projects. This is part of a planned Blomquist Street Extension transportation project, which will result in a four-legged intersection operated as a roundabout. The transportation analysis conservatively assumed an all-way stop control (AWSC) at this intersection under existing (2023) and cumulative (2040) conditions.

3.2.2 Existing and Planned Alternative Modal Network

Bicycle Facilities

Existing Facilities

The existing bicycle facilities in Redwood City fall under four classes of bicycle facility types established by Caltrans in the *Highway Design Manual* (Chapter 1000: Bicycle Transportation Design).

- **Class 1 facilities (shared-use bicycle and pedestrian paths)** are pathways separated from roadways designated for use by bicycles and pedestrian.
- **Class 2 facilities (bicycle lanes)** are dedicated lanes for use by bicycles. These lanes have special lane markings, pavement legends, and signage.
- **Class 3 facilities (bicycle routes)** are roads that share the right-of-way with bicycles and have only signs or sharrows (bicycle symbols on the road). These roads operate at lower speeds to accommodate safe passage for cyclists.
- **Class 4 facilities (separated bikeways)** are bicycle lanes exclusively used for bicycles and require a physical separation between the bicycle lane and vehicular traffic. This is done through flexible posts, barriers, on-street parking, grade separation, etc.

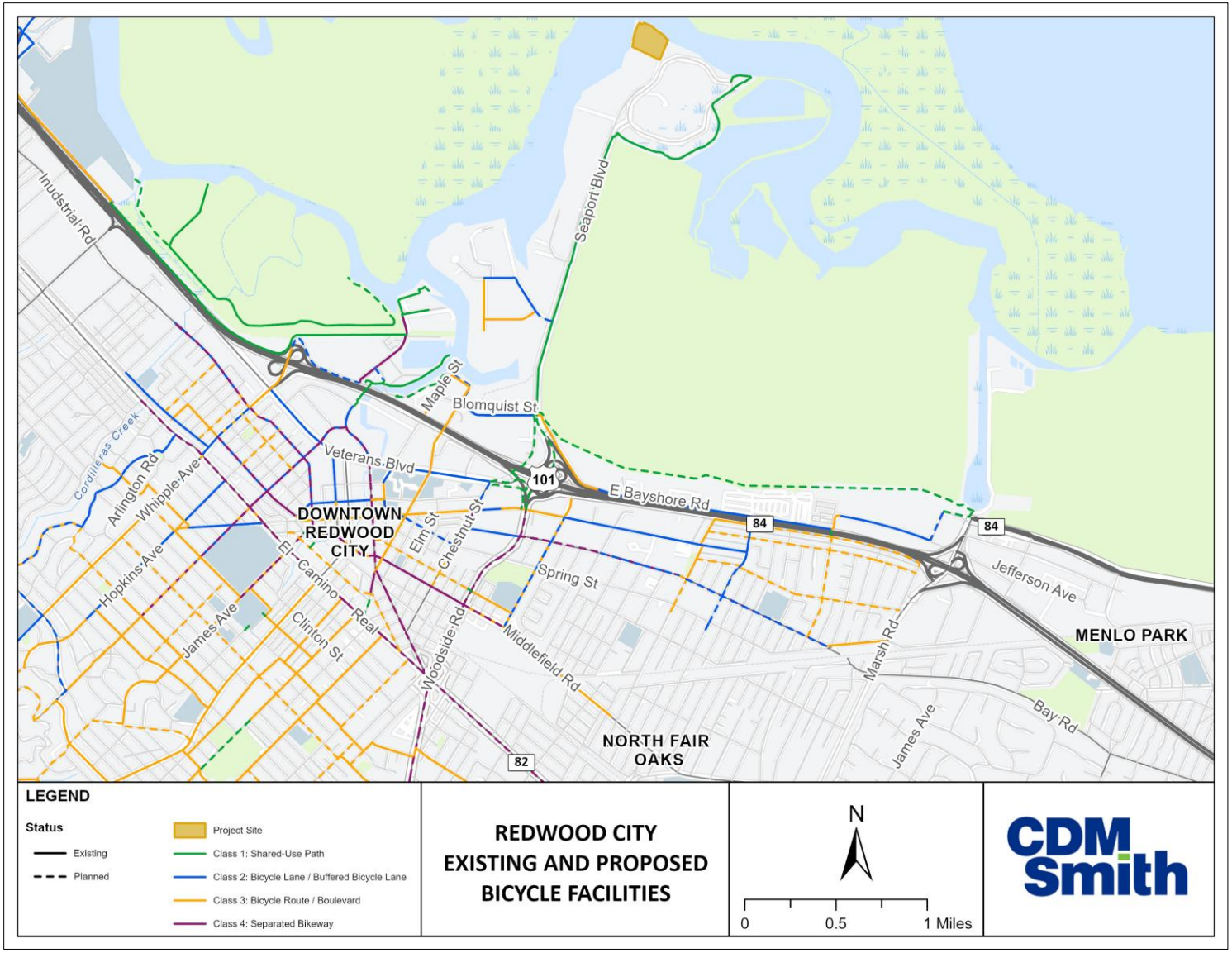
Among the existing bicycle lane facilities in the project area (see **Figure 3.3**), a Class 1 path that runs along Seaport Boulevard serves as the primarily bicycle access route to the project site. The Seaport Boulevard path directly connects to a Class 2 route along Blomquist Street. The Class 1 path along Seaport Boulevard also connects to East Bayshore Road, portions of which are classified as Class 3 route and Class 2 lane. A unique situation exists on Whipple Avenue where the bicycle route runs along the median of the roadway to avoid conflicts with vehicular traffic turning to the northbound (loop) and southbound (diagonal) US 101 on-ramps. This bicycle route shifts to the right shoulder at intersection #10.

Planned Facilities

Redwood City's Walk Bike Thrive Plan aims to make walking and bicycling in the City safer and easier and proposes a denser more interconnected bikeway. The Plan identifies multiple planned bicycle improvements in the City as seen in **Figure 3.3**. The additional bicycle routes will bridge gaps in the current network, adding more connections to Seaport Boulevard and the project site. Planned improvements in the project area include a path from Seaport Boulevard to Veteran's Boulevard and improvements to the path along Seaport Boulevard to meet current best practices for trail design. The US 101/SR 84 (Woodside Road) Interchange Improvement Project described earlier includes plans for: bicycle and pedestrian connections along Woodside Road under US 101 and along Veterans Boulevard between Chestnut Street and Woodside Road that would connect to the path on Seaport Boulevard; Class 2 bicycle lanes west of US 101, along Woodside Road and Broadway, to connect with communities and businesses south and east of the Broadway and Woodside Road intersection; additional Class 1 shared-use bicycle path connections east and parallel to US 101 that will improve bicycle connectivity of Seaport Boulevard to job centers in northern Redwood City (e.g., Oracle campus) and eastern Menlo Park (e.g., Meta campus) and enhance safety and level of rider comfort; and a high-quality bicycle and pedestrian connection and gap closure over US 101 that connects east and west sides of the interchange.

Pedestrian Facilities

The existing pedestrian facilities along with the moderate weather and level terrain in Redwood City make walking relatively easy. Most of the project area roadways have a sidewalk or pathway and there are numerous crosswalks and signalized intersections throughout the City. However, the roads leading to the project site lack continuous sidewalks along Woodside Road, Blomquist Street, East Bayshore Road, and Seaport Boulevard. Additionally, connecting streets from Whipple Avenue, Maple Street, and Marsh Road have gaps in their sidewalk network. **Table 3.3** describes the sidewalk network in the vicinity of the project site by project area arterial segment.



Source: Redwood City bicycle routes GIS data shared on December 21, 2023.

Figure 3.3 Existing and Planned Bicycle Facilities

Table 3.3 Pedestrian Facilities along Project Area Arterial Segments

Project Area Seg. Name	From Intersection	To Intersection	Pedestrian Facility Description
Seaport Blvd Loop	North of 1b: Seaport Blvd and Hinman Road		Shared-use path on the southern side of Seaport Blvd; Crosswalk on the south leg of intersection 1a
Seaport Blvd (North)	1b: Seaport Blvd and Hinman Road	2: Seaport Blvd and Seaport Ct	Shared-use path on the southern side of Seaport Blvd
Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	Shared-use path on the southern side of Seaport Blvd for the whole segment and partially on the northern side along the marina; Crosswalk on the west leg of intersection 2
Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	Shared-use path on the southern side of Seaport Blvd; Crosswalk on the east leg of intersection 3
Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	No sidewalk is present; Crosswalk on the east leg of intersection 4
SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	No sidewalk is present
SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	No sidewalk except at the intersections of Broadway and Woodside Rd and Bay Road and Woodside Rd; Pedestrian bridge across Woodside Road near Staumbaugh St; Crosswalks on the north, south, and west legs of intersection 6 and all legs of Bay Road and Woodside Rd intersection and intersection 7
Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	Sidewalk along the western side of Blomquist St and on both sides near intersection 8; Crosswalk on the east and south legs of intersection 8
Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	Sidewalk on both sides between Maple St and Oddstad Dr intersection and intersection 9; Sidewalk on the south side of Maple Street across the bridge on US 101; No sidewalks on the rest of the segment; Crosswalks on all legs of intersection 9
Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	Sidewalk on both sides between intersection 9 and Chestnut St and Veterans Blvd intersection; No sidewalks on the rest of the segment
Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Sidewalk along the southern side of Whipple Ave for the whole segment including the bridge across US 101; Crosswalks on the south leg at intersection 10 and north, south, and west legs at intersection 11
Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Sidewalks on both sides
E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Sidewalks on the eastern side of E Bayshore Rd between intersection 4 and Douglas Ct and on the eastern side of Haven Ave between Rancho Ave and intersection 12

Project Area Seg. Name	From Intersection	To Intersection	Pedestrian Facility Description
SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Sidewalk on both sides; Crosswalks on all legs of intersection 12
SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Sidewalk on both sides including the bridge across US 101; Crosswalks on east and south legs of intersection 13 and on north and west legs of intersection 14

Source: Google Maps and Bing Maps aerial imagery.
Key: Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Transit Facilities

Public Transportation

Public transportation services in Redwood City are provided by Caltrain and SamTrans and commute.org shuttles. **Figure 3.4** shows the existing public transit facilities and bus routes in the vicinity of the project site.

Commuter Rail

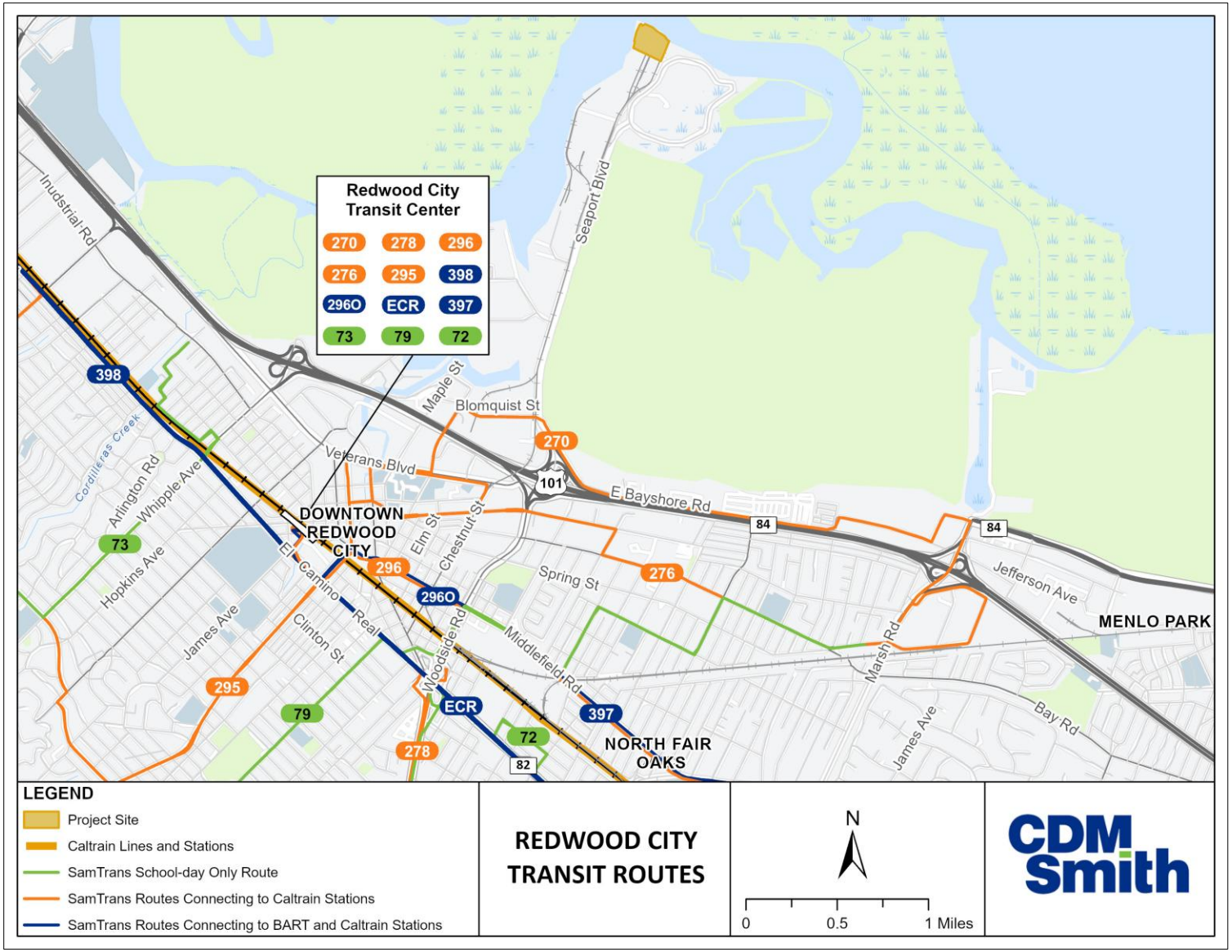
The Caltrain commuter rail service operates along the San Francisco Peninsula, connecting Redwood City to San Francisco, San Jose, and Gilroy. It serves as a vital link for daily commuters and travelers. Within Redwood City, the railway runs parallel and to the north of El Camino Real. The Redwood City Transit Center, situated downtown between Jefferson Avenue and Broadway, accommodates both a Caltrain station and a major SamTrans bus transfer facility. During peak commute hours, Caltrain provides express service known as the "Baby Bullet" between downtown San Jose and San Francisco, enabling a one-hour trip between the two cities. This express service stops at a limited number of stations, including Redwood City. Additionally, Caltrain offers local service, which stops at all stations, and limited-stop service, which serves more stations than the Baby Bullet but not all. All Caltrain trains make a stop at the Redwood City Caltrain Station. Caltrain customers can transfer at Millbrae Station to BART, which is another regionally vital heavy-rail commuter service that connects the San Francisco Peninsula with communities in the East Bay and South Bay.

Bus Services

The San Mateo County Transit District oversees SamTrans buses, providing local and regional transportation options. The transportation analysis classified the routes serving the project area as follows:

- SamTrans routes that connect to the BART and Caltrain Station include 296O, 397, 398, and ECR
- SamTrans routes that connect only to Caltrain Stations include 270, 276, 278, 295, and 296
- SamTrans routes that run only on school-days include 72, 73, and 79

No SamTrans bus route directly serves the project site. Route 270 is the closest stop on East Bayshore Road, and it is just under two (2) miles south of the project site. The project area routes are in **Table 3.4**.



Source: SamTrans and Caltrain websites.

Figure 3.4 Existing Transit Services

Table 3.4 Existing Transit Services in Project Area

Project Area Route	From	To	Weekday		Weekend	
			Operating Hours	Peak Headway	Operating Hours	Peak Headway
SamTrans School-day Only Routes						
72	Northumberland/ Marlborough	Selby Lane School	7:40am - 8:00am, 2:40pm - 3:00pm	one in the morning, one in the afternoon	n/a	n/a
73	G Street/ Industrial	Clifford Elementary School	7:40am - 8:00am, 3:00pm - 3:20pm	one in the morning, one in the afternoon	n/a	n/a
79	Florence/17th	Kennedy Middle School	7:40am - 8:10am, 3:25pm - 3:55pm	one in the morning, one in the afternoon	n/a	n/a
SamTrans routes connecting to Caltrain Stations						
270	Redwood City Transit Center (Loops)	Redwood City Transit Center (Loops)	6:30am - 7:10pm	60	7:30am - 7:15pm	60
276	Redwood City Transit Center	Bohannon/Campbell	7:00am - 9:45pm	60	n/a	n/a
278	Redwood City Transit Center	Cañada College	6:20am - 8:45pm	60	7:20am - 7:20pm	60
295	San Mateo Caltrain	Redwood City Transit Center	6:20am - 7:00pm	60	n/a	n/a
296	Redwood City Transit Center	Bayshore/Donohoe	5:15am - 10:40pm	20	7:45am - 8:00pm	30
SamTrans Express Bus Routes						
397	San Francisco	Palo Alto Transit Center	12:45am - 6:40am	60	12:45am - 6:40am	60
398	San Francisco	Redwood City Transit Center	6:00am - 11:30am, 3:40pm - 9:20pm	Two in the morning, two in the evening	n/a	n/a
ECR	Palo Alto Transit Center	Daly City BART	4:00am - 1:50am	15	4:45am - 2:25am	15
Caltrain Commuter Rail Routes						
All Routes	Gilroy/San José	San Francisco	4:20am - 1:45am	10	7:10am - 1:50am	60

Source: SamTrans and Caltrain websites.
Key: BART = Bay Area Rapid Transit, am = morning, pm = evening

Public-Private Partnership Shuttle Services

There are a range of community shuttles that are open to the public at no cost that operate from the Redwood City Transit Center. These shuttles serve major employers, such as Electronic Arts and Oracle in Redwood Shores, and are operated by Commute.org and local employers. Commute.org is a joint powers agency (JPA) comprised of 19 cities and towns as well as the County of San Mateo. The SMCTA, C/CAG, Bay Area Air Quality Management District, and public/private sector contributors to the shuttle program fund Commute.org programs. Employers, such as Electronic Arts, Meta, and Google, also operate private bus services for their employees residing or working in Redwood City. **Figure 3.5** shows the existing shuttle routes in the project area.

The three shuttles operating in the project area include the Midpoint (Redwood City Caltrain) shuttle which operates along Broadway to the Redwood City Stanford campus, Seaport Center (Redwood City Caltrain) shuttle which provides service to Seaport Center Office Park, and the Pacific Shores shuttle which services the Google campus at the Pacific Shores Center. Additionally, Stanford University's Marguerite Shuttle RWC Line complements Commute.org's Midpoint shuttle, offering service during peak AM and PM commute times.

The Pacific Shores shuttle and the Seaport Center shuttle are the closest services to the project site. The Pacific Shores shuttle operates two routes, one that makes 4 stops around the Pacific Shores Center and one express route which has only one stop at the Pacific Shores Center. The Seaport Center shuttle makes 5 stops within the Seaport Center and one stop near Maple Street. Both routes operate during peak hours between the business parks and the Caltrain station.



Source: Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan. Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf.

Figure 3.5 Existing Shuttle Services

3.2.3 Background VMT

Background weekday daily and per capita VMT estimates for Redwood City, San Mateo County, and the San Francisco Bay Area region are shown in **Table 3.5**.

Table 3.5 Background Weekday Daily VMT and Per Capita VMT Estimates in 2023 and 2040

Geography	Weekday Daily VMT (millions)		Weekday Per Capita VMT	
	2023	2040	2023	2040
Redwood City TAZs	5.23	7.01	31.8	31.3
San Mateo County TAZs	37.50	44.15	30.4	30.6
San Francisco Bay Area Region TAZs	398.64*	484.13*	28.8**	28.8**

Sources: Redwood City updated C/CAG's travel demand model with base year of 2023 and forecast year of 2040; C/CAG. September 2021. SB 743 Implementation Decisions, Table 5: Total Project Generated VMT – San Mateo County and Bay Area Region. Available: https://ccag.ca.gov/wp-content/uploads/2021/11/1_20210929_CCAG_SB_743_Implementation_Decisions_Cln.pdf.

Notes: As identified in **Section 2.1.2**, the model estimates are the basis for the per capita VMT thresholds of significance estimation, so they are presented here instead of U.S. Census estimates.

*Value for this daily VMT is estimated by multiplying service population with per capita VMT.

**C/CAG's SB 743 Implementation Decisions, Table 5 – 2015 and 2040 Per Capita VMT Data for Bay Area Region used for 2023 and 2040.

Key: TAZs = Transportation Analysis Zones, VMT = vehicle miles traveled

3.2.4 Background LOS

Table 3.6 through **Table 3.8** summarize the LOS results for the project area intersections, freeway segments, and arterial segments in the project area under existing (2023) and cumulative (2040) no project conditions and in the worst peak hour (AM or PM). The key findings are as follows:

- Existing (2023) conditions:
  - Intersections:
    - SR 84 (Woodside Road) / US 101 SB Off-Ramp and Broadway (intersection #6) is operating at LOS F
    - SR 84 (Woodside Road) and Middlefield Road (intersection #7) is operating at LOS E in the AM peak hour
    - The remaining intersections are operating at LOS D or better
  - Freeway segments:
    - Most of the US 101 freeway segments are operating at LOS E or worse
  - Arterial segments:
    - The following arterial segments are experiencing LOS F at least part of the day: (a) Seaport Boulevard / SR 84 (Woodside Road) between Blomquist Street / East Bayshore Road and Middlefield Road, (b) Whipple Avenue from East Bayshore Road and US 101 NB Off-Ramp to US 101 SB Off-Ramp / Veterans Boulevard, and (c) SR 84 (Marsh Road) from Bayfront Expressway / Haven Avenue to US 101 SB Off-Ramp. The remaining project area arterial segments are operating at LOS B or better.

- Cumulative (2040) no project conditions:
  - Intersections:
    - SR 84 (Marsh Road) / Marsh Road and SR 84 (Bayfront Expressway) / Haven Avenue (intersection #12) would change to LOS E, compared to its performance at LOS D or better under existing (2023) conditions
    - SR 84 (Woodside Road) and Middlefield Road (intersection #7), Whipple Avenue and US 101 SB Off-Ramp / Veterans Boulevard (intersection #11), SR 84 (Marsh Road) and US 101 NB Off-Ramp (intersection #13), and SR 84 (Marsh Road) and US 101 SB Off-Ramp (intersection #14) would change to LOS F, compared to performance at LOS E or better under existing (2023) conditions
    - The new intersections of SR 84 (Woodside Road) and US 101 NB Off-Ramp / US 101 NB On-Ramp (intersection #4N) and SR 84 (Woodside Road) and Broadway (intersection #6N) would perform at LOS F, and SR 84 (Woodside Road) and US 101 SB Off-Ramp / US 101 SB On-Ramp (intersection #5N) would perform at LOS E
    - The remaining intersections would operate at LOS D or better
  - Freeway segments:
    - With the exception of US 101 SB from off-ramp to Veterans Blvd / Whipple Ave to on-ramp from EB Whipple Avenue, all other segments would operate at LOS F
  - Arterial segments:
    - The arterial segments experiencing LOS F at least part of the day under existing (2023) conditions would also experience LOS F under cumulative (2040) no project conditions but both in AM and PM peak hours, despite the addition of a 3rd lane each way on SR 84 (Woodside Road) between Blomquist Street / East Bayshore Road and Broadway due to the US 101 / SR 84 (Woodside Road) Interchange Improvement Project
    - Seaport Boulevard between Chesapeake Drive and Blomquist Street / East Bayshore Road would operate at LOS F in the eastbound direction under AM peak hour conditions
    - All other arterial segments would operate at LOS D or better

Attachment 9 provides detailed results, for existing (2023) and cumulative (2040) no project conditions, in terms of Synchro estimates of delays and LOS by approach and intersection. **Attachment 10** provides volume, delay, and LOS summary tables for intersections, and volume, v/c ratio, and LOS summary tables for freeway and arterial segments.

Table 3.6 Intersection Background Scenarios LOS Results

Int. #	Intersection Name	Control Type	Method	Worst Peak (AM or PM) LOS	
				Existing (2023)	Cumulative (2040) No Project
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC	HCM 6th	B	D
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	B	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	B	C
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	C	C
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Signalized	HCM 6th	B	Not Applicable
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Signalized	HCM 2000	F	Not Applicable
4N	SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Signalized	HCM 6th	Not Applicable	F
5N	SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Signalized	HCM 2000	Not Applicable	E
6N	SR 84 (Woodside Rd) and Broadway	Signalized	HCM 2000	Not Applicable	F
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	E	F
8	Maple St and Blomquist St	AWSC	HCM 6th	B	C
9	Maple St and Veterans Blvd	Signalized	HCM 2000	C	D
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	A	B
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	D	F
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	D	E
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	C	F
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	C	F

Source: CDM Smith, 2024.

*LOS reported for the worst stop-controlled minor approach at TWSC intersection

Key: AWSC = All-way stop control, TWSC= Two-way stop control, HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table 3.7 Freeway Segments Background Scenarios LOS Results

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Worst Peak (AM or PM) LOS	
				Existing (2023)	Cumulative (2040) No Project
O1	US 101 NB		Off to Marsh Rd	E	F
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	E	F
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	E	F
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	E	F
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	E	F
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	F	F
D1	US 101 NB	On from WB Whipple Ave		F	F
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	E	F
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	D	E
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	D	E
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	E	F
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	E	F
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	E	F
D2	US 101 SB	On from EB Marsh Rd		E	F

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table 3.8 Arterial Segments Background Scenarios LOS Results

Arterial Seg. #	Arterial Seg. Name	From Intersection	To Intersection	Worst Peak (AM or PM) LOS	
				Existing (2023)	Cumulative (2040) No Project
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	A (EB) / A (WB)	A (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	A (EB) / A (WB)	A (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	B (EB) / A (WB)	F (EB) / A (WB)
5	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	F (EB) / F (WB)	Not Applicable
6	SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	F (EB) / E (WB)	Not Applicable
7	SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	F (EB) / F (WB)	Not Applicable
4N	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Not Applicable	F (EB) / F (WB)
5N	SR 84 (Woodside Rd) (Middle Top)	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Not Applicable	F (EB) / F (WB)
6N	SR 84 (Woodside Rd) (Middle Bottom)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	6N: SR 84 (Woodside Rd) and Broadway	Not Applicable	F (EB) / F (WB)
7N	SR 84 (Woodside Rd) (South)	6N: SR 84 (Woodside Rd) and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	Not Applicable	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	A (NB) / A (SB)	A (NB) / B (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	A (EB) / A (WB)	A (EB) / C (WB)

Arterial Seg. #	Arterial Seg. Name	From Intersection	To Intersection	Worst Peak (AM or PM) LOS	
				Existing (2023)	Cumulative (2040) No Project
10	Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	A (NB) / A (SB)	Not Applicable
10N	Veterans Blvd (East)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	Not Applicable	B (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	F (EB) / E (WB)	F (EB) / F (WB)
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	A (NB) / B (SB)	D (NB) / B (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	A (NB) / A (SB)	A (NB) / A (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	F (EB) / E (WB)	F (EB) / F (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

3.2.5 Traffic Safety

This transportation analysis summarized 6-year period crashes from January 1, 2017 to December 31, 2022 using data provided by the Redwood City Engineering and Transportation Department on the non-freeway roadway network within 500 feet of project study area intersections, as shown in **Table 3.9**.

On Seaport Boulevard, where the highest concentration of proposed project trips would be present, the existing crash frequency and severity is low.

The key crash locations for all crash types combined (vehicle-to-vehicle, bicycle-involved, and pedestrian-involved) in the project vicinity are as follows:

- The intersections of SR 84 (Woodside Road) / US 101 SB Off-Ramp and Broadway, SR 84 (Woodside Road) / Middlefield Road, and Whipple Avenue and US 101 SB Off-Ramp / Veterans Boulevard, and the arterial segment of Veterans Boulevard (West) from Maple Street to Whipple Avenue have over 10 collisions per year.
- The intersection of SR 84 (Woodside Road) / Middlefield Road and the segment of Veterans Boulevard (West) from Maple Street to Whipple Avenue have the greatest number of bicycle- and pedestrian-involved collisions.

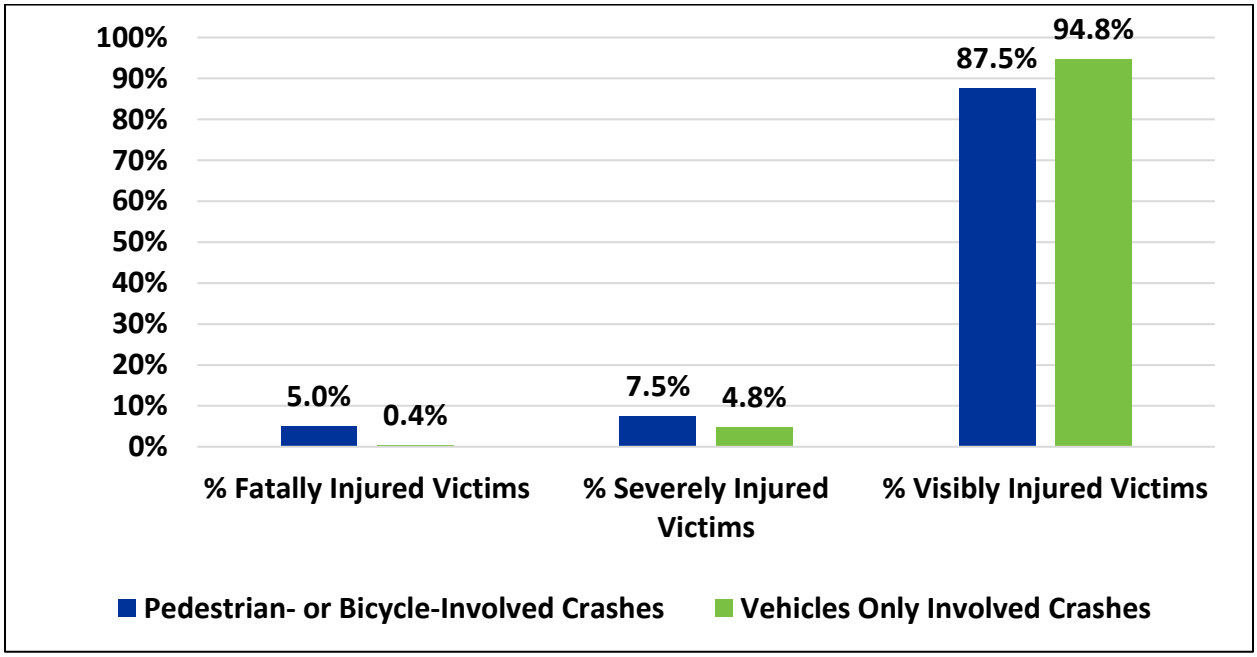
Table 3.9 Project Vicinity Non-Freeway Collisions and Victims Summary

Loc. ID	Loc. Descrip.	Loc. Type	6 Year (2017 2022) Annual Average					% Pedestrian Involved		% Bicycle Involved		% Vehicles Only Involved		% Total	
			Tot. Coll.	Fat. Vic.	Sev. Inj. Vic.	Vis. Inj. Vic.	Tot. Vic.	Coll.	Vic.	Coll.	Vic.	Coll.	Vic.	Coll.	Vic.
2	Seaport Blvd and Seaport Ct	Int.	0.3	0.0	0.0	0.0	0.0	0.0%	N/A	0.0%	N/A	100.0%	N/A	100.0%	N/A
3	Seaport Blvd and Chesapeake Dr	Int.	0.7	0.0	0.0	0.3	0.3	25.0%	N/A	0.0%	N/A	75.0%	N/A	100.0%	N/A
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Int.	1.8	0.0	0.0	0.3	0.3	0.0%	N/A	0.0%	N/A	100.0%	N/A	100.0%	N/A
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Int.	6.0	0.0	0.2	4.8	5.0	5.6%	N/A	5.6%	N/A	88.9%	N/A	100.0%	N/A
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Int.	11.7	0.2	0.3	8.2	8.7	2.9%	100.0%	2.9%	0.0%	94.3%	0.0%	100.0%	100.0%
7	SR 84 (Woodside Rd) / Middlefield Rd	Int.	12.0	0.2	0.8	8.0	9.0	5.6%	100.0%	4.2%	0.0%	90.3%	0.0%	100.0%	100.0%
8	Maple St and Blomquist St	Int.	0.3	0.0	0.0	0.3	0.3	0.0%	N/A	50.0%	N/A	50.0%	N/A	100.0%	N/A
9	Maple St and Veterans Blvd	Int.	2.8	0.0	0.0	2.7	2.7	17.6%	N/A	11.8%	N/A	70.6%	N/A	100.0%	N/A
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Int.	0.2	0.0	0.0	0.2	0.2	0.0%	N/A	0.0%	N/A	100.0%	N/A	100.0%	N/A
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Int.	12.2	0.0	0.2	5.8	6.0	2.7%	N/A	1.4%	N/A	95.9%	N/A	100.0%	N/A

Loc. ID	Loc. Descrip.	Loc. Type	6 Year (2017 2022) Annual Average					% Pedestrian Involved		% Bicycle Involved		% Vehicles Only Involved		% Total	
			Tot. Coll.	Fat. Vic.	Sev. Inj. Vic.	Vis. Inj. Vic.	Tot. Vic.	Coll.	Vic.	Coll.	Vic.	Coll.	Vic.	Coll.	Vic.
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Int.	0.2	0.0	0.0	0.2	0.2	100.0%	N/A	0.0%	N/A	0.0%	N/A	100.0%	N/A
		Int. Sub-Total	**48.2**	**0.3**	**1.5**	**30.8**	**32.7**	**5.2%**	**100.0%**	**3.8%**	**0.0%**	**91.0%**	**0.0%**	**100.0%**	**100.0%**
1	Seaport Blvd Loop	Mid-Seg.	1.2	0.0	0.2	0.2	0.3	14.3%	N/A	14.3%	N/A	71.4%	N/A	100.0%	N/A
2	Seaport Blvd (North)	Mid-Seg.	0.7	0.0	0.0	0.3	0.3	0.0%	N/A	0.0%	N/A	100.0%	N/A	100.0%	N/A
4	Seaport Blvd (Middle 2)	Mid-Seg.	0.5	0.0	0.0	0.2	0.2	0.0%	N/A	0.0%	N/A	100.0%	N/A	100.0%	N/A
7	SR 84 (Woodside Rd) (South)	Mid-Seg.	5.0	0.0	0.0	3.2	3.2	3.3%	N/A	10.0%	N/A	86.7%	N/A	100.0%	N/A
8	Blomquist St	Mid-Seg.	0.8	0.0	0.2	0.2	0.3	20.0%	N/A	0.0%	N/A	80.0%	N/A	100.0%	N/A
9	Maple St	Mid-Seg.	2.0	0.0	0.0	0.3	0.3	0.0%	N/A	8.3%	N/A	91.7%	N/A	100.0%	N/A
10	Veterans Blvd (East)	Mid-Seg.	5.2	0.0	0.2	1.7	1.8	0.0%	N/A	0.0%	N/A	100.0%	N/A	100.0%	N/A
12	Veterans Blvd (West)	Mid-Seg.	13.8	0.2	0.3	6.0	6.5	6.0%	0.0%	6.0%	0.0%	88.0%	100.0%	100.0%	100.0%
13	E Bayshore Rd / Haven Ave	Mid-Seg.	4.3	0.0	0.2	2.7	2.8	3.8%	N/A	7.7%	N/A	88.5%	N/A	100.0%	N/A
		Mid-Seg. Sub- Total	**33.5**	**0.2**	**1.0**	**14.7**	**15.8**	**4.5%**	**0.0%**	**6.0%**	**0.0%**	**89.6%**	**100.0%**	**100.0%**	**100.0%**
		Total	**81.7**	**0.5**	**2.5**	**45.5**	**48.5**	**4.9%**	**66.7%**	**4.7%**	**0.0%**	**90.4%**	**33.3%**	**100.0%**	**100.0%**

Source: Redwood City Collisions Data for the period from Jan 1, 2017 to Dec 31, 2022.
Note: Location IDs 1a, 1b, 12, and 13 of Intersection Type, and Location IDs 3, 5, 6, 11, 14, and 15 of Mid-Segment Type did not have collisions reported in the period from Jan 1, 2017 to Dec 31, 2022.
Key: Loc. = Location, Coll. = Collisions, Vic. = Victims, Fat. = Fatality, Sev. = Severe, Vis. = Visible, Inj. = Injury, Int. = Intersection, Tot. = Total, Mid-Seg. = Mid-Segment, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Rd = Road, SR = State Route, St = Street, E = East, NB = Northbound, SB = Southbound

Over the non-freeway roads analyzed, victims in pedestrian- and bicycle-involved crashes have a severity distribution as shown in **Figure 3.6**. The share of fatal and severe injury victims in pedestrian- and bicycle-involved crashes was 12.5 percent, which is higher than 5.2 percent, the share of fatal and severe injury victims in vehicles only involved crashes, as also shown in the figure.



Source: Redwood City Collisions Data for the period from Jan 1, 2017 to Dec 31, 2022.

Figure 3.6 Severity Distribution in Non-Freeway Crashes

The primary collision factors for different crash types are as follows:

- **Pedestrian-involved crashes:** About 52 percent of these crashes are due to failure of vehicles to yield to pedestrians at crosswalks, unsafe starting or backing of vehicles, basic speed law violations, and unsafe left or right turn movements. Approximately 7 percent of the crashes are related to unsafe crossings by pedestrians and approximately 16 percent do not have an identified primary collusion factor.
- **Bicycle-involved crashes:** About 52 percent of these crashes are due to failure to drive on the right side of road, unsafe left or right turn movements, basic speed law violation, and failure to yield when entering or crossing on to a highway from any public or private property or alley. About 9 percent of the collisions involved bicycles and an unidentified object and 91 percent involved a bicycle and a vehicle.
- **Vehicles only involved crashes:** About 62 percent of these crashes are due to basic speed law violations, unsafe left or right turn movements and failure to stop at a red light.

Section 4
Project Impacts

This section presents results of the transportation impacts analysis of the proposed project. The results are organized by non-CEQA transportation analysis and CEQA transportation analysis, and further broken down into qualitative assessments and quantitative assessments.

4.1 Non-CEQA Transportation Analysis

4.1.1 Qualitative Assessment

Site Access and Circulation

Under the proposed project, the western leg of the loop road would be widened to accommodate a new sidewalk and Class 1 bicycle trail (or Class I shared bicycle and pedestrian multi-use path, as per Caltrans definition), discussed later in more detail. The project site access road would have one lane in either direction for vehicles entering and exiting the site. A left turn pocket, with a length determined by the queuing analysis in **Attachment 9** would be provided for northbound vehicles turning left from the Seaport Boulevard loop into the project site. Vehicles exiting the project site could turn left or right onto the Seaport Boulevard loop, but most vehicles would turn right to exit the Pacific Shores Center. Roundabouts were considered for both the Seaport Boulevard intersection with the Seaport Boulevard Loop and the Seaport Boulevard loop intersection with the project site access road. The idea of roundabouts was rejected at both locations as roundabouts require more land and are not as pedestrian and bicycle friendly as signalized or stop signed controlled intersections.

Within the project site, a one-way one-lane road would travel counter-clockwise around the ferry terminal parking lot. Vehicles, including transit buses and emergency vehicles, would be able to enter or exit the parking lot from this road at three access points to the east, west, and south of the parking lot or travel to a drop-off area and transit stop for the ferry terminal at the western edge of the project site. This road would also have entrances and exits to and from the visitor-serving uses located north of the ferry terminal parking lot. The precise location and design of entrances and exits to the visitor-serving uses would be determined during future site planning.

The new site access road would eliminate one entrance to the existing public parking lot for the waterfront park east of the project site, thereby limiting parking lot access to the northern driveway from Seaport Boulevard loop. The driveway would provide access in and out of the public parking lot and the driveway would be separated from the new access road to provide ingress and egress. Vehicles could continue to enter the public parking lot by turning left into the lot if traveling northeast on the loop road, or by turning right if traveling southwest on the loop road. There would be no direct access between the parking lot and the new project site access road.

The widening of the western leg of the Seaport Boulevard loop would accommodate a new two-way 13-foot Class 1 bicycle trail and 10-foot ADA-friendly sidewalk constructed along the eastern side. The new trail and sidewalk would commence at the entrance to the Pacific Shores Center and connect to an existing crosswalk that adjoins the existing trail along Seaport Boulevard to the west that connects to the future

bike and pedestrian path at the US 101/SR 84 interchange and Broadway and Veterans Boulevard. The details of assessment of existing and planned pedestrian and bicycle facilities that would provide access from downtown and other parts of the City to the proposed project site are included in **Section 3.2.2**.

The proposed Class 1 bicycle trail and sidewalk would then extend along the western leg of the Seaport Boulevard loop to the project site access road. Marked crosswalks would be located on either side of the new project site access road. The Class 1 bicycle trail would extend along the southern side of the access road and project site. It would then turn north along the western site boundary until it reaches the ferry terminal entrance and connects to the proposed extension of the Bay Trail. The sidewalk would be constructed along the eastern edge of the bicycle trail along Seaport Boulevard loop and would continue past the project site access road to the public parking lot entrance to the north. The sidewalk would continue along the Class 1 bicycle trail and access road where it enters the site and would also extend along the northern side of the site access road and the eastern boundary of the project site. It would extend along both sides of the western leg of the loop road from the project site access road north to the public parking lot driveway.

The proposed project would also extend the Bay Trail along the water's edge at the northern edge of the project site. The trail would connect to the ferry terminal, the other pedestrian and bicycle access improvements, and the existing roadway and trail network. Users of the trail would be able to travel to and from the ferry terminal using the Bay Trail.

Existing and future transit connectivity opportunities to provide transit service to/from the proposed project site are as follows.

Local shuttle service would provide public transit to and from the ferry terminal. The shuttle would provide connectivity to downtown Redwood City and other transit connections including SamTrans Redwood City Transit Center that is co-located with the Caltrain Redwood City Station.

There are one existing transit service and three shuttles operating near to the project area including SamTrans Route 270 - Redwood City Transit Center (Loops), the Midpoint (Redwood City Caltrain) shuttle, Seaport Center (Redwood City Caltrain) shuttle and the Pacific Shores shuttle. The existing Seaport Center shuttle that operates between the Caltrain Redwood City Station and the Pacific Shores Center and Seaport Center would serve the project site.

Additionally, several larger employers in the area operate private shuttles for employees to and from transit centers, which could also provide connection to the ferry terminal either as a ferry terminal stop or from a connecting location. Reimagine SamTrans plan[127] mentions future transit connectivity opportunities between the Port and Belmont, Foster City, and San Mateo; however, no specific connections have been identified and are therefore not considered in this analysis.

[127] San Mateo County Transit District (SamTrans). March 2022. Reimagine SamTrans. Available: https://www.samtrans.com/media/19711/.

Parking

The proposed ferry terminal includes a surface parking lot with 250 parking spaces. The transportation analysis estimated the parking demand for ferry users on a weekday as 190 vehicles in 2023.[128] The 250-space parking lot for the ferry terminal would be sufficient to meet this estimated parking demand. The parking lot would provide the minimum required 7 accessible parking spaces, of which a minimum of 2 parking spaces would also be van accessible.[129] The parking lot would also meet State and local electric vehicle (EV) parking requirements as described in CALGreen Section 5.106.5.3 and Chapter 9, Article XV of the Redwood City Municipal Code (for more information, refer to Section 3.5, Energy, and 3.7, Greenhouse Gas Emissions, of the Draft EIR). The precise number of spaces and location required for the visitor-serving uses would be determined at the time specific development is proposed. However, consistent with MTC's TOC Policy (discussed in Section 3.10, Land Use, of the Draft EIR), the number of parking spaces would not be more than four spaces per 1,000 square feet of commercial uses. Per CALGreen's electric vehicle charging requirements for nonresidential construction and Section 9.261 of the Redwood City Municipal Code, 20 percent of the available parking would be required to have EV charging stations (EVCS).

The ferry terminal would have 16 bicycle lockers (long-term) for bicycle/micromobility devices (such as scooters) storage at the start of ferry terminal operations with room for expansion to meet the demand that would be determined during operations. There would also be unsecured (short-term) bicycle parking facilities for a minimum of two bicycles. This exceeds the amount of long-term (secured) bicycle parking and meets the amount of short-term (unsecured) bicycle parking recommended in the City's Bicycle Parking Design Guidelines.[130] The design of the bicycle lockers and unsecured bicycle parking would consider these guidelines' recommendations on the location and access for the protection of bicycles from theft, vandalism, and weather, and ease of access to ferry users and diversity of their bicycles.

The ferry terminal component would provide designated passenger loading/unloading areas for transit, taxi, and TNC vehicles, which would support multimodal access to the project site and may reduce demand for auto parking spaces. The location for the on-site transit stop (bus stop and turnout) and pull out/loading area for taxis/TNCs are identified in **Figure 1.2**.

Additional parking on-site would be provided to accommodate the visitor-serving uses. The precise number of parking spaces and location required would be determined at the time specific development is proposed. It is assumed that the parking for the visitor-serving uses would be provided on the ground floor of the hotel, but it may also include some surface parking. The number of spaces provided would be determined based on the precise number of rooms and amenities at the hotel (i.e., restaurant or meeting space) and square footages of the restaurant and office. The number of spaces would be consistent with City parking requirements Section 30.5 of the Redwood City Zoning Code and the TOC Policy. Under the TOC Policy, the maximum number of parking spaces for the visitor-serving uses would be 840. It is

[128] The rounded value of 190 was estimated by multiplying the percent AM (forward commute) trips from Redwood City to Oakland and San Francisco of 11.7 percent computed using ridership estimate in the Ferry Business Plan to the total weekday vehicle (auto mode) trip estimates after ridership adjustments in this study at the proposed Redwood City ferry terminal of 1,630 trips in 2023.

[129] U.S. Department of Justice, Civil Rights Division. No date. Americans with Disabilities Act (ADA) - Accessible Parking Spaces webpage. Available: https://www.ada.gov/topics/parking/. Accessed August 24, 2024.

[130] City of Redwood City. June 2024. Bicycle Parking Design Guidelines. Available: https://www.redwoodcity.org/home/showpublisheddocument/29028/638623564866770000.

assumed that a portion of the parking would be shared parking between the ferry terminal and other uses.

The Redwood City Zoning Code allows for shared use parking as follows:

> "Shared-Use Parking on Multiple Sites. Sites with multiple uses having different peak demand times may share parking. A parking study shall be submitted that demonstrates how parking demand will be met with a shared parking arrangement. This study is subject to review and approval of the review authority."[131]

Additionally, as discussed in **Section 3.1.3**, the visitor-serving uses may be required to meet a mode share under the City's TMD program. City policies require TMD measures to achieve mode share targets, one of which includes shared parking among multiple uses.

Based on the above, the visitor-serving uses can potentially have a shared parking arrangement with the ferry terminal - where users would be primarily daytime users, while the proposed hotel would have evening and nighttime use. Additional shared parking arrangements with valet service may be possible with the neighboring Pacific Shores Center. Shared parking agreements/arrangements would allow some reduction in the required number of parking spaces for the proposed visitor-serving land uses.

Consistent with the MTC's TOC Policy, the number of parking spaces for the visitor-serving uses would not be more than four spaces per 1,000 square feet of commercial uses (this equates to a maximum of 840 parking spaces for visitor-serving uses).[132] The precise number of parking spaces and location required for visitor-serving uses to be compliant with the Redwood City Municipal Code would be determined at the time a specific developer and their development plans are proposed.

Bicycle parking would be provided in compliance with the TOC Policy and the City's Bicycle Parking Design Guidelines[133] for long-term (secured) and short-term (unsecured) spaces per proposed land use. Consistent with Section 30.6 of the Redwood City Zoning Code, there would be no less than one bicycle parking space per five thousand square feet of floor area (this equates to up to 42 bicycle parking spaces). The precise number of short- and long-term bicycle parking required would be determined at the time specific development is proposed.

4.1.2 Quantitative Assessment

Based on the initial non-CEQA LOS evaluation of the proposed ferry terminal component and full project, the quantitative assessment identified two intersections that required intersection modifications by 2040 due to future cumulative traffic increases to meet City requirements under the ferry terminal component; these modifications were subsequently integrated into the proposed project and are assumed in this analysis. These improvements and the timing for implementation are identified below:

[131] City of Redwood City. City of Redwood City - Zoning Code Article 30 - Off-Street Parking And Loading. Available: https://library.municode.com/ca/redwood_city/codes/zoning_code?nodeId=ART30OREPALO.
[132] Metropolitan Transportation Commission (MTC). October 2024. MTC's Transit-Oriented Communities Policy - Overview. Available: https://mtc.ca.gov/sites/default/files/documents/2024-10/MTC_TOC_Policy_Overview_October_2024.pdf.
[133] City of Redwood City. June 2024. Bicycle Parking Design Guidelines. Available: https://www.redwoodcity.org/home/showpublisheddocument/29028/638623564866770000.

- Conversion of the existing all-way stop control to signalized control of Seaport Boulevard and Pacific Shores Center Entrance Road (intersection #1a) under cumulative (2040) conditions only
  - Implementation of this improvement would occur in 2039
- All-way stop control at Seaport Boulevard Loop and Proposed Project Facility Entrance Road (intersection #1c) and addition of eastbound left turn-pocket length of 140 feet to accommodate the 95th percentile queue in the worst peak hour (occurs in PM period) under cumulative (2040) conditions
  - Implementation of this improvement would occur with construction of the proposed access road into the ferry terminal site

No additional modifications were identified under the full project (i.e., due to adding in visitor-serving uses to the ferry terminal component).

Background Plus Project LOS

The quantitative results are divided into "ferry terminal component" (ferry terminal and service and access improvements) and a "full project" (all project elements [ferry terminal and service, access improvements, and visitor-serving uses based on maximum build-out assumption for visitor-serving uses] combined). As described in **Section 1.1.2**, the visitor-serving uses represent a maximum build-out assumption of a 180,000 square foot hotel, 20,000 square foot restaurant, 10,000 square foot office, and permanent restroom facility for the ferry terminal. The precise mix of uses and square footage and site configuration is unknown and would be determined during future site planning.

Table 4.1 through **Table 4.3** summarize the LOS results for the project area intersections, freeway segments, and arterial segments in the project area under existing (2023) plus project and cumulative (2040) project conditions and in the worst peak hour (AM or PM). The LOS under project conditions are compared to those under no project conditions, and the key findings are as follows:

- Existing (2023) plus project conditions:
  - Intersections:
    - When the LOS results showed no change in intersection LOS due to the full project, or showed that the change due to the full project was within a reasonable limit (intersections operate at LOS D or better), intersection LOS analysis for those intersections was not conducted for the ferry terminal component conditions
    - Seaport Boulevard and Pacific Shores Center Entrance Road (intersection #1a) would reach LOS F under full project conditions but would reach only LOS C under ferry terminal component conditions
    - SR 84 (Woodside Road) and Veterans Boulevard / US 101 SB On-Ramp (intersection #5) would change from LOS B to LOS C under full project conditions, which is reasonable in terms of traffic operations
    - The remaining intersections would operate at the same LOS as the existing (2023) conditions

- Freeway segments:
  - No change in LOS is anticipated due to the ferry terminal component and full project over the existing (2023) conditions
- Arterial segments:
  - Except Seaport Boulevard from Chesapeake Drive to Blomquist Street / E Bayshore Road (segment 4), no change in LOS is observed on the arterial segments; even for segment 4, the change is within reasonable limits – this segment would operate at LOS C or better under ferry terminal component conditions, and LOS D or better under full project conditions
- Based on the LOS analysis, no roadway improvements are recommended under existing (2023) conditions

- Cumulative (2040) project conditions:
  - Intersections:
    - Similar to the existing (2023) conditions, the LOS analysis for the ferry terminal component conditions was conducted for a limited number of locations
    - Seaport Boulevard Loop and Proposed Project Facility Entrance Road (intersection #1c) would reach LOS F under full project conditions but would reach only LOS C under ferry terminal component conditions
    - Seaport Boulevard and Pacific Shores Center Entrance Road (intersection #1a) would process 100 percent of the proposed project traffic. Based on an initial analysis at this intersection using existing control type (all-way stop control), the traffic operations were found to change from LOS D (approaching unstable flow) to LOS F (forced traffic flow), even under ferry terminal component conditions. To improve operations, the LOS analysis suggested replacing the existing AWSC control type with a signalized control type by 2040. The final analysis using the signalized control found that the intersection would operate at LOS C or better under ferry terminal component conditions, and at LOS D or better under the full project conditions. The signalized control type at this intersection was incorporated into the proposed project and is included in the project description (Chapter 2) of this EIR.[134]
    - The remaining intersections would either operate at the same LOS as the cumulative (2040) no project conditions or change to operations at LOS D or better
  - Freeway segments:
    - No change in LOS is anticipated due to ferry terminal component and full project over the cumulative (2040) no project conditions

[134] A roundabout was also considered for both Seaport Boulevard and Pacific Shores Entrance Road (intersection #1a) and Proposed Project Facility Entrance Road (intersection #1c). However, roundabouts require more land and are not as pedestrian and bicycle friendly as signalized or stop signed controlled intersections and therefore, were determined to be less optimal at these locations.

- Arterial segments:
  - The arterial segments that are experiencing LOS F at least part of the day under cumulative (2040) no project conditions would also experience LOS F under cumulative (2040) full project and ferry terminal component conditions
  - All other arterial segments would experience either no change or a change to LOS C or better

Based on the LOS analysis, the only roadway improvement recommended under cumulative (2040) conditions was the conversion of the existing AWSC control type at Seaport Boulevard and Pacific Shores Center Entrance Road (intersection #1a) to a signalized control type. This intersection modification was incorporated into the proposed project and included in the project description.

In addition to LOS analysis, a queuing analysis was performed at Seaport Boulevard Loop and Proposed Project Facility Entrance Road (intersection #1c) under ferry terminal component and found that the 95th percentile queue length for eastbound left turn from Seaport Boulevard loop to the proposed project site would not exceed 140 feet up to 2040. Therefore, the eastbound left turn lane at intersection #1c would be 140 feet.

Attachment 9 provides detailed results for existing (2023) plus project and cumulative (2040) project conditions, in terms of Synchro estimates of delays and LOS by approach and intersection. **Attachment 10** provides volume, delay, and LOS summary tables for intersections, and volume, v/c ratio, and LOS summary tables for freeway and arterial segments.

Table 4.1 Intersection Background plus Project Scenarios LOS Results

Int. #	Intersection Name	Control Type	Method	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
1c	Seaport Blvd Loop and Proposed Project Facility Entrance Rd	TWSC	HCM 6th	Not applicable	A	B	Not applicable	C	F
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC or Signalized*	HCM 6th or HCM 2000*	B	C	F	D	C	D
1b	Seaport Blvd and Hinman Rd	TWSC**	HCM 6th	A	A	A	A	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	B	B	B	B	B	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	B	B	B	C	C	D
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	C	C	C	C	D	D
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Signalized	HCM 6th	B	C	C	Not Applicable	Not Applicable	Not Applicable
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Signalized	HCM 2000	F	F	F	Not Applicable	Not Applicable	Not Applicable
4N	SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Signalized	HCM 6th	Not Applicable	Not Applicable	Not Applicable	F	F	F
5N	SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Signalized	HCM 2000	Not Applicable	Not Applicable	Not Applicable	E	E	E

Int. #	Intersection Name	Control Type	Method	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
6N	SR 84 (Woodside Rd) and Broadway	Signalized	HCM 2000	Not Applicable	Not Applicable	Not Applicable	F	F	F
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	E	E	E	F	F	F
8	Maple St and Blomquist St	AWSC	HCM 6th	B	B	B	C	D	D
9	Maple St and Veterans Blvd	Signalized	HCM 2000	C	C	C	D	D	D
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	A	A	A	B	B	B
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	D	D	D	F	F	F
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	D	D	D	E	E	E
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	C	C	C	F	F	F
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	C	C	C	F	F	F

Source: CDM Smith, 2024.
*AWSC / HCM 6th (Control Type/Method) under All Existing and Cumulative No Project Scenarios and Signalized / HCM 2000 under Cumulative Project Scenarios
**LOS reported for the worst stop-controlled minor approach at TWSC intersection
Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table 4.2 Freeway Segments Background plus Project Scenarios LOS Results

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
O1	US 101 NB		Off to Marsh Rd	E	E	E	F	F	F
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	E	E	E	F	F	F
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	F	F	F	F	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	E	E	E	F	F	F
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	E	E	E	F	F	F
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	F	F	F	F	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	E	E	E	F	F	F
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	F	F	F	F	F	F
D1	US 101 NB	On from WB Whipple Ave		F	F	F	F	F	F
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	E	E	E	F	F	F
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	D	D	D	E	E	E
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	D	D	D	E	E	E
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	F	F	F	F	F	F

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	F	F	F	F	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	E	E	E	F	F	F
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	E	E	E	F	F	F
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	E	E	E	F	F	F
D2	US 101 SB	On from EB Marsh Rd		E	E	E	F	F	F

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table 4.3 Arterial Segments Background plus Project Scenarios LOS Results

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	B (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	B (EB) / A (WB)	C (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	B (EB) / A (WB)	C (EB) / A (WB)	D (EB) / A (WB)	F (EB) / A (WB)	F (EB) / A (WB)	C (EB) / F (WB)
5	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)	Not Applicable	Not Applicable	Not Applicable
6	SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	F (EB) / E (WB)	F (EB) / E (WB)	F (EB) / F (WB)	Not Applicable	Not Applicable	Not Applicable
7	SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)	Not Applicable	Not Applicable	Not Applicable

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
4N	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Not Applicable	Not Applicable	Not Applicable	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)
5N	SR 84 (Woodside Rd) (Middle Top)	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Not Applicable	Not Applicable	Not Applicable	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)
6N	SR 84 (Woodside Rd) (Middle Bottom)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	6N: SR 84 (Woodside Rd) and Broadway	Not Applicable	Not Applicable	Not Applicable	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)
7N	SR 84 (Woodside Rd) (South)	6N: SR 84 (Woodside Rd) and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	Not Applicable	Not Applicable	Not Applicable	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	A (NB) / A (SB)	A (NB) / A (SB)	A (NB) / A (SB)	A (NB) / B (SB)	A (NB) / B (SB)	A (NB) / C (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / A (WB)	A (EB) / C (WB)	A (EB) / C (WB)	A (EB) / C (WB)
10	Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	A (NB) / A (SB)	A (NB) / A (SB)	A (NB) / A (SB)	Not Applicable	Not Applicable	Not Applicable
10N	Veterans Blvd (East)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	Not Applicable	Not Applicable	Not Applicable	B (NB) / A (SB)	B (NB) / A (SB)	B (NB) / A (SB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Worst Peak (AM or PM) LOS					
				Existing (2023)	Existing (2023) plus Ferry Terminal Component	Existing (2023) plus Full Project	Cumulative (2040) No Project	Cumulative (2040) Ferry Terminal Component	Cumulative (2040) Full Project
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	F (EB) / E (WB)	F (EB) / E (WB)	F (EB) / E (WB)	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	A (NB) / B (SB)	A (NB) / B (SB)	A (NB) / B (SB)	D (NB) / B (SB)	C (NB) / B (SB)	C (NB) / B (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	A (NB) / A (SB)	A (NB) / A (SB)	A (NB) / A (SB)	A (NB) / D (SB)	A (NB) / D (SB)	A (NB) / D (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	F (EB) / E (WB)	F (EB) / E (WB)	F (EB) / E (WB)	F (EB) / F (WB)	F (EB) / F (WB)	F (EB) / F (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

4.2 CEQA Transportation Analysis

4.2.1 Qualitative Assessment

Change in Safety

Per the analysis of VMT impacts presented in **Section 4.2.2**, the ferry terminal component would result in a reduction of approximately 12.0 million vehicle miles on an annual basis (38,980 vehicle miles on a weekday daily basis) in 2023 across the San Francisco Bay Area region; this would increase to a reduction of about 30.7 million vehicle miles on an annual basis (101,520 vehicle miles on a weekday daily basis) by 2040. Avoided end-to-end VMT would mostly occur on the freeway system connecting Redwood City to San Francisco and Oakland, which would result in an associated reduction in freeway crashes. Added VMT on the first mile/last mile access routes to/from ferry terminals, which is much smaller compared to the avoided end-to-end VMT, would have a small increase in non-freeway crash exposure. Multimodal access (i.e., providing alternatives to driving) and separation of bike and pedestrian movements from auto traffic on Seaport Boulevard loop included in the proposed project would reduce these safety impacts.

The one-way one-lane road counter-clockwise loop road around the parking lot, and designated pedestrian and bicycle facilities, curb and lane markings and signage compliant with the California MUTCD[135] and California HDM[136] would limit the safety conflicts during circulation. As part of the preparation of **Figure 1.2** a vehicle turn analysis was performed on the proposed site layout for a 40-foot bus to ensure that transit and shuttle buses, trucks and emergency vehicles can safely enter and exit the proposed project site.

Per the analysis of VMT impacts presented in **Section 4.2.2**, with the addition of visitor-serving uses, the full project would result in a lower reduction of about 0.7 million vehicle miles on an annual basis (9,340 vehicle miles on a weekday daily basis) in 2023 across the San Francisco Bay Area region; this would increase the reduction amount to about 19.5 million vehicle miles on an annual basis (72,030 vehicle miles on a weekday daily basis) by 2040. Non-freeway VMT would simultaneously increase.

4.2.2 Quantitative Analysis

Project Vehicle Trips

Under the proposed project conditions, the transportation analysis estimated the end-to-end "drive alone" trips avoided due to ferry service, "first mile/last mile" trips added due to ferry service, and trips added due to visitor-serving uses, in terms of persons (total for all modes) and motorized vehicles (auto mode only),[137] as shown in **Table 4.4** and **Table 4.5,** respectively. Person trips are reported on annual, weekday daily, weekend daily and special event day bases, while vehicle trips are reported on weekday daily, weekday AM peak hour, and weekday PM peak hour bases.

[135] California Department of Transportation (Caltrans). 2026. California Manual on Uniform Traffic Control Devices (MUTCD) 2026, Revision 9. Available: https://dot.ca.gov/programs/safety-programs/camutcd.

[136] California Department of Transportation (Caltrans). 2025. Highway Design Manual. Available: https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm.

[137] Autos carry a portion of the person trips and include drive alone personal car, kiss-and-ride, carpool, taxi, transportation network company (TNC) vehicles, transit, and employer shuttles. The remaining portion of person trips are carried by pedestrian and bicycle modes.

Table 4.4 Proposed Project Person Trips

Trip Type	Year 2023 Person Trips				Year 2040 Person Trips			
	Annual Total	Weekday Daily Total	Weekend Daily Total	Special Event Day	Annual Total	Weekday Daily Total	Weekend Daily Total	Special Event Day
Ferry Terminal Component								
End-to-End "Drive Alone" Trips Avoided*	-510,900	-1,630	-810	-90	-1,257,200	-4,070	-1,850	-210
Redwood - Oakland Ferry Service Trips Added	185,200	710	N/A	N/A	511,000	1,960	N/A	N/A
Redwood - San Francisco Ferry Service Trips Added	325,700	920	810	90	746,200	2,110	1,850	210
Summary:								
Net Trips To/From Project Site	510,900	1,630	810	90	1,257,200	4,070	1,850	210
Net Trips Avoided To/From Project Site	-510,900	-1,630	-810	-90	-1,257,200	-4,070	-1,850	-210
Sub-Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Visitor-Serving Uses Component								
Hotel Trips Added	631,500	1,790	1,580	N/A	631,500	1,790	1,580	N/A
Office Trips Added	37,000	130	30	N/A	37,000	130	30	N/A
Restaurant Trips Added	964,600	2,390	2,980	N/A	964,600	2,390	2,980	N/A
Sub-Total	**1,633,100**	**4,310**	**4,590**	**0**	**1,633,100**	**4,310**	**4,590**	**0**
Full Project								
Summary:								
Net Trips To/From Project Site	2,144,000	5,940	5,400	90	2,890,300	8,380	6,440	210
Net Trips Avoided To/From Project Site	-510,900	-1,630	-810	-90	-1,257,200	4,070	1,850	**210**
Sub-Total	**1,633,100**	**4,310**	**4,590**	**0**	**1,633,100**	**4,310**	**4,590**	**0**

Sources: City of Redwood City. October 2020. Ferry Financial Feasibility Study & Cost-Benefit and Economic Impact Analyses. Prepared by CDM Smith. Available: https://www.redwoodcity.org/home/showpublisheddocument/22921/637442616488470000; Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf; Ferry Ridership Adjustment Methodology (**Attachment 5** of this Report) and Peak Hour Traffic Calculations by CDM Smith; Institute of Transportation Engineers (ITE). 2021. Trip Generation Manual 11th Edition, Daily Trip Generation Rates; Project Trip Calculations and Mode Split Assumptions by CDM Smith; U.S. Environmental Protection Agency (USEPA). No date. Mixed-Use Trip Generation Model v4. Available: https://www.epa.gov/smartgrowth/mixed-use-trip-generation-model. Accessed August 8, 2024; U.S. Department of Transportation, Federal Highway Administration (FHWA). April 2018. Average Vehicle Occupancy Factors for Computing Travel Time Reliability Measures and Total Peak Hour Excessive Delay Metrics. Available: https://www.fhwa.dot.gov/tpm/guidance/avo_factors.pdf.

Note:

*Trips that would not happen if the proposed project is implemented.

Key: N/A = Not Applicable

There would be no net regional change in person trips due to the proposed ferry terminal. The avoided person trips would have moved directly between Redwood City and San Francisco and Oakland under the no project conditions, which would become the "first mile" and "last mile" trips to the proposed ferry terminal under the proposed project conditions. Considering the traffic generated at the proposed project site only, weekday daily traffic would be higher than its weekend value under both the ferry terminal component and the full project. The weekend daily traffic generated by visitor-serving uses, on a standalone basis, would be slightly higher than its weekday value.

Under the ferry terminal component, the proposed project site would generate 1,630 person trips in 2023, increasing to 4,070 person trips by 2040, on a weekday daily basis, as shown in **Table 4.4**. As shown in **Table 4.5**, in 2023, weekday AM peak hour and PM peak hour project traffic volume would be 220 and 229 vehicle trips, respectively. By 2040, these could reach up to 507 and 531 vehicle trips, respectively.

As shown in **Table 4.4**, under the full project, the weekday daily travel volume would be 5,940 person trips in 2023 increasing to 8,380 person trips by 2040. As shown in **Table 4.5**, in 2023, weekday AM peak hour and PM peak hour, project traffic volume would be 508 and 529 vehicle trips, respectively. By 2040, these volumes could reach up to 795 and 831 vehicle trips, respectively.

Table 4.5 Proposed Project Vehicle Trips

Trip Type	Year 2023 Vehicle Trips				Year 2040 Vehicle Trips			
	Annual Total	Weekday Daily Total	Weekday AM Peak Hour	Weekday PM Peak Hour	Annual Total	Weekday Daily Total	Weekday AM Peak Hour	Weekday PM Peak Hour
Ferry Terminal Component								
End-to-End "Drive Alone" Trips Avoided*	-510,900	-1,630	-273	-286	-1,257,200	-4,070	-638	-667
Redwood Ferry Terminal "First Mile/Last Mile" Trips Added	403,700	1,288	220	229	994,000	3,218	507	531
Oakland Ferry Terminal "First Mile/Last Mile" Trips Added	95,500	366	67	72	262,300	1,006	173	185
San Francisco Ferry Terminal "First Mile/Last Mile" Trips Added	56,600	160	29	30	129,400	366	57	58
Summary:								
Net Trips To/From Project Site	403,700	1,288	220	229	994,000	3,218	507	531
Net Trips Avoided To/From Project Site	-358,800	-1,104	-177	-184	-865,500	-2,698	-408	-424
Sub-Total	**44,900**	**184**	**43**	**45**	**128,500**	**520**	**99**	**107**
Visitor-Serving Uses Component								
Hotel Trips Added	543,300	1,540	89	113	543,300	1,540	89	113
Office Trips Added	30,800	110	15	13	30,800	110	15	13
Restaurant Trips Added	831,700	2,060	184	174	831,700	2,060	184	174
Sub-Total	**1,405,800**	**3,710**	**288**	**300**	**1,405,800**	**3,710**	**288**	**300**

Trip Type	Year 2023 Vehicle Trips				Year 2040 Vehicle Trips			
	Annual Total	Weekday Daily Total	Weekday AM Peak Hour	Weekday PM Peak Hour	Annual Total	Weekday Daily Total	Weekday AM Peak Hour	Weekday PM Peak Hour
Full Project								
Summary:								
Net Trips To/From Project Site	1,809,500	4,998	508	529	2,399,800	6,928	795	831
Net Trips Avoided To/From Project Site	-358,800	-1,104	-177	-184	-865,500	-2,698	-408	-424
Total	**1,450,700**	**3,894**	**331**	**345**	**1,534,300**	**4,230**	**387**	**407**

Sources: City of Redwood City. October 2020. Ferry Financial Feasibility Study & Cost-Benefit and Economic Impact Analyses. Prepared by CDM Smith. Available: https://www.redwoodcity.org/home/showpublisheddocument/22921/637442616488470000; Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf; Ferry Ridership Adjustment Methodology (**Attachment 5** of this Report) and Peak Hour Traffic Calculations be CDM Smith; Institute of Transportation Engineers (ITE). 2021. Trip Generation Manual 11th Edition, Daily and Peak Hour Trip Generation Rates; Project Trip Calculations and Mode Split Assumptions by CDM Smith; U.S. Environmental Protection Agency (USEPA). No date. Mixed-Use Trip Generation Model v4. Available: https://www.epa.gov/smartgrowth/mixed-use-trip-generation-model. Accessed August 8, 2024; U.S. Department of Transportation, Federal Highway Administration (FHWA). April 2018. Average Vehicle Occupancy Factors for Computing Travel Time Reliability Measures and Total Peak Hour Excessive Delay Metrics. Available: https://www.fhwa.dot.gov/tpm/guidance/avo_factors.pdf.

Note:

*Trips that would not happen if the proposed project is implemented.

Background plus Project VMT

Under the no project conditions, the proposed project site would be vacant; hence it would not generate any trips. Therefore, the weekday daily VMT and per capita VMT under the no project scenario are the same as the background VMT shown in **Table 3.5**.

The "first mile/last mile" trips added due to ferry service and the trips added due to visitor-serving uses are shorter in trip length on average compared to end-to-end "drive alone" trips avoided due to ferry service. As a result, there is a reduction in weekday daily VMT and per capita VMT levels in the San Francisco Bay Area Region TAZs in 2023 and 2040 due to both the ferry terminal component and the full project as shown in **Table 4.6**. Weekday daily VMT in the San Francisco Bay Area Region TAZs level would drop by 38,980 vehicle miles in 2023 and up to 101,520 vehicle miles by 2040 due to the ferry terminal component. Compared to the background VMT, this is an approximately 0.010 percent and 0.021 percent reduction in VMT across the San Francisco Bay Area region in 2023 and 2040, respectively. Smaller reductions in VMT of 9,340 vehicle miles in 2023 and 72,030 vehicle miles in 2040 would be seen due to vehicle miles that would be added as part of the full project (e.g., trips associated with proposed visitor-serving uses). The increase in VMT for trips added to/from the proposed project site is limited to San Mateo County TAZs, which are mostly within Redwood City TAZs as shown in **Table 4.7**.

Table 4.6 Proposed Project Weekday Daily VMT

Trip Type	Redwood City TAZs Weekday Daily VMT		San Mateo County TAZs Weekday Daily VMT		San Francisco Bay Area Region TAZs Weekday Daily VMT	
	2023	2040	2023	2040	2023	2040
Ferry Terminal Component						
End-to-End "Drive Alone" Trips Avoided*	-3,420	-8,550	-29,320	-72,090	-47,780	-124,040
Redwood Ferry Terminal "First Mile/Last Mile" Trips Added	5,530	14,410	5,790	14,930	5,790	14,930
Oakland Ferry Terminal "First Mile/Last Mile" Trips Added	0	0	0	0	2,170	5,680
San Francisco Ferry Terminal "First Mile/Last Mile" Trips Added	0	0	0	0	840	1,910
Summary:						
Net Trips To/From Project Site	5,530	14,410	5,790	14,930	5,790	14,930
Net Trips Avoided To/From Project Site	-3,420	-8,550	-29,320	-72,090	-44,770	-116,450
Sub-Total	**2,110**	**5,860**	**-23,530**	**-57,160**	**-38,980**	**-101,520**
Visitor-Serving Uses Component						
Hotel Trips Added	11,890	11,910	12,300	12,240	12,300	12,240
Office Trips Added	850	850	880	870	880	870
Restaurant Trips Added	15,910	15,930	16,460	16,380	16,460	16,380
Sub-Total	**28,650**	**28,690**	**29,640**	**29,490**	**29,640**	**29,490**
Full Project						
Summary:						
Net Trips To/From Project Site	34,180	43,100	35,430	44,420	35,430	44,420
Net Trips Avoided To/From Project Site	-3,420	-8,550	-29,320	-72,090	-44,770	-116,450
Total	**30,760**	**34,550**	**6,110**	**-27,670**	**-9,340**	**-72,030**

Source: CDM Smith, 2024.
Key: VMT = Vehicle Miles Traveled
Note:
*Trips that would not happen if the proposed project is implemented.

Table 4.7 Proposed Project Annual VMT

Trip Type	Redwood City TAZs Annual VMT		San Mateo County Annual VMT		San Francisco Bay Area Region TAZs Annual VMT	
	2023	2040	2023	2040	2023	2040
Ferry Terminal Component						
End-to-End "Drive Alone" Trips Avoided*	-1,072,900	-2,640,100	-9,413,300	-22,832,300	-14,623,400	-37,532,000
Redwood Ferry Terminal "First Mile/Last Mile" Trips Added	1,733,300	4,516,600	1,814,800	4,679,600	1,814,800	4,679,600
Oakland Ferry Terminal "First Mile/Last Mile" Trips Added	0	0	0	0	566,000	1,481,600
San Francisco Ferry Terminal "First Mile/Last Mile" Trips Added	0	0	0	0	297,400	676,200
Summary:						
Net Trips To/From Project Site	1,733,300	4,516,600	1,814,800	4,679,600	1,814,800	4,679,600
Net Trips Avoided To/From Project Site	-1,072,900	-2,640,100	-9,413,300	-22,832,300	-13,760,000	-35,374,200
Sub-Total	**660,400**	**1,876,500**	**-7,598,500**	**-18,152,700**	**-11,945,200**	**-30,694,600**
Visitor-Serving Uses Component						
Hotel Trips Added	4,195,900	4,200,700	4,341,000	4,319,200	4,341,000	4,319,200
Office Trips Added	237,900	238,100	246,100	244,900	246,100	244,900
Restaurant Trips Added	6,423,300	6,430,500	6,645,300	6,612,000	6,645,300	6,612,000
Sub-Total	**10,857,100**	**10,869,300**	**11,232,400**	**11,176,100**	**11,232,400**	**11,176,100**
Full Project						
Summary:						
Net Trips To/From Project Site	12,590,400	15,385,900	13,047,200	15,855,700	13,047,200	15,855,700
Net Trips Avoided To/From Project Site	-1,072,900	-2,640,100	-9,413,300	-22,832,300	-13,760,000	-35,374,200
Total	**11,517,500**	**12,745,800**	**3,633,900**	**-6,976,600**	**-712,800**	**-19,518,500**

Source: CDM Smith, 2024.
Key: TAZs = Transportation Analysis Zones, VMT = Vehicle Miles Traveled
Note:
*Trips that would not happen if the proposed project is implemented.

As shown in **Table 4.8**, at the San Francisco Bay Area Region TAZs level, per capita VMT would be reduced by approximately 23 miles in 2023 and by approximately 24 miles in 2040 for every person trip diverted from "drive alone" to ferry terminal due to the ferry terminal component. Smaller reductions of just under 1 mile in 2023 and approximately 9 miles in 2040 would be seen at project buildout. Per capita VMT for trips added due to the visitor-serving uses component in 2023 and 2040 would be approximately 7 miles or less, which is 75.7 percent lower than the background per capita VMT of 28.8 miles for the San Francisco Bay Area region (refer to **Table 3.5**). The RWCmoves Plan provides guidelines for the conduct of transportation analysis for land use development projects in Appendix F. Table F-8 in that document, reproduced in this report as **Figure 3.2** in **Section 3.1.3** above, sets a threshold of 15.0 Home-based work VMT per employee for office uses, and 32.0 Total VMT per service area population for hotel/retail uses. Thresholds for other types of uses are to be determined by consultation with the City. **Table 4.8** shows the daily per capita VMT that would be generated by the proposed visitor-serving uses project components. These range from 6.4 to 6.7 VMT per capita within the Redwood City TAZs, which is well below the per capita threshold set by the City. VMT per capita for the ferry terminal project alone would be 1.3-1.5 VMT per capita for the years 2023 and 2040 within the Redwood City TAZs, respectively. While the City does not have specific VMT impact criteria for ferry terminal uses, the added VMT generated by the ferry terminal would be quite low and should not have an adverse impact on Citywide VMT.

Table 4.8 Proposed Project Daily Per Capita VMT

Trip Type	Redwood City TAZs Per Capita VMT		San Mateo County Per Capita VMT		San Francisco Bay Area Region TAZs Per Capita VMT	
	2023	2040	2023	2040	2023	2040
Ferry Terminal Component						
Trips due to Ferry Terminal	**1.3**	**1.5**	**-14.9**	**-14.4**	**-23.4**	**-24.4**
Visitor-Serving Uses Component						
Hotel Trips Added	6.6	6.7	6.9	6.8	6.9	6.8
Office Trips Added	6.4	6.4	6.7	6.6	6.7	6.6
Restaurant Trips Added	6.7	6.7	6.9	6.9	6.9	6.9
Trips due to Visitor-Serving Uses	**6.6**	**6.7**	**6.9**	**6.8**	**6.9**	**6.8**
Full Project						
All Trips	**5.4**	**4.4**	**1.7**	**-3.3**	**-0.3**	**-9.1**

Source: CDM Smith, 2024.
Key: TAZs = Transportation Analysis Zones, VMT = Vehicle Miles Traveled

Section 5
Acronyms and Abbreviations

AADT	annual average daily traffic
ADA	Americans with Disabilities Act
ADT	Average Daily Traffic
APN	Assessor's Parcel Number
AWSC	All-way stop control
BART	Bay Area Rapid Transit District
BCDC	San Francisco Bay Conservation and Development Commission
C/CAG	City/County Association of Governments of San Mateo County
CAFR	Comprehensive Annual Financial Reports
CAGR	compound annualized growth rate
Caltrans	California Department of Transportation
CalSTA	California State Transportation Agency
CARB	California Air Resources Board
CBD	Central Business District
CEQA	California Environmental Quality Act
CG	General Commercial
CMP	Congestion Management Program
CNRA	California Natural Resources Agency
EB	eastbound
EIR	Environmental Impact Report
FDW	FLASHING DON'T WALK
fy	fiscal year
g/C	green-to-cycle-length
GHG	Greenhouse gas
GI	General Industrial
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HOV	High Occupancy Vehicle

I-	Interstate
IOP	Implementation and Operations Plan
ITE	Institute of Transportation Engineers
JPA	Joint Powers Agency
LCI	California Governor's Office of Land Use and Climate Innovation
LOS	Level of service
mph	miles per hour
MTC	San Francisco Bay Area Metropolitan Transportation Commission
MUTCD	Manual on Uniform Traffic Control Devices
NB	northbound
OPR	California Governor's Office of Planning and Research
PeMS	Performance Measurement System
RTP	Regional Transportation Plan
SamTrans	San Mateo County Transit District
SB	Senate Bill
SB	southbound
SF-VMAP	San Francisco Vessel Mutual Assistance Plan
SHS	State Highway System
SMCTA	San Mateo County Transportation Authority
SR	State Route
TAC	Caltrans' Transportation Analysis under CEQA
TAF	Caltrans' Transportation Analysis Framework
TAM	Redwood City's Transportation Analysis Manual
TAZ	Transportation Analysis Zone
TDM	Travel Demand Model
TDMt	Transportation Demand Management Program
TIP	Transportation Improvement Program
TMC	Turning Movement Count
TNC	Transportation Network Company
TOC	Transit-Oriented Communities
TOD	Transit-Oriented Development

TWSC	Two-way stop control
USCG	U.S. Coast Guard
USEPA	U.S. Environmental Protection Agency's
v/c	volume-to-capacity
VMT	Vehicle Miles Traveled
WB	westbound
WETA	Water Emergency Transportation Authority

Section 6
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Attachment 1 – Project Area Intersection Configurations

Figure A1.1 and **Figure A1.2** show the existing (2023) and cumulative (2040) no project configurations of the project area intersections analyzed in this transportation study. Due to the US 101 / SR 84 Interchange Improvement Project, major changes in the configuration of intersections along with an addition of a lane in each direction of traffic flow are expected to occur on SR 84 (Woodside Boulevard) between the intersection of Seaport Boulevard and Blomquist Street / East Bayshore Road and the intersection of SR 84 (Woodside Boulevard) and Broadway. The configuration of intersection 1c at the Proposed Project Facility Entrance Road is shown in **Figure A1.2**. Under the cumulative (2040) project conditions, the control type at Seaport Boulevard and Pacific Shores Center Entrance Road (intersection 1a), which is expected all-way stop control (AWSC) under cumulative (2040) no project conditions, would be modified to signal controlled under the proposed project to improve safety of crossing for pedestrians and bicycles and to reduce excessive delays to vehicles due to the proposed project by 2040.

Attachment 1 has diagrams showing project area intersection configurations that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

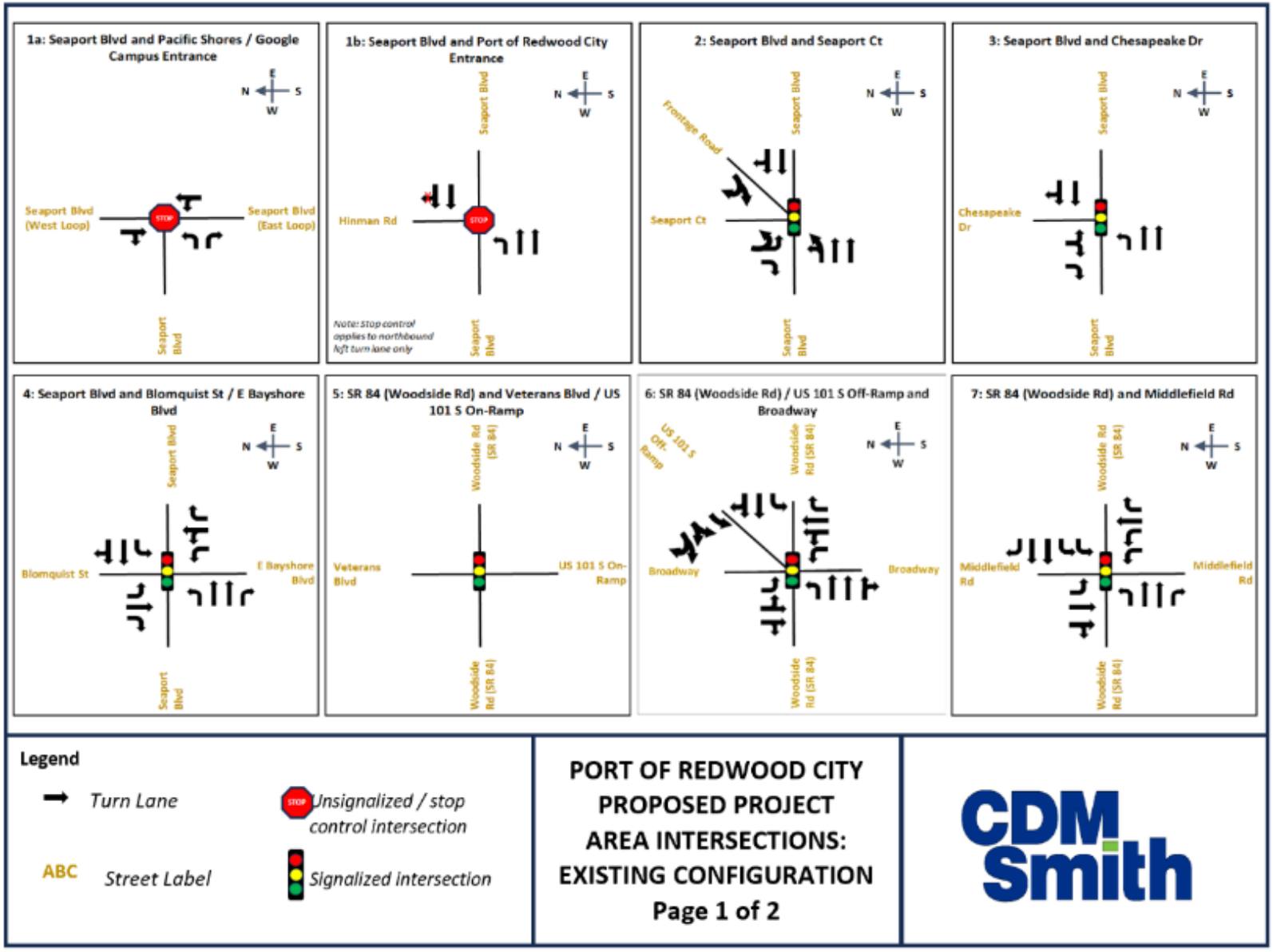


Figure A1.1 Existing (2023) Configurations of Project Area Intersections

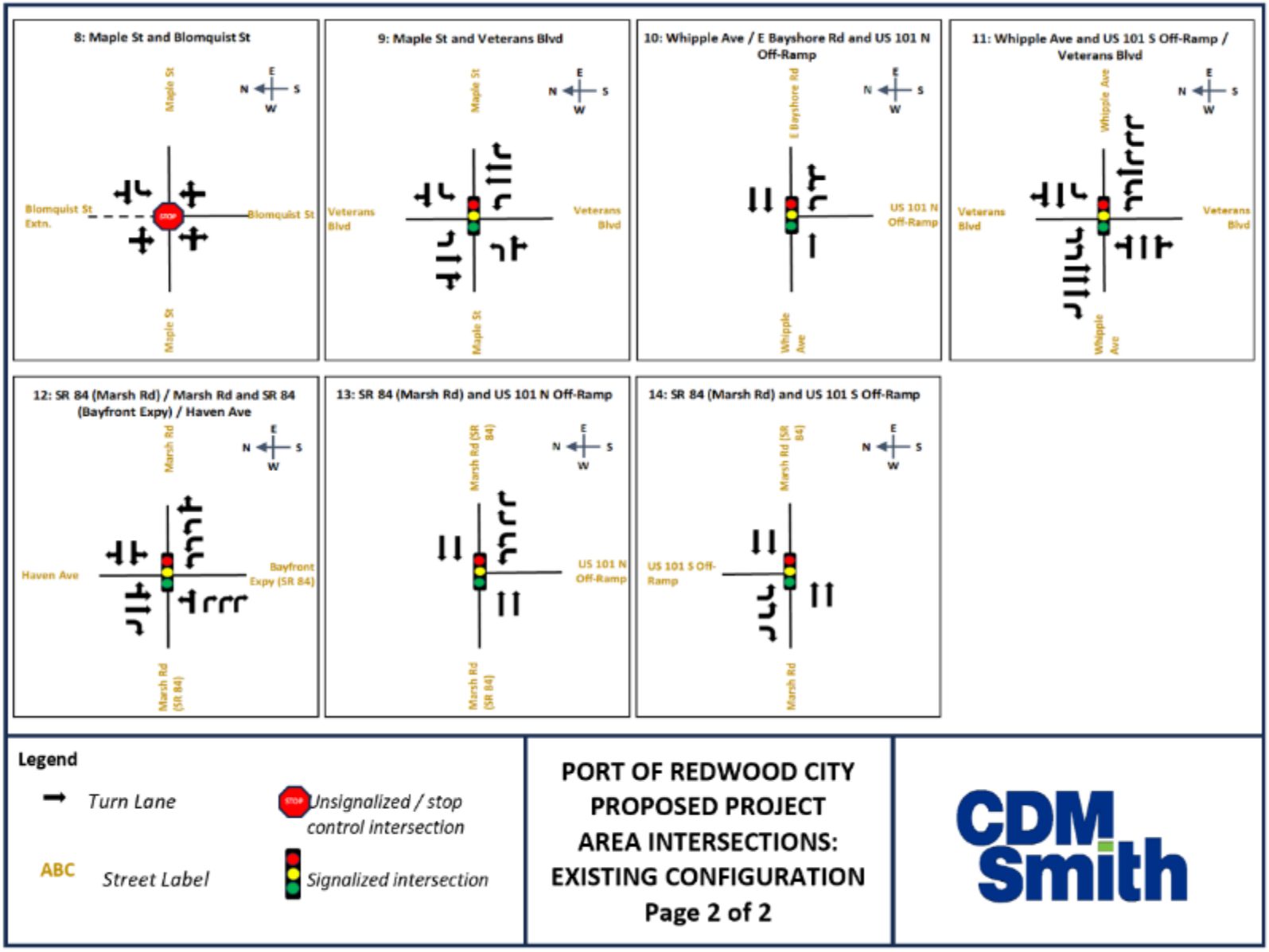


Figure A1.1 Existing (2023) Configurations of Project Area Intersections (Continued)

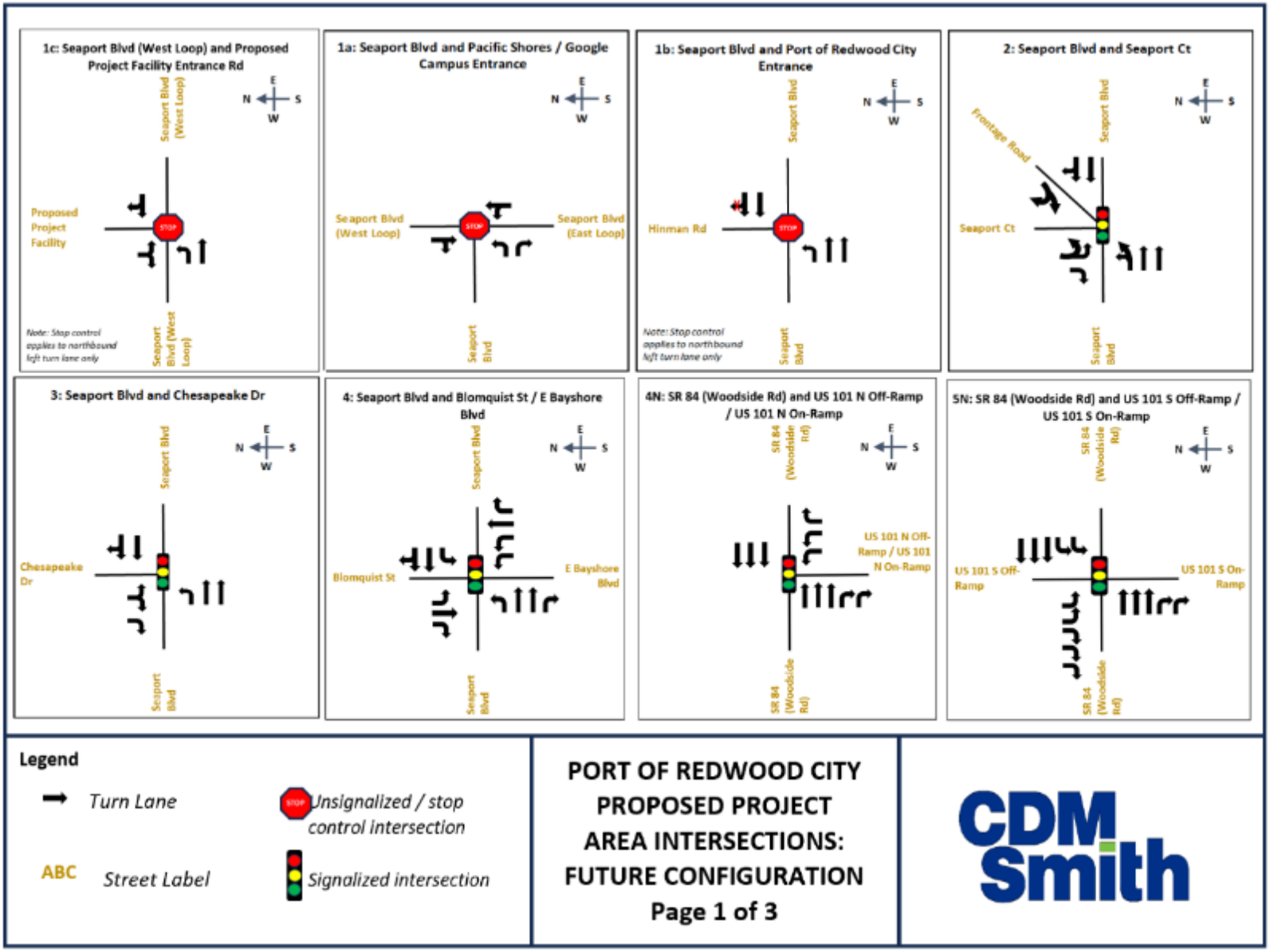


Figure A1.2 Cumulative (2040) No Project Configurations of Project Area Intersections plus Project Entrance Intersection (1c) Configuration

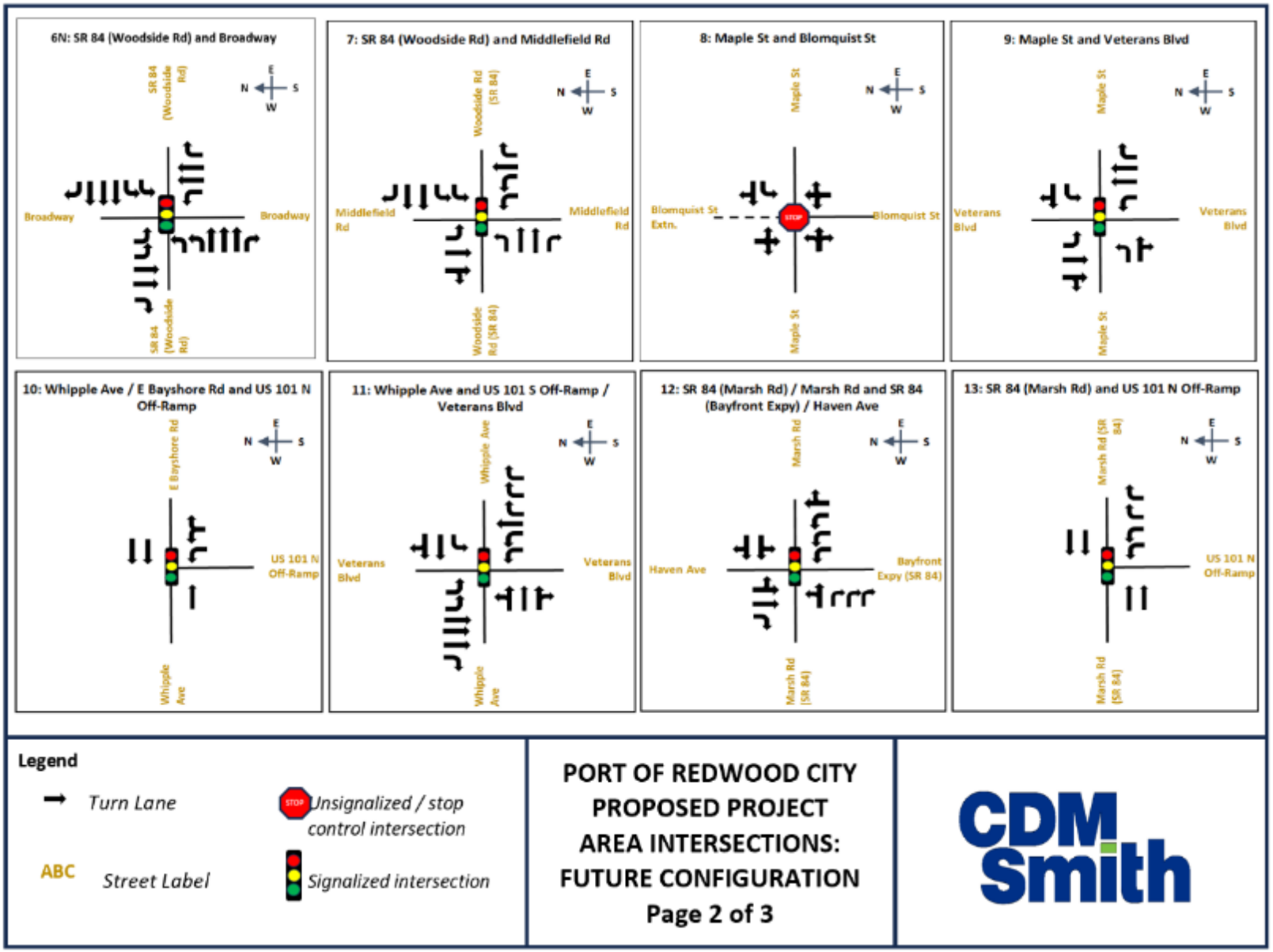


Figure A1.2 Cumulative (2040) No Project Configurations of Project Area Intersections plus Project Entrance Intersection (1c) Configuration (Continued)

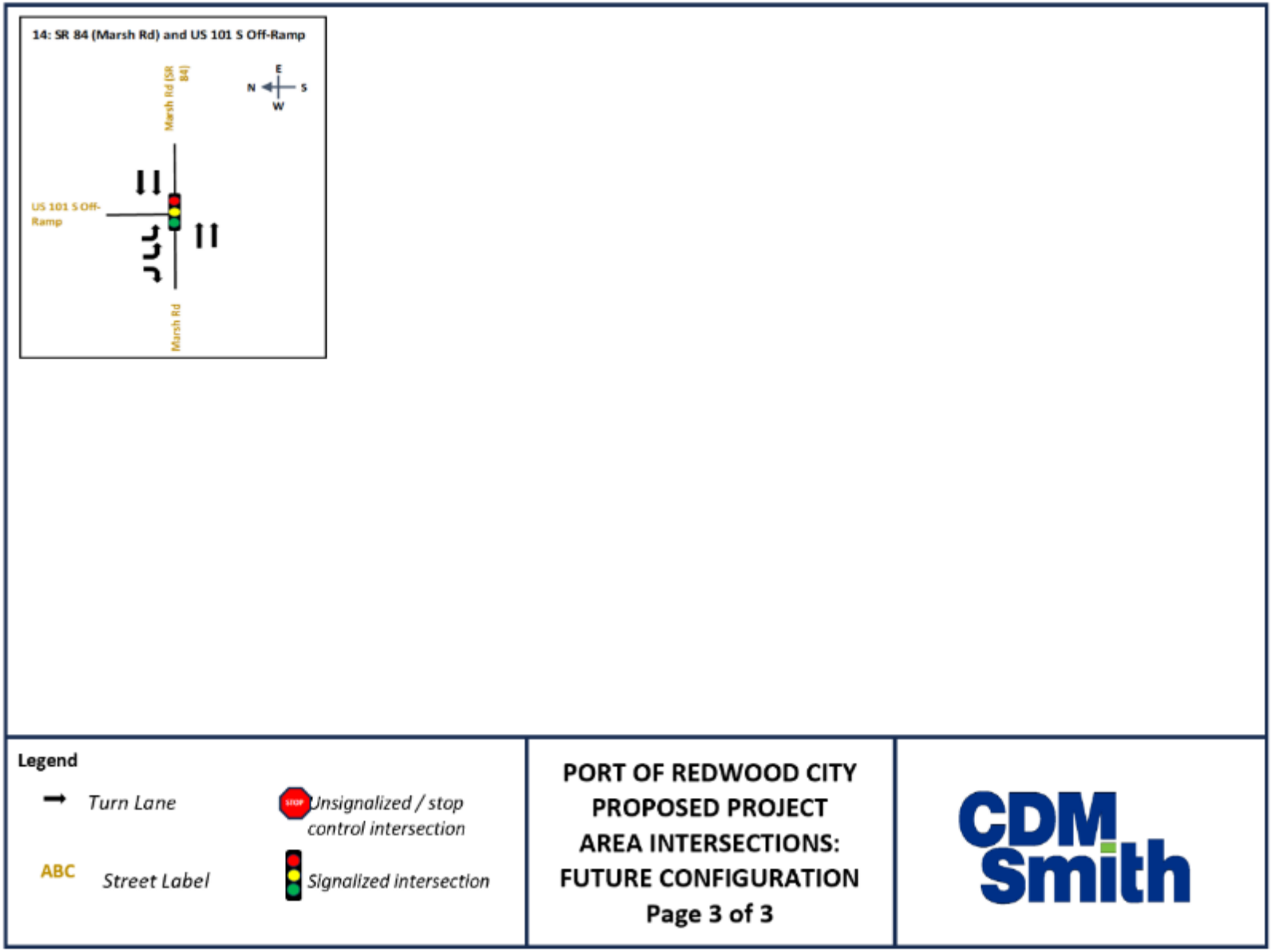
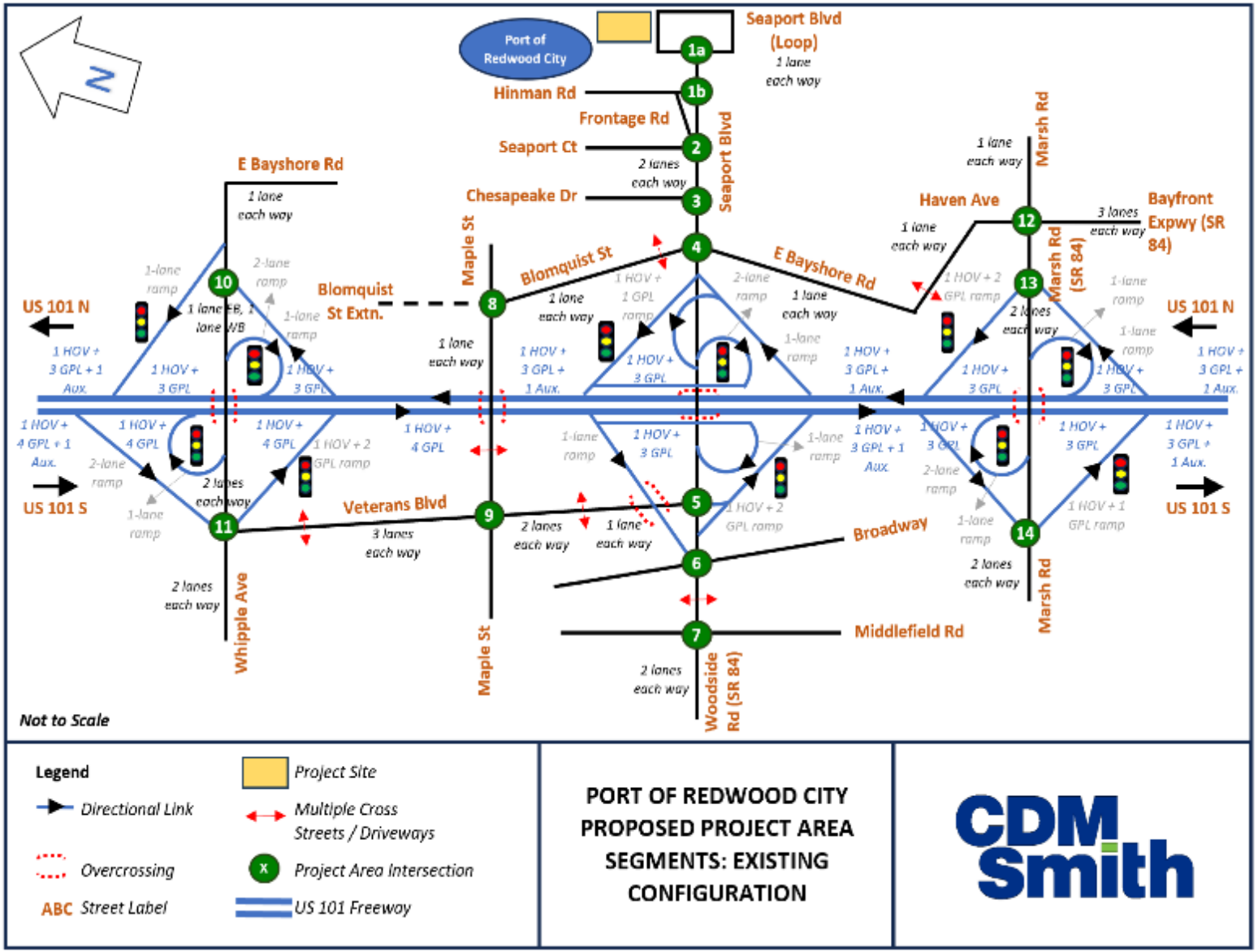


Figure A1.2 Cumulative (2040) No Project Configurations of Project Area Intersections plus Project Entrance Intersection (1c) Configuration (Continued)

Attachment 2 – Project Area Segment Configurations

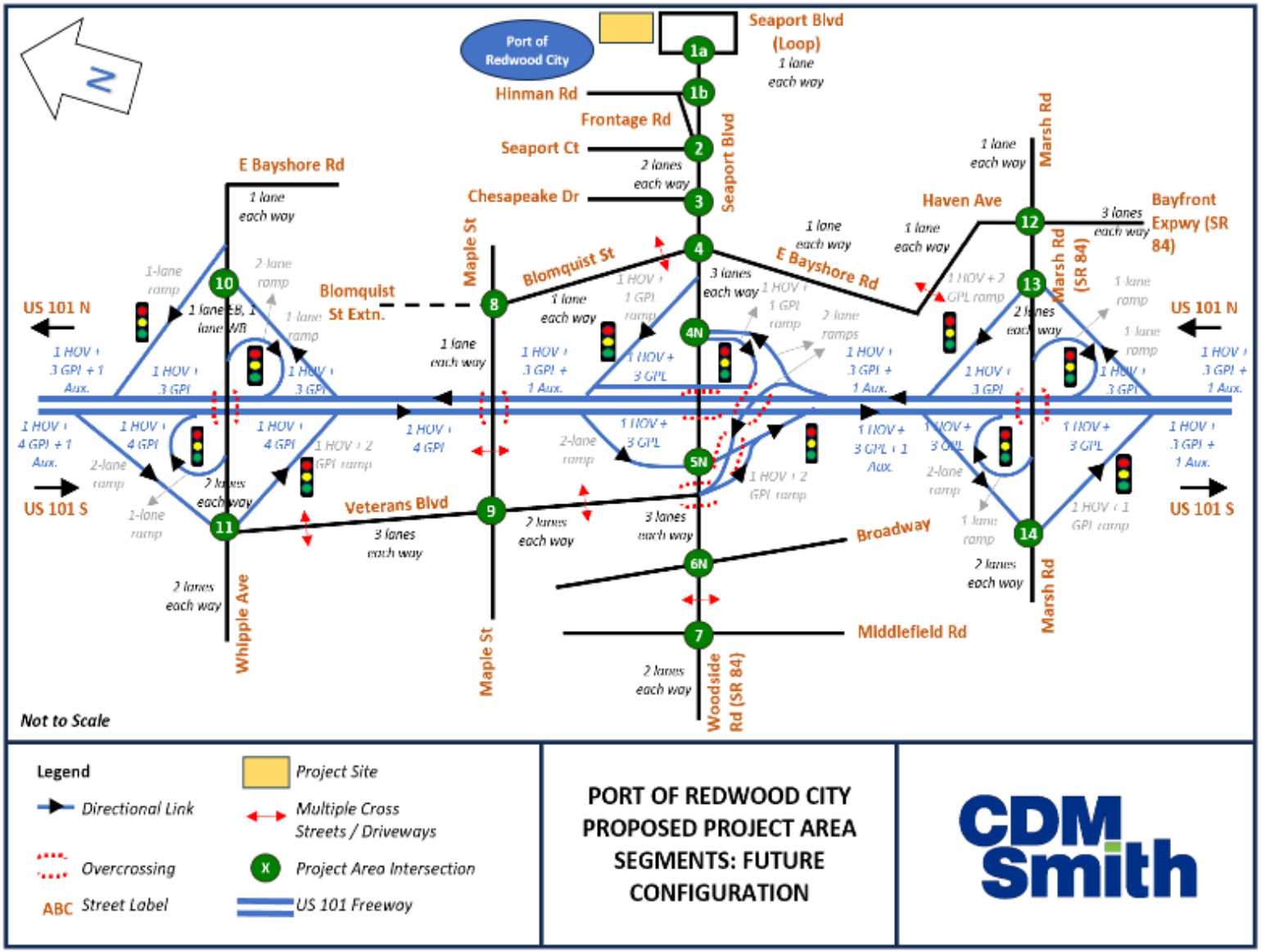
Figure A2.1 and **Figure A2.2** show the existing (2023) and cumulative (2040) no project configurations of the project area segments analyzed in this transportation study. The effects of the US 101 / SR 84 Interchange Improvement Project on the lane capacity of SR 84 (Woodside Road) and US 101 ramps are visualized. The configuration changes led to a re-assignment of traffic flows on SR 84 (Woodside Road) and its ramp connections to US 101.

Attachment 2 has diagrams showing existing and future cumulative roadway configurations that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.



Key: HOV = High Occupancy Lane, GPL = General Purpose Lane, Aux. = Auxiliary Lane, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Figure A2.1 Existing (2023) Configurations of Project Area Roadway Segments



Key: HOV = High Occupancy Lane, GPL = General Purpose Lane, Aux. = Auxiliary Lane, NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound

Figure A2.2 Cumulative (2040) No Project Configurations of Project Area Roadway Segments

Attachment 3 – Raw TMCs and ADTs

Attachment 3 includes the raw TMCs collected from various sources and dates as shown in **Table A3.1**. The data sheets include turning movement counts and weekday AM and PM peak hour turning movement volume diagrams. The data sheets also include the 5-day weekday raw ADT counts on Veterans Boulevard between Maple Street and Chestnut Street taken over 5 consecutive weekdays from the 12th to the 16th of February, 2024 (Monday-Friday). The data sheets include hourly distribution charts for daily segment counts.

Table A3.1 TMC Data Sources and Dates

Int. #	Intersection Name	Source	Date
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	New Field Traffic Count	2/13/2024
1b	Seaport Blvd and Hinman Rd	New Field Traffic Count	2/13/2024
2	Seaport Blvd and Seaport Ct	New Field Traffic Count	2/13/2024
3	Seaport Blvd and Chesapeake Dr	New Field Traffic Count	2/13/2024
4	Seaport Blvd and Blomquist St / E Bayshore Rd	New Field Traffic Count	2/13/2024
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Redwood City	9/10/2019 & 4/25/2017
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Redwood City	4/25/2017
7	SR 84 (Woodside Rd) and Middlefield Rd	Redwood City	1/31/2018
8	Maple St and Blomquist St	Redwood City	9/10/2019
9	Maple St and Veterans Blvd	Redwood City	9/10/2019
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Redwood City	9/10/2019 & 4/25/2017
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Redwood City	9/10/2019
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Menlo Park	12/15/2022
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Menlo Park	12/15/2022
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Menlo Park	12/15/2022

Key: Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, SR = State Route, St = Street, NB = Northbound, SB = Southbound, E = East

Attachment 3 has diagrams showing turning movement counts and volumes for study area intersections that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

Prepared by National Data & Surveying Services

Seaport Blvd & Hinman Rd/Seaport Blvd E/W

Peak Hour Turning Movement Count

ID: 24-080041-001
City: Redwood City

Day: Tuesday
Date: 2/13/2024

SOUTHBOUND

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

PM						PM
	0	0	0	0	0	

EASTBOUND — Hinman Rd/Seaport Blvd E/W

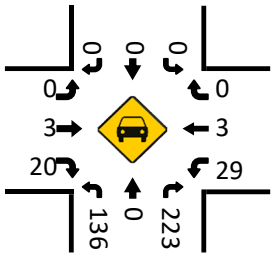
WESTBOUND — Hinman Rd/Seaport Blvd E/

CONTROL			
3-Way Stop(NB/EB/WB)			
TEV	200 AM	0 NOON	499 PM
PHF	0.76		0.68

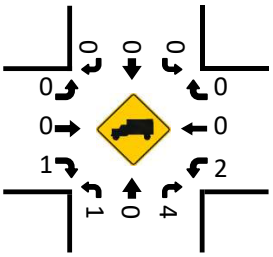
0 ↰ 231 | 0 | 25

NORTHBOUND

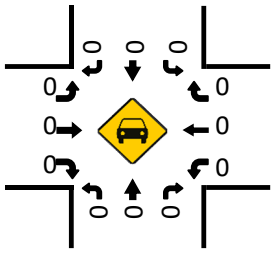
Cars (AM)



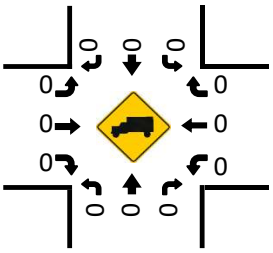
HT (AM)



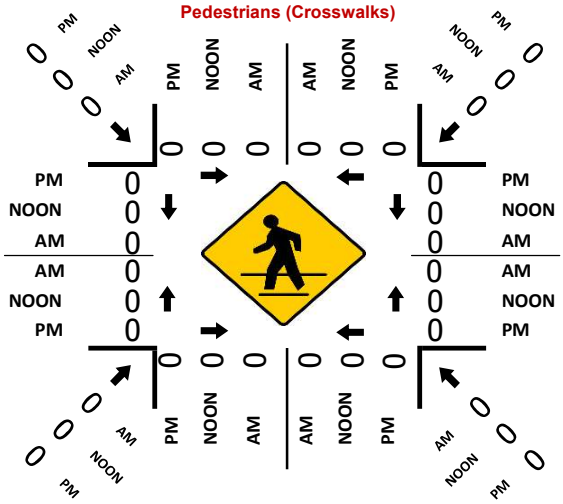
Cars (NOON)



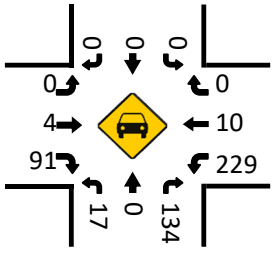
HT (NOON)



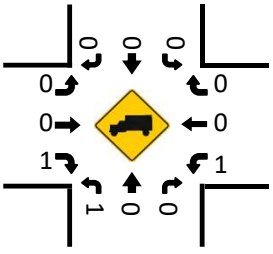
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Seaport Blvd & Hinman Rd/Seaport Blvd E/W
City: Redwood City
Control: 3-Way Stop(NB/EB/WB)

Project ID: 24-080041-001
Date: 2/13/2024

Data - Total

NS/EW Streets:	Seaport Blvd					Seaport Blvd				Hinman Rd/Seaport Blvd E/W					Hinman Rd/Seaport Blvd E/W						
AM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND					EASTBOUND2	
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NL2	SL	ST	SR	SU	EL	ET	ER	EU	EU2	WL	WT	WR	WU	WT2	E2R2	TOTAL
7:00 AM	4	0	15	0	10	0	0	0	0	0	0	2	0	0	5	2	0	0	0	0	38
7:15 AM	14	0	15	0	5	0	0	0	0	0	1	3	0	0	4	1	0	0	0	0	43
7:30 AM	22	0	35	0	4	0	0	0	0	0	0	2	0	0	8	1	0	0	1	0	73
7:45 AM	17	0	36	0	3	0	0	0	0	0	0	3	0	0	8	2	0	0	0	0	69
8:00 AM	16	0	41	0	1	0	0	0	0	0	2	4	0	0	4	1	0	0	0	0	69
8:15 AM	31	0	49	0	3	0	0	0	0	0	1	6	0	0	11	0	0	0	0	0	101
8:30 AM	42	0	62	0	8	0	0	0	0	0	0	8	0	1	8	1	0	0	0	0	130
8:45 AM	55	0	75	0	6	0	0	0	0	0	0	10	0	0	8	1	0	0	0	0	155
	NL	NT	NR	NU	NL2	SL	ST	SR	SU	EL	ET	ER	EU	EU2	WL	WT	WR	WU	WT2	E2R2	TOTAL
TOTAL VOLUMES :	201	0	328	0	40	0	0	0	0	0	4	38	0	1	56	9	0	0	1	0	678
APPROACH %'s :	35.33%	0.00%	57.64%	0.00%	7.03%					0.00%	9.30%	88.37%	0.00%	2.33%	84.85%	13.64%	0.00%	0.00%	1.52%		
PEAK HR :	07:00 AM - 08:00 AM																				TOTAL
PEAK HR VOL :	57	0	101	0	22	0	0	0	0	0	1	10	0	0	25	6	0	0	1	0	223
PEAK HR FACTOR :	0.648	0.000	0.701	0.000	0.550	0.000	0.000	0.000	0.000	0.000	0.250	0.833	0.000	0.000	0.781	0.750	0.000	0.000	0.250	0.000	0.764
			0.738									0.688					0.800				

PM	NORTHBOUND					SOUTHBOUND				EASTBOUND					WESTBOUND						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NL2	SL	ST	SR	SU	EL	ET	ER	EU	EU2	WL	WT	WR	WU	WT2	E2R2	TOTAL
4:00 PM	4	0	41	0	1	0	0	0	0	0	0	18	0	0	53	3	0	0	0	0	120
4:15 PM	8	0	64	0	0	0	0	0	0	0	1	25	0	0	86	1	0	0	0	0	185
4:30 PM	6	0	14	1	0	0	0	0	0	0	0	27	0	0	52	2	0	0	0	0	102
4:45 PM	5	0	15	1	2	0	0	0	0	0	3	25	0	0	40	4	0	0	2	0	97
5:00 PM	7	0	9	0	3	0	0	0	0	0	1	51	0	0	48	4	0	0	0	0	123
5:15 PM	11	0	13	1	0	0	0	0	0	0	0	51	0	0	45	1	0	0	0	1	123
5:30 PM	6	0	9	0	3	0	0	0	0	0	4	48	0	0	37	3	0	0	0	0	110
5:45 PM	5	0	16	0	1	0	0	0	0	0	1	40	0	0	26	0	0	0	0	0	89
	NL	NT	NR	NU	NL2	SL	ST	SR	SU	EL	ET	ER	EU	EU2	WL	WT	WR	WU	WT2	E2R2	TOTAL
TOTAL VOLUMES :	52	0	181	3	10	0	0	0	0	0	10	285	0	0	387	18	0	0	2	1	949
APPROACH %'s :	21.14%	0.00%	73.58%	1.22%	4.07%					0.00%	3.39%	96.61%	0.00%	0.00%	95.09%	4.42%	0.00%	0.00%	0.49%	100.00%	
PEAK HR :	04:00 PM - 05:00 PM																				TOTAL
PEAK HR VOL :	23	0	134	2	3	0	0	0	0	0	4	95	0	0	231	10	0	0	2	0	504
PEAK HR FACTOR :	0.719	0.000	0.523	0.500	0.375	0.000	0.000	0.000	0.000	0.000	0.333	0.880	0.000	0.000	0.672	0.625	0.000	0.000	0.250	0.000	0.681
			0.563									0.884					0.698				

National Data & Surveying Services

Intersection Turning Movement Count

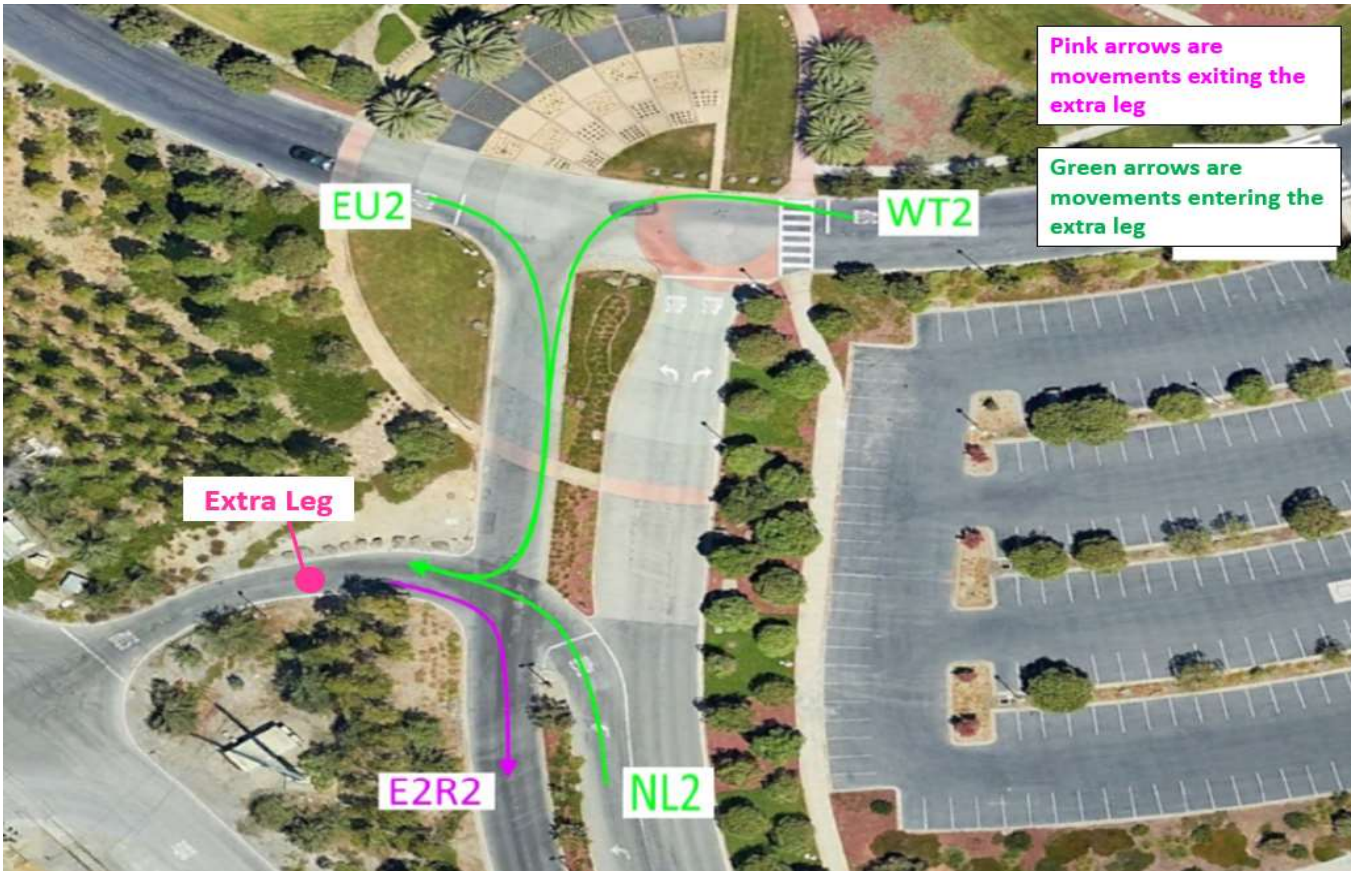
Explanation for extra leg movements

Movement entering the extra leg

NL2	Movements coming from NB on Seaport Blvd entering into the extra leg
WT2	Movements coming from WB on Seaport Blvd E/W entering into the extra leg
EU2	Movements coming from EB on Seaport Blvd E/W entering into the extra leg

Movements exiting the extra leg

E2R2	Movements exiting from extra leg entering into Seaport Blvd SB



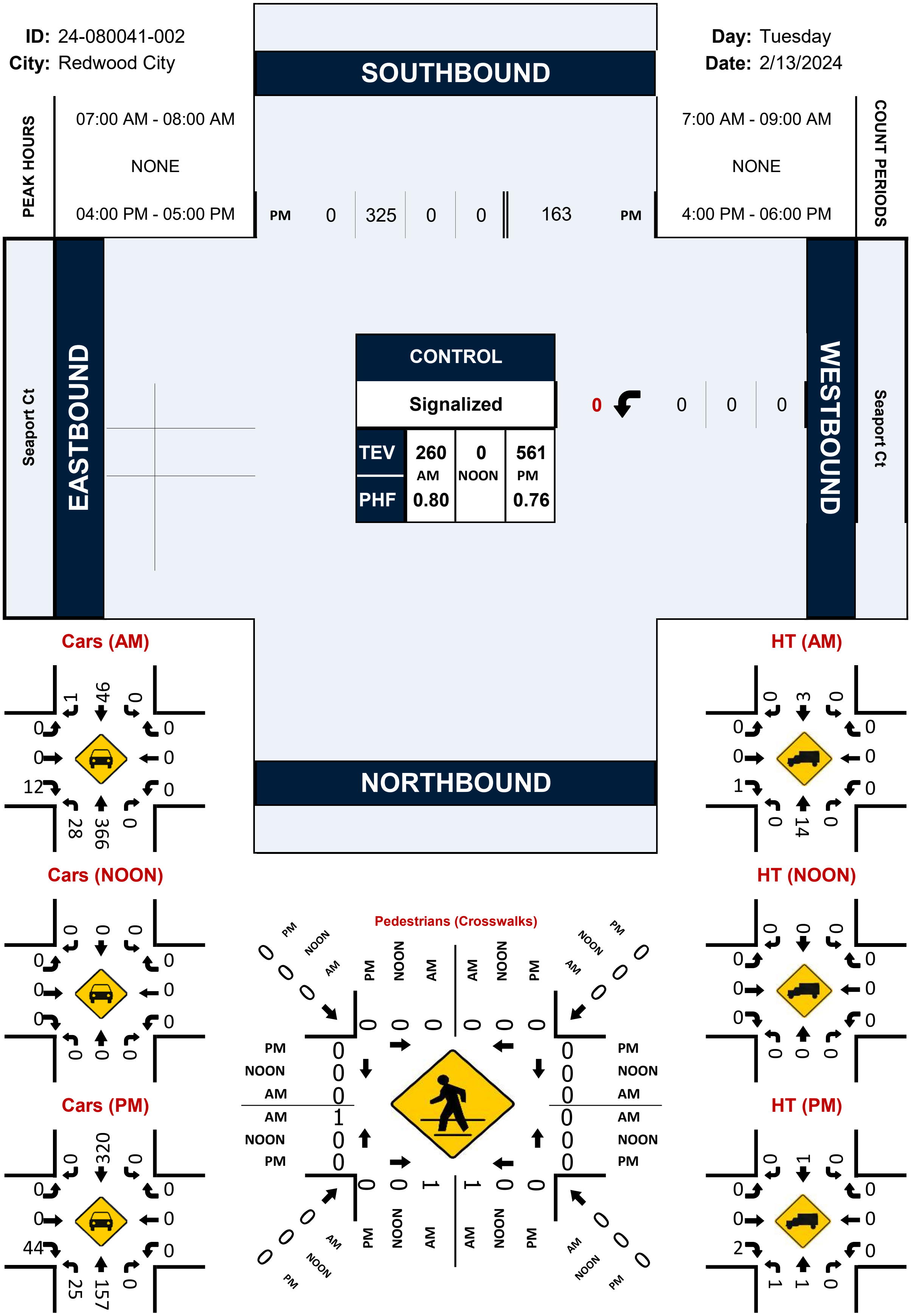
Prepared by National Data & Surveying Services

Seaport Blvd/Frontage Rd & Seaport Ct

Peak Hour Turning Movement Count

ID: 24-080041-002
City: Redwood City

Day: Tuesday
Date: 2/13/2024



National Data & Surveying Services

Intersection Turning Movement Count

Location: Seaport Blvd/Frontage Rd & Seaport Ct
City: Redwood City
Control: Signalized

Project ID: 24-080041-002
Date: 2/13/2024

Data - Total

NS/EW Streets:	Seaport Blvd/Frontage Rd					Seaport Blvd/Frontage Rd					Seaport Ct					Seaport Ct						
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				SOUTHBOUND2			
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	S2T2	S2R2	S2U2	TOTAL
7:00 AM	6	29	0	0	2	0	6	0	0	0	0	0	2	0	0	0	0	0	0	12	0	0	57
7:15 AM	8	34	0	0	6	0	5	0	0	0	0	0	2	0	0	0	0	0	0	15	0	0	70
7:30 AM	6	66	0	0	7	0	12	0	0	1	0	0	2	0	1	0	0	0	0	7	1	0	103
7:45 AM	13	55	0	0	7	0	11	0	0	0	0	0	3	0	0	0	0	0	0	12	0	0	101
8:00 AM	4	54	0	0	2	0	8	0	0	0	0	0	5	0	0	0	0	0	0	8	0	0	81
8:15 AM	9	85	0	0	4	0	16	1	0	0	0	0	1	0	0	0	0	0	0	6	0	0	122
8:30 AM	7	111	0	0	3	0	16	0	0	0	0	0	6	0	0	0	0	0	0	10	0	0	153
8:45 AM	8	137	0	0	4	0	16	0	0	0	0	0	1	0	0	0	0	0	0	9	1	0	176
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	S2T2	S2R2	S2U2	TOTAL
TOTAL VOLUMES :	61	571	0	0	35	0	90	1	0	1	0	0	22	0	1	0	0	0	0	79	2	0	863
APPROACH %'s :	9.15%	85.61%	0.00%	0.00%	5.25%	0.00%	97.83%	1.09%	0.00%	1.09%	0.00%	0.00%	95.65%	0.00%	4.35%					97.53%	2.47%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																						TOTAL
PEAK HR VOL :	33	184	0	0	22	0	34	0	0	1	0	0	9	0	1	0	0	0	0	46	1	0	331
PEAK HR FACTOR :	0.635	0.697	0.000	0.000	0.786	0.000	0.708	0.000	0.000	0.250	0.000	0.000	0.750	0.000	0.250	0.000	0.000	0.000	0.000	0.767	0.250	0.000	0.803
			0.756					0.673					0.833										

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND						
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	S2T2	S2R2	S2U2	TOTAL
4:00 PM	9	56	0	0	4	0	64	0	0	0	0	0	7	0	1	0	0	0	0	11	1	0	153
4:15 PM	6	62	0	1	2	0	109	0	0	0	0	0	14	0	0	0	0	0	0	12	0	0	206
4:30 PM	5	23	0	0	0	0	89	0	0	0	0	0	15	0	0	0	0	0	0	10	0	0	142
4:45 PM	6	22	0	0	7	0	63	0	0	0	0	0	10	0	0	0	0	0	0	14	1	0	123
5:00 PM	5	18	0	0	2	0	88	0	0	0	0	0	7	0	0	0	0	0	0	9	1	0	130
5:15 PM	2	25	0	0	0	0	112	0	0	0	0	0	10	0	0	0	0	0	0	7	0	1	157
5:30 PM	3	17	0	0	1	0	78	0	0	0	0	0	5	0	0	0	0	0	0	6	0	0	110
5:45 PM	4	23	0	0	2	0	70	1	0	0	0	0	10	0	1	0	0	0	0	3	0	0	114
	NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	S2T2	S2R2	S2U2	TOTAL
TOTAL VOLUMES :	40	246	0	1	18	0	673	1	0	0	0	0	78	0	2	0	0	0	0	72	3	1	1135
APPROACH %'s :	13.11%	80.66%	0.00%	0.33%	5.90%	0.00%	99.85%	0.15%	0.00%	0.00%	0.00%	0.00%	97.50%	0.00%	2.50%					94.74%	3.95%	1.32%	
PEAK HR :	04:00 PM - 05:00 PM																						TOTAL
PEAK HR VOL :	26	163	0	1	13	0	325	0	0	0	0	0	46	0	1	0	0	0	0	47	2	0	624
PEAK HR FACTOR :	0.722	0.657	0.000	0.250	0.464	0.000	0.745	0.000	0.000	0.000	0.000	0.000	0.767	0.000	0.250	0.000	0.000	0.000	0.000	0.839	0.500	0.000	0.757
			0.715					0.745					0.783										

National Data & Surveying Services

Intersection Turning Movement Count

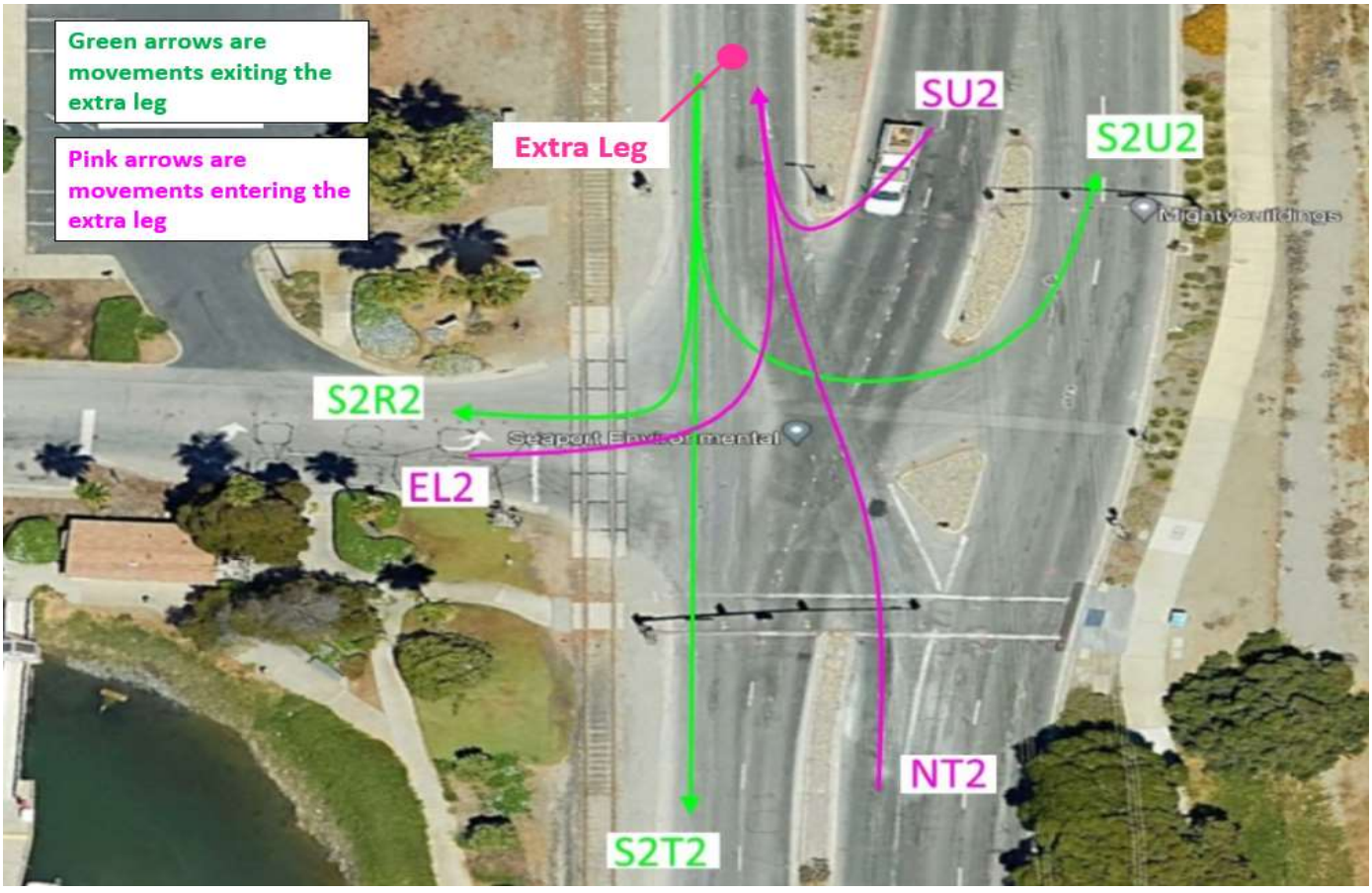
Explanation for extra leg movements

Movement entering the extra leg

NT2	Movements coming from NB on Seaport Blvd entering into the extra leg
SU2	Movements coming from SB on Seaport Blvd entering into the extra leg
EL2	Movements coming from EB on Seaport Ct entering into the extra leg

Movements exiting the extra leg

S2T2	Movements exiting from extra leg entering into Seaport Blvd SB
S2R2	Movements exiting from extra leg entering into Seaport Ct WB
S2U2	Movements exiting from extra leg entering into Seaport Blvd NB



Prepared by National Data & Surveying Services

Seaport Blvd & Chesapeake Dr

Peak Hour Turning Movement Count

ID: 24-080041-003
City: Redwood City

Day: Tuesday
Date: 2/13/2024

PEAK HOURS

07:00 AM - 08:00 AM

NONE

04:00 PM - 05:00 PM

COUNT PERIODS

7:00 AM - 09:00 AM

NONE

4:00 PM - 06:00 PM

SOUTHBOUND

PM	4	413	0	0	202	PM

EASTBOUND (Chesapeake Dr)

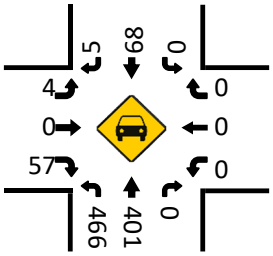
WESTBOUND (Chesapeake Dr)

CONTROL			
Signalized			
TEV	724 AM	0 NOON	1162 PM
PHF	0.88		0.85

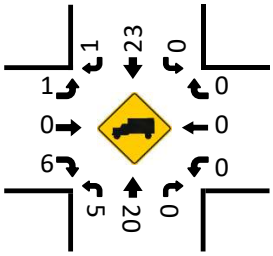
0 | 0 | 0 | 0

NORTHBOUND

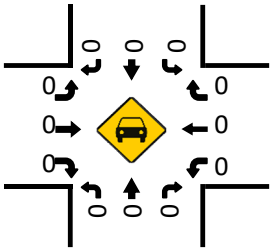
Cars (AM)



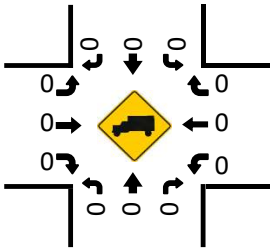
HT (AM)



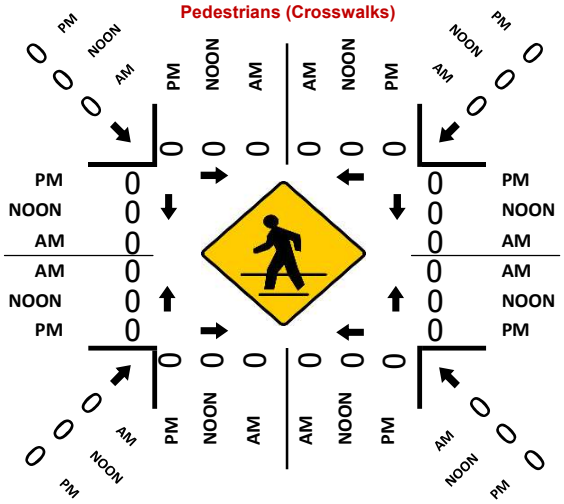
Cars (NOON)



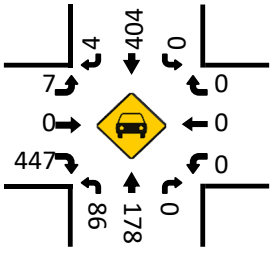
HT (NOON)



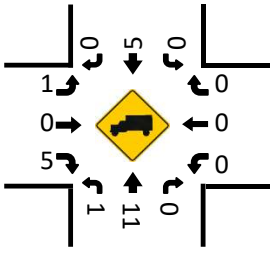
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Seaport Blvd & Chesapeake Dr
City: Redwood City
Control: Signalized

Project ID: 24-080041-003
Date: 2/13/2024

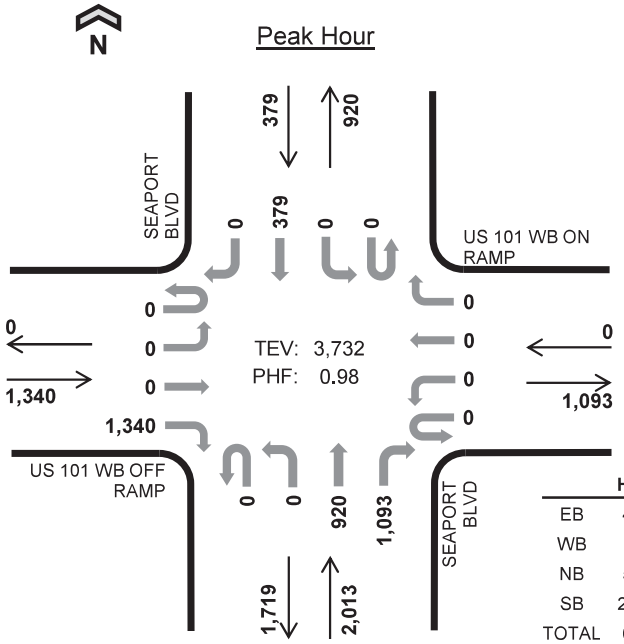
Data - Total

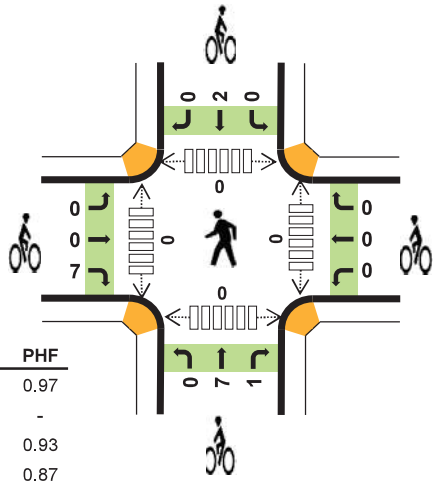
NS/EW Streets:	Seaport Blvd				Seaport Blvd				Chesapeake Dr				Chesapeake Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	88	37	0	0	0	18	0	0	0	0	11	0	0	0	0	0	154
7:15 AM	78	48	0	0	0	25	0	0	0	0	25	0	0	0	0	0	176
7:30 AM	72	80	0	0	0	20	0	0	0	0	17	0	0	0	0	0	189
7:45 AM	92	74	0	0	0	22	1	0	0	0	16	0	0	0	0	0	205
8:00 AM	91	61	0	0	0	22	2	0	0	0	11	0	0	0	0	0	187
8:15 AM	150	95	0	0	0	21	2	0	2	0	19	0	0	0	0	0	289
8:30 AM	113	120	0	0	0	30	2	0	1	0	22	0	0	0	0	0	288
8:45 AM	119	152	0	0	0	25	0	0	2	0	14	0	0	0	0	0	312
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	803	667	0	0	0	183	7	0	5	0	135	0	0	0	0	0	1800
APPROACH %'s :	54.63%	45.37%	0.00%	0.00%	0.00%	96.32%	3.68%	0.00%	3.57%	0.00%	96.43%	0.00%					
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	330	239	0	0	0	85	1	0	0	0	69	0	0	0	0	0	724
PEAK HR FACTOR :	0.897	0.747	0.000	0.000	0.000	0.850	0.250	0.000	0.000	0.000	0.690	0.000	0.000	0.000	0.000	0.000	0.883
		0.857				0.860				0.690							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	28	65	0	0	0	77	0	0	3	0	140	0	0	0	0	0	313
4:15 PM	30	70	0	0	0	139	2	0	3	0	96	0	0	0	0	0	340
4:30 PM	21	24	0	0	0	111	0	0	2	0	126	0	0	0	0	0	284
4:45 PM	10	35	0	0	0	86	2	0	0	0	92	0	0	0	0	0	225
5:00 PM	9	22	0	0	0	103	1	0	2	0	90	0	0	0	0	0	227
5:15 PM	15	28	0	0	0	126	1	0	0	0	91	0	0	0	0	0	261
5:30 PM	8	19	0	0	0	88	2	0	2	0	95	0	0	0	0	0	214
5:45 PM	17	29	0	0	0	87	0	0	0	0	51	0	0	0	0	0	184
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	138	292	0	0	0	817	8	0	12	0	781	0	0	0	0	0	2048
APPROACH %'s :	32.09%	67.91%	0.00%	0.00%	0.00%	99.03%	0.97%	0.00%	1.51%	0.00%	98.49%	0.00%					
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	89	194	0	0	0	413	4	0	8	0	454	0	0	0	0	0	1162
PEAK HR FACTOR :	0.742	0.693	0.000	0.000	0.000	0.743	0.500	0.000	0.667	0.000	0.811	0.000	0.000	0.000	0.000	0.000	0.854
		0.708				0.739				0.808							

SEAPORT BLVD
US 101 WB OFF RAMP

Date: 04/25/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	4.7%	0.97
WB	-	-
NB	5.4%	0.93
SB	21.6%	0.87
TOTAL	6.8%	0.98

Two-Hour Count Summaries

Interval Start	US 101 WB OFF RAMP Eastbound				US 101 WB ON RAMP Westbound				SEAPORT BLVD Northbound				SEAPORT 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	0	0	298	0	0	0	0	0	0	147	274	0	0	96	0	815	0
7:15 AM	0	0	0	348	0	0	0	0	0	0	154	271	0	0	84	0	857	0
7:30 AM	0	0	0	346	0	0	0	0	0	0	146	334	0	0	121	0	947	0
7:45 AM	**0**	**0**	**0**	**346**	**0**	**0**	**0**	**0**	**0**	**0**	**204**	**285**	**0**	**0**	**109**	**0**	**944**	3,563
8:00 AM	**0**	**0**	**0**	**338**	**0**	**0**	**0**	**0**	**0**	**0**	**216**	**286**	**0**	**0**	**103**	**0**	**943**	3,691
8:15 AM	**0**	**0**	**0**	**340**	**0**	**0**	**0**	**0**	**0**	**0**	**220**	**260**	**0**	**0**	**73**	**0**	**893**	3,727
8:30 AM	**0**	**0**	**0**	**316**	**0**	**0**	**0**	**0**	**0**	**0**	**280**	**262**	**0**	**0**	**94**	**0**	**952**	**3,732**
8:45 AM	0	0	0	303	0	0	0	0	0	0	303	246	0	0	42	0	894	3,682
Count Total	0	0	0	2,635	0	0	0	0	0	0	1,670	2,218	0	0	722	0	7,245	0
Peak Hour All	**0**	**0**	**0**	**1,340**	**0**	**0**	**0**	**0**	**0**	**0**	**920**	**1,093**	**0**	**0**	**379**	**0**	**3,732**	**0**
Peak Hour HV	**0**	**0**	**0**	**63**	**0**	**0**	**0**	**0**	**0**	**0**	**64**	**45**	**0**	**0**	**82**	**0**	**254**	**0**
Peak Hour HV%	**-**	**-**	**-**	**5%**	**-**	**-**	**-**	**-**	**-**	**-**	**7%**	**4%**	**-**	**-**	**22%**	**-**	**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	7	0	26	16	*49*	2	0	1	0	*3*	0	0	0	0	*0*
7:15 AM	16	0	26	21	*63*	0	0	2	0	*2*	0	0	0	0	*0*
7:30 AM	22	0	27	37	*86*	1	0	0	0	*1*	0	0	0	0	*0*
7:45 AM	**22**	**0**	**27**	**28**	***77***	**2**	**0**	**3**	**0**	***5***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**14**	**0**	**29**	**19**	***62***	**1**	**0**	**2**	**1**	***4***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**17**	**0**	**33**	**20**	***70***	**2**	**0**	**1**	**1**	***4***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**10**	**0**	**20**	**15**	***45***	**2**	**0**	**2**	**0**	***4***	**0**	**0**	**0**	**0**	***0***
8:45 AM	13	0	36	9	*58*	2	0	2	0	*4*	0	0	0	0	*0*
Count Total	121	0	224	165	*510*	12	0	13	2	*27*	0	0	0	0	*0*
Peak Hour	**63**	**0**	**109**	**82**	***254***	**7**	**0**	**8**	**2**	***17***	**0**	**0**	**0**	**0**	***0***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US 101 WB OFF RAMP				US 101 WB ON RAMP				SEAPORT BLVD				SEAPORT 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	7	0	0	0	0	0	0	12	14	0	0	16	0	49	0
7:15 AM	0	0	0	16	0	0	0	0	0	0	16	10	0	0	21	0	63	0
7:30 AM	0	0	0	22	0	0	0	0	0	0	17	10	0	0	37	0	86	0
7:45 AM	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**13**	**0**	**0**	**28**	**0**	**77**	275
8:00 AM	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**13**	**0**	**0**	**19**	**0**	**62**	288
8:15 AM	**0**	**0**	**0**	**17**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**13**	**0**	**0**	**20**	**0**	**70**	295
8:30 AM	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**6**	**0**	**0**	**15**	**0**	**45**	**254**
8:45 AM	0	0	0	13	0	0	0	0	0	0	25	11	0	0	9	0	58	235
Count Total	0	0	0	121	0	0	0	0	0	0	134	90	0	0	165	0	510	0
Peak Hour	**0**	**0**	**0**	**63**	**0**	**0**	**0**	**0**	**0**	**0**	**64**	**45**	**0**	**0**	**82**	**0**	**254**	**0**

Two-Hour Count Summaries - Bikes

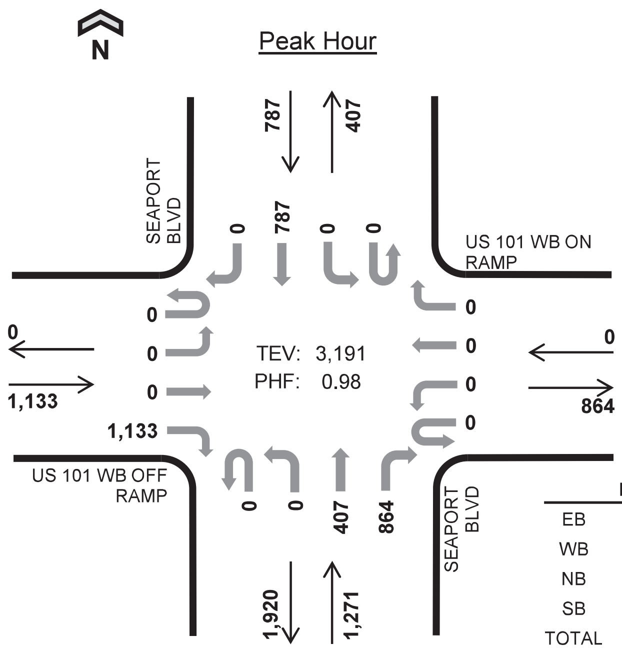
Interval Start	US 101 WB OFF RAMP			US 101 WB ON RAMP			SEAPORT BLVD			SEAPORT BLVD			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	2	0	0	0	0	1	0	0	0	0	3	0
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2	0
7:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**5**	11
8:00 AM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**4**	12
8:15 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**4**	14
8:30 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	**17**
8:45 AM	0	0	2	0	0	0	0	1	1	0	0	0	4	16
Count Total	0	0	12	0	0	0	0	11	2	0	2	0	27	0
Peak Hour	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**7**	**1**	**0**	**2**	**0**	**17**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

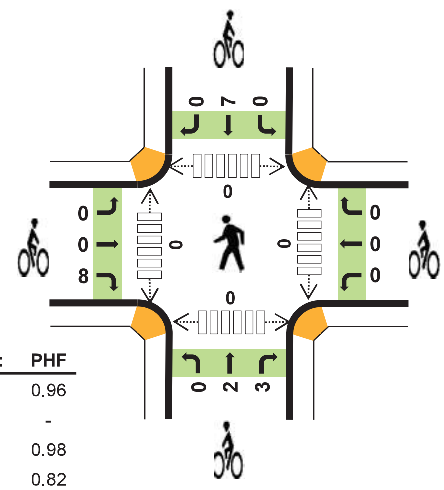
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

SEAPORT BLVD
US 101 WB OFF RAMP

Date: 04/25/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	1.9%	0.96
WB	-	-
NB	3.8%	0.98
SB	1.5%	0.82
TOTAL	2.5%	0.98



Two-Hour Count Summaries

Interval Start	US 101 WB OFF RAMP				US 101 WB ON RAMP				SEAPORT BLVD				SEAPORT 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	242	0	0	0	0	0	0	113	256	0	0	191	0	802	0
4:15 PM	**0**	**0**	**0**	**294**	**0**	**0**	**0**	**0**	**0**	**0**	**82**	**242**	**0**	**0**	**174**	**0**	**792**	0
4:30 PM	**0**	**0**	**0**	**289**	**0**	**0**	**0**	**0**	**0**	**0**	**109**	**204**	**0**	**0**	**178**	**0**	**780**	0
4:45 PM	**0**	**0**	**0**	**289**	**0**	**0**	**0**	**0**	**0**	**0**	**113**	**211**	**0**	**0**	**195**	**0**	**808**	3,182
5:00 PM	**0**	**0**	**0**	**261**	**0**	**0**	**0**	**0**	**0**	**0**	**103**	**207**	**0**	**0**	**240**	**0**	**811**	**3,191**
5:15 PM	0	0	0	278	0	0	0	0	0	0	85	169	0	0	198	0	730	3,129
5:30 PM	0	0	0	299	0	0	0	0	0	0	91	133	0	0	160	0	683	3,032
5:45 PM	0	0	0	313	0	0	0	0	0	0	72	136	0	0	165	0	686	2,910
Count Total	0	0	0	2,265	0	0	0	0	0	0	768	1,558	0	0	1,501	0	6,092	0
Peak Hour All	**0**	**0**	**0**	**1,133**	**0**	**0**	**0**	**0**	**0**	**0**	**407**	**864**	**0**	**0**	**787**	**0**	**3,191**	**0**
Peak Hour HV	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**26**	**22**	**0**	**0**	**12**	**0**	**81**	**0**
Peak Hour HV%	**-**	**-**	**-**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**6%**	**3%**	**-**	**-**	**2%**	**-**	**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	3	0	19	2	*24*	1	0	1	0	*2*	0	0	0	0	*0*
4:15 PM	**5**	**0**	**10**	**3**	***18***	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**6**	**0**	**13**	**2**	***21***	**1**	**0**	**1**	**2**	***4***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**4**	**0**	**12**	**4**	***20***	**5**	**0**	**1**	**2**	***8***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**6**	**0**	**13**	**3**	***22***	**2**	**0**	**2**	**2**	***6***	**0**	**0**	**0**	**0**	***0***
5:15 PM	6	0	4	0	*10*	2	0	2	3	*7*	0	0	0	0	*0*
5:30 PM	1	0	7	0	*8*	2	0	3	1	*6*	0	0	0	0	*0*
5:45 PM	4	0	3	5	*12*	0	0	1	2	*3*	0	0	0	0	*0*
Count Total	35	0	81	19	*135*	13	0	12	13	*38*	0	0	0	0	*0*
Peak Hour	**21**	**0**	**48**	**12**	***81***	**8**	**0**	**5**	**7**	***20***	**0**	**0**	**0**	**0**	***0***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	US 101 WB OFF RAMP				US 101 WB ON RAMP				SEAPORT BLVD				SEAPORT 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	3	0	0	0	0	0	0	11	8	0	0	2	0	24	0
4:15 PM	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**5**	**0**	**0**	**3**	**0**	**18**	0
4:30 PM	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**7**	**0**	**0**	**2**	**0**	**21**	0
4:45 PM	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**5**	**0**	**0**	**4**	**0**	**20**	83
5:00 PM	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**5**	**0**	**0**	**3**	**0**	**22**	**81**
5:15 PM	0	0	0	6	0	0	0	0	0	0	1	3	0	0	0	0	10	73
5:30 PM	0	0	0	1	0	0	0	0	0	0	1	6	0	0	0	0	8	60
5:45 PM	0	0	0	4	0	0	0	0	0	0	1	2	0	0	5	0	12	52
Count Total	0	0	0	35	0	0	0	0	0	0	40	41	0	0	19	0	135	0
Peak Hour	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**26**	**22**	**0**	**0**	**12**	**0**	**81**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	US 101 WB OFF RAMP			US 101 WB ON RAMP			SEAPORT BLVD			SEAPORT 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	1	0	0	0	0	1	0	0	0	0	2	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**2**	0
4:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**4**	0
4:45 PM	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**8**	16
5:00 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**6**	**20**
5:15 PM	0	0	2	0	0	0	0	0	2	0	3	0	7	25
5:30 PM	0	0	2	0	0	0	0	1	2	0	1	0	6	27
5:45 PM	0	0	0	0	0	0	0	0	1	0	2	0	3	22
Count Total	0	0	13	0	0	0	0	4	8	0	13	0	38	0
Peak Hour	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**7**	**0**	**20**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Prepared by National Data & Surveying Services

Seaport Blvd & Blomquist St/E Bayshore Rd

Peak Hour Turning Movement Count

ID: 24-080041-004
City: Redwood City

Day: Tuesday
Date: 2/13/2024

PEAK HOURS	COUNT PERIODS
07:00 AM - 08:00 AM	7:00 AM - 09:00 AM
NONE	NONE
04:00 PM - 05:00 PM	4:00 PM - 06:00 PM

SOUTHBOUND — PM: 67 | 718 | 83 | 0 | 280 PM

EASTBOUND — Blomquist St/E Bayshore Rd

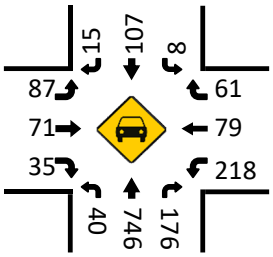
WESTBOUND — Blomquist St/E Bayshore R

NORTHBOUND

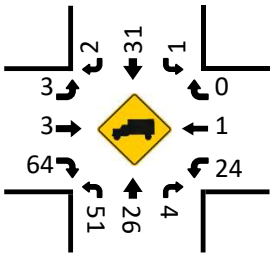
CONTROL			
Signalized			
TEV	1509 AM	0 NOON	1888 PM
PHF	0.85		0.90

0 | 165 | 0 | 303

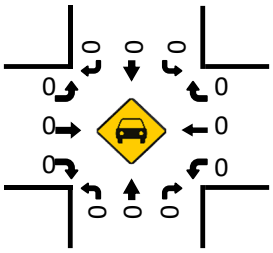
Cars (AM)



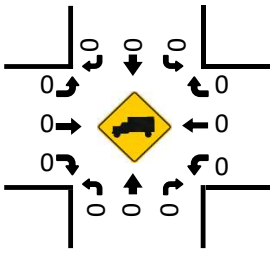
HT (AM)



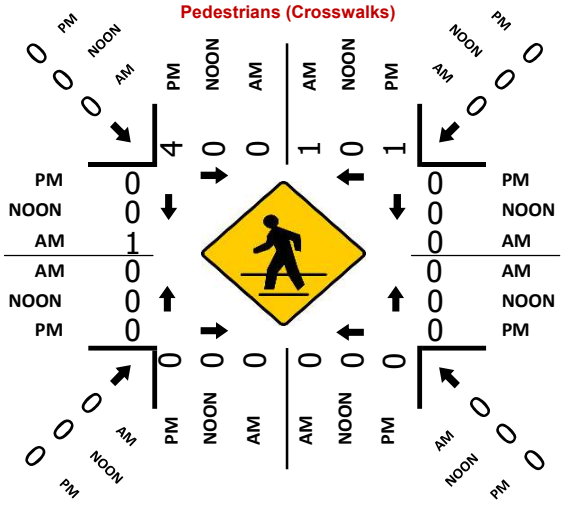
Cars (NOON)



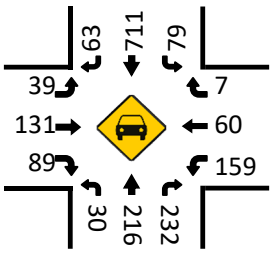
HT (NOON)



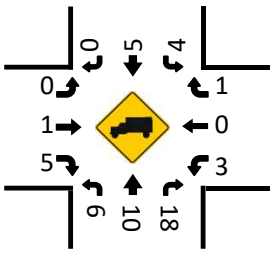
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Seaport Blvd & Blomquist St/E Bayshore Rd
City: Redwood City
Control: Signalized

Project ID: 24-080041-004
Date: 2/13/2024

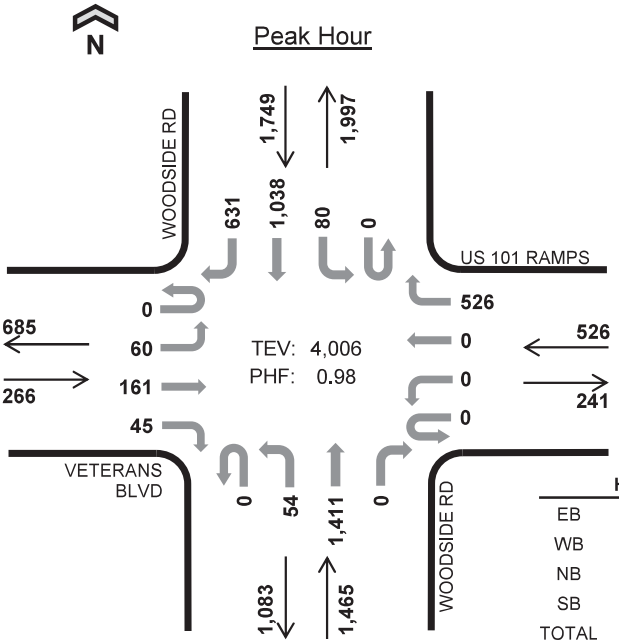
Data - Total

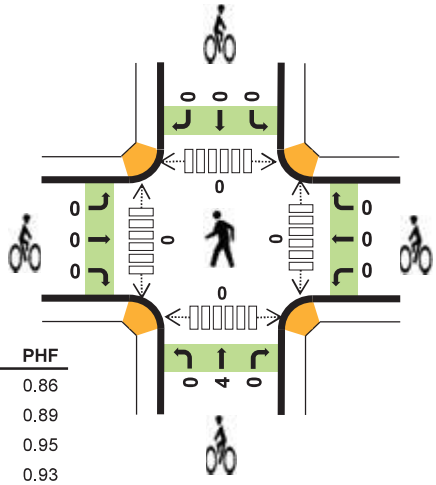
NS/EW Streets:	Seaport Blvd				Seaport Blvd				Blomquist St/E Bayshore Rd				Blomquist St/E Bayshore Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	108	48	0	0	23	5	0	11	5	30	0	55	10	5	0	315
7:15 AM	18	114	43	0	4	42	3	0	5	6	19	0	60	18	8	0	340
7:30 AM	26	139	42	0	1	33	3	0	9	10	18	0	96	26	9	0	412
7:45 AM	29	131	40	0	3	35	7	0	11	16	31	0	92	24	23	0	442
8:00 AM	18	152	40	0	3	31	2	0	12	10	26	0	63	23	10	0	390
8:15 AM	33	183	47	0	1	27	7	1	30	14	25	0	64	28	16	0	476
8:30 AM	20	214	49	0	1	50	9	0	25	28	25	0	54	16	20	0	511
8:45 AM	20	226	46	0	4	34	5	0	29	22	23	0	61	14	15	0	499
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	179	1267	355	0	17	275	41	1	132	111	197	0	545	159	106	0	3385
APPROACH %'s :	9.94%	70.35%	19.71%	0.00%	5.09%	82.34%	12.28%	0.30%	30.00%	25.23%	44.77%	0.00%	67.28%	19.63%	13.09%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	88	492	173	0	8	133	18	0	36	37	98	0	303	78	45	0	1509
PEAK HR FACTOR :	0.759	0.885	0.901	0.000	0.500	0.792	0.643	0.000	0.818	0.578	0.790	0.000	0.789	0.750	0.489	0.000	0.854
		0.909				0.811				0.737				0.766			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	15	76	67	1	33	164	16	0	9	42	35	0	49	16	3	0	526
4:15 PM	7	87	63	0	15	214	14	0	13	19	26	0	34	14	1	0	507
4:30 PM	8	34	66	0	17	205	22	0	13	40	19	0	36	15	3	0	478
4:45 PM	6	32	54	1	18	135	15	0	8	31	14	0	46	16	1	0	377
5:00 PM	10	21	71	0	17	169	11	0	7	27	16	0	61	15	0	0	425
5:15 PM	7	30	76	0	19	173	16	0	11	27	15	0	42	19	3	0	438
5:30 PM	7	23	55	0	19	165	20	0	5	19	17	0	53	12	3	0	398
5:45 PM	4	28	61	0	13	96	10	0	13	29	17	0	62	18	2	0	353
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	64	331	513	2	151	1321	124	0	79	234	159	0	383	125	16	0	3502
APPROACH %'s :	7.03%	36.37%	56.37%	0.22%	9.46%	82.77%	7.77%	0.00%	16.74%	49.58%	33.69%	0.00%	73.09%	23.85%	3.05%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	36	229	250	2	83	718	67	0	43	132	94	0	165	61	8	0	1888
PEAK HR FACTOR :	0.600	0.658	0.933	0.500	0.629	0.839	0.761	0.000	0.827	0.786	0.671	0.000	0.842	0.953	0.667	0.000	0.897
		0.813				0.889				0.782				0.860			

WOODSIDE RD
VETERANS BLVD

Date: 04/25/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	6.0%	0.86
WB	8.7%	0.89
NB	4.2%	0.95
SB	8.3%	0.93
TOTAL	6.7%	0.98

Two-Hour Count Summaries

Interval Start	VETERANS BLVD Eastbound				US 101 RAMPS Westbound				WOODSIDE RD Northbound				WOODSIDE RD 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	8	38	13	0	0	0	95	0	15	309	0	0	45	257	113	893	0
7:15 AM	0	15	38	7	0	0	0	92	0	6	310	0	0	29	271	122	890	0
7:30 AM	0	11	50	6	0	0	0	80	0	13	348	0	0	31	283	139	961	0
7:45 AM	**0**	**12**	**30**	**10**	**0**	**0**	**0**	**118**	**0**	**12**	**365**	**0**	**0**	**25**	**290**	**155**	**1,017**	3,761
8:00 AM	**0**	**14**	**41**	**12**	**0**	**0**	**0**	**119**	**0**	**11**	**358**	**0**	**0**	**15**	**282**	**153**	**1,005**	3,873
8:15 AM	**0**	**15**	**49**	**13**	**0**	**0**	**0**	**141**	**0**	**17**	**315**	**0**	**0**	**22**	**243**	**163**	**978**	3,961
8:30 AM	**0**	**19**	**41**	**10**	**0**	**0**	**0**	**148**	**0**	**14**	**373**	**0**	**0**	**18**	**223**	**160**	**1,006**	**4,006**
8:45 AM	0	17	59	14	0	0	0	170	0	27	354	1	0	12	196	144	994	3,983
Count Total	0	111	346	85	0	0	0	963	0	115	2,732	1	0	197	2,045	1,149	7,744	0
Peak Hour All	**0**	**60**	**161**	**45**	**0**	**0**	**0**	**526**	**0**	**54**	**1,411**	**0**	**0**	**80**	**1,038**	**631**	**4,006**	**0**
Peak Hour HV	**0**	**6**	**4**	**6**	**0**	**0**	**0**	**46**	**0**	**1**	**61**	**0**	**0**	**34**	**103**	**8**	**269**	**0**
Peak Hour HV%	**-**	**10%**	**2%**	**13%**	**-**	**-**	**-**	**9%**	**-**	**2%**	**4%**	**-**	**-**	**43%**	**10%**	**1%**	**7%**	**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	2	9	18	27	*56*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	6	15	13	43	*77*	0	0	1	3	*4*	0	0	0	0	*0*
7:30 AM	2	11	23	52	*88*	0	0	0	0	*0*	0	1	0	0	*1*
7:45 AM	**3**	**12**	**18**	**46**	***79***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**3**	**10**	**17**	**34**	***64***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**8**	**13**	**16**	**36**	***73***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**2**	**11**	**11**	**29**	***53***	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***
8:45 AM	4	18	20	22	*64*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	30	99	136	289	*554*	0	0	5	3	*8*	0	1	0	0	*1*
Peak Hour	**16**	**46**	**62**	**145**	***269***	**0**	**0**	**4**	**0**	***4***	**0**	**0**	**0**	**0**	***0***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	VETERANS BLVD Eastbound				US 101 RAMPS Westbound				WOODSIDE RD Northbound				WOODSIDE RD 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	1	0	0	0	0	9	0	0	18	0	0	13	12	2	56	0
7:15 AM	0	2	1	3	0	0	0	15	0	0	13	0	0	16	23	4	77	0
7:30 AM	0	0	1	1	0	0	0	11	0	0	23	0	0	20	28	4	88	0
7:45 AM	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**12**	**0**	**0**	**18**	**0**	**0**	**11**	**33**	**2**	**79**	300
8:00 AM	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**10**	**0**	**1**	**16**	**0**	**0**	**8**	**25**	**1**	**64**	308
8:15 AM	**0**	**2**	**3**	**3**	**0**	**0**	**0**	**13**	**0**	**0**	**16**	**0**	**0**	**9**	**23**	**4**	**73**	304
8:30 AM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**0**	**11**	**0**	**0**	**6**	**22**	**1**	**53**	**269**
8:45 AM	0	0	4	0	0	0	0	18	0	2	18	0	0	8	10	4	64	254
Count Total	0	9	11	10	0	0	0	99	0	3	133	0	0	91	176	22	554	0
Peak Hour	**0**	**6**	**4**	**6**	**0**	**0**	**0**	**46**	**0**	**1**	**61**	**0**	**0**	**34**	**103**	**8**	**269**	**0**

Two-Hour Count Summaries - Bikes

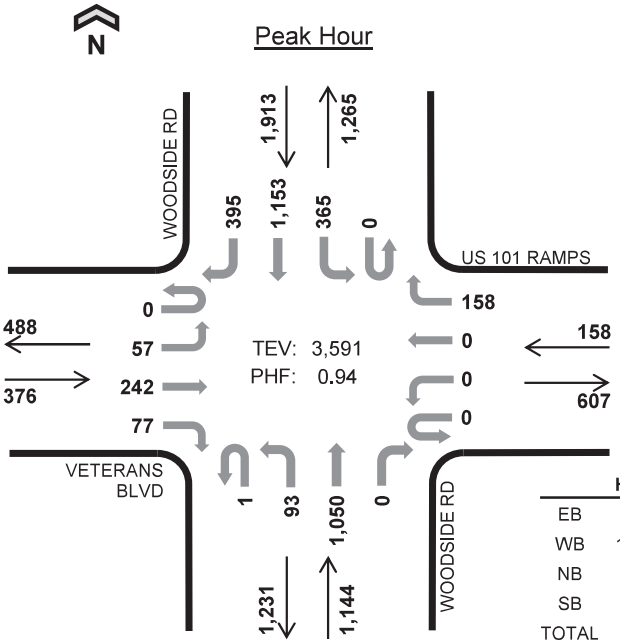
Interval Start	VETERANS BLVD Eastbound			US 101 RAMPS Westbound			WOODSIDE RD Northbound			WOODSIDE RD Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	3	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	5
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	2
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**4**
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	0	1	4	0	0	3	0	8	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**4**	**0**

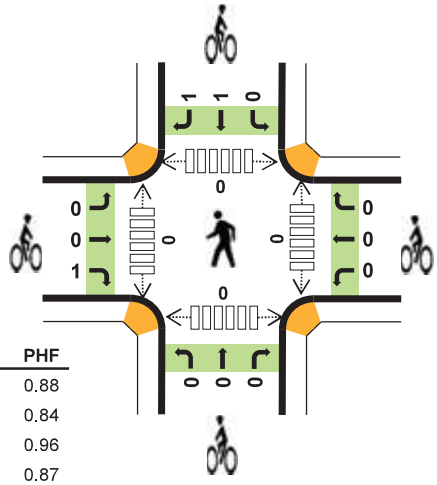
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

WOODSIDE RD
VETERANS BLVD

Date: 04/25/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.8%	0.88
WB	12.0%	0.84
NB	2.6%	0.96
SB	1.5%	0.87
TOTAL	2.2%	0.94

Two-Hour Count Summaries

Interval Start		VETERANS BLVD Eastbound				US 101 RAMPS Westbound				WOODSIDE RD Northbound				WOODSIDE RD 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	16	73	15	0	0	0	39	0	26	292	0	0	88	214	91	854	0
4:15 PM		**0**	**15**	**66**	**23**	**0**	**0**	**0**	**31**	**0**	**21**	**266**	**0**	**0**	**108**	**255**	**94**	**879**	0
4:30 PM		**0**	**18**	**52**	**25**	**0**	**0**	**0**	**41**	**0**	**19**	**256**	**0**	**0**	**90**	**274**	**99**	**874**	0
4:45 PM		**0**	**14**	**68**	**25**	**0**	**0**	**0**	**47**	**1**	**33**	**250**	**0**	**0**	**70**	**273**	**100**	**881**	3,488
5:00 PM		**0**	**10**	**56**	**4**	**0**	**0**	**0**	**39**	**0**	**20**	**278**	**0**	**0**	**97**	**351**	**102**	**957**	**3,591**
5:15 PM		0	7	75	9	0	0	0	36	0	27	197	0	0	98	274	112	835	3,547
5:30 PM		0	10	85	14	0	0	0	32	0	30	189	0	0	91	285	117	853	3,526
5:45 PM		0	5	69	10	0	0	0	17	0	25	194	0	0	69	288	140	817	3,462
Count Total		0	95	544	125	0	0	0	282	1	201	1,922	0	0	711	2,214	855	6,950	0
Peak Hour	**All**	**0**	**57**	**242**	**77**	**0**	**0**	**0**	**158**	**1**	**93**	**1,050**	**0**	**0**	**365**	**1,153**	**395**	**3,591**	**0**
	HV	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**19**	**0**	**2**	**28**	**0**	**0**	**5**	**15**	**8**	**80**	**0**
	HV%	**-**	**0%**	**0%**	**3%**	**-**	**-**	**-**	**12%**	**0%**	**2%**	**3%**	**-**	**-**	**1%**	**1%**	**2%**	**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	2	5	14	4	*25*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**1**	**5**	**5**	**8**	***19***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**2**	**5**	**8**	**8**	***23***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**5**	**8**	**7**	***20***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**4**	**9**	**5**	***18***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
5:15 PM	1	0	2	5	*8*	0	0	0	1	*1*	0	0	0	0	*0*
5:30 PM	0	1	2	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	2	8	*10*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	6	25	50	46	*127*	1	0	0	3	*4*	0	0	0	0	*0*
Peak Hour	**3**	**19**	**30**	**28**	***80***	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	***0***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	VETERANS BLVD Eastbound				US 101 RAMPS Westbound				WOODSIDE RD Northbound				WOODSIDE RD 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	1	1	0	0	0	0	5	0	1	13	0	0	1	2	1	25	0
4:15 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**5**	**0**	**0**	**2**	**5**	**1**	**19**	0
4:30 PM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**5**	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**2**	**23**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**8**	**0**	**0**	**3**	**1**	**3**	**20**	87
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**2**	**7**	**0**	**0**	**0**	**3**	**2**	**18**	**80**
5:15 PM	0	0	1	0	0	0	0	0	0	0	2	0	0	1	3	1	8	69
5:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	1	4	50
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	7	1	10	40
Count Total	0	1	3	2	0	0	0	25	0	3	47	0	0	7	27	12	127	0
Peak Hour	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**19**	**0**	**2**	**28**	**0**	**0**	**5**	**15**	**8**	**80**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	VETERANS BLVD Eastbound			US 101 RAMPS Westbound			WOODSIDE RD Northbound			WOODSIDE RD 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	0	0	0	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**3**
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	0	1	0	0	0	0	0	0	0	2	1	4	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

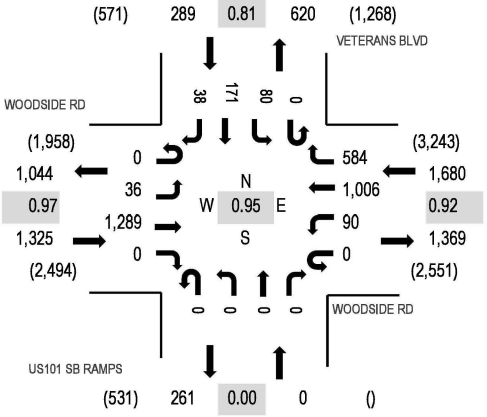
Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

All Traffic Data Services Inc.

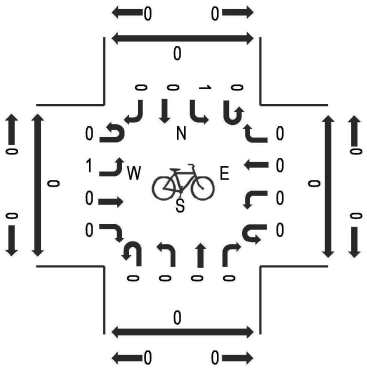
(303) 216-2439
www.alltrafficdata.net

Location: 8 US101 SB RAMPS & WOODSIDE RD AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

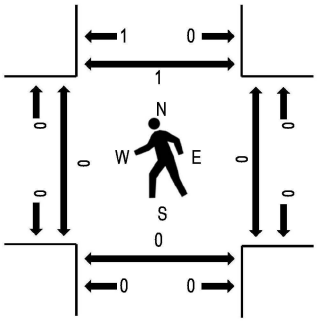
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



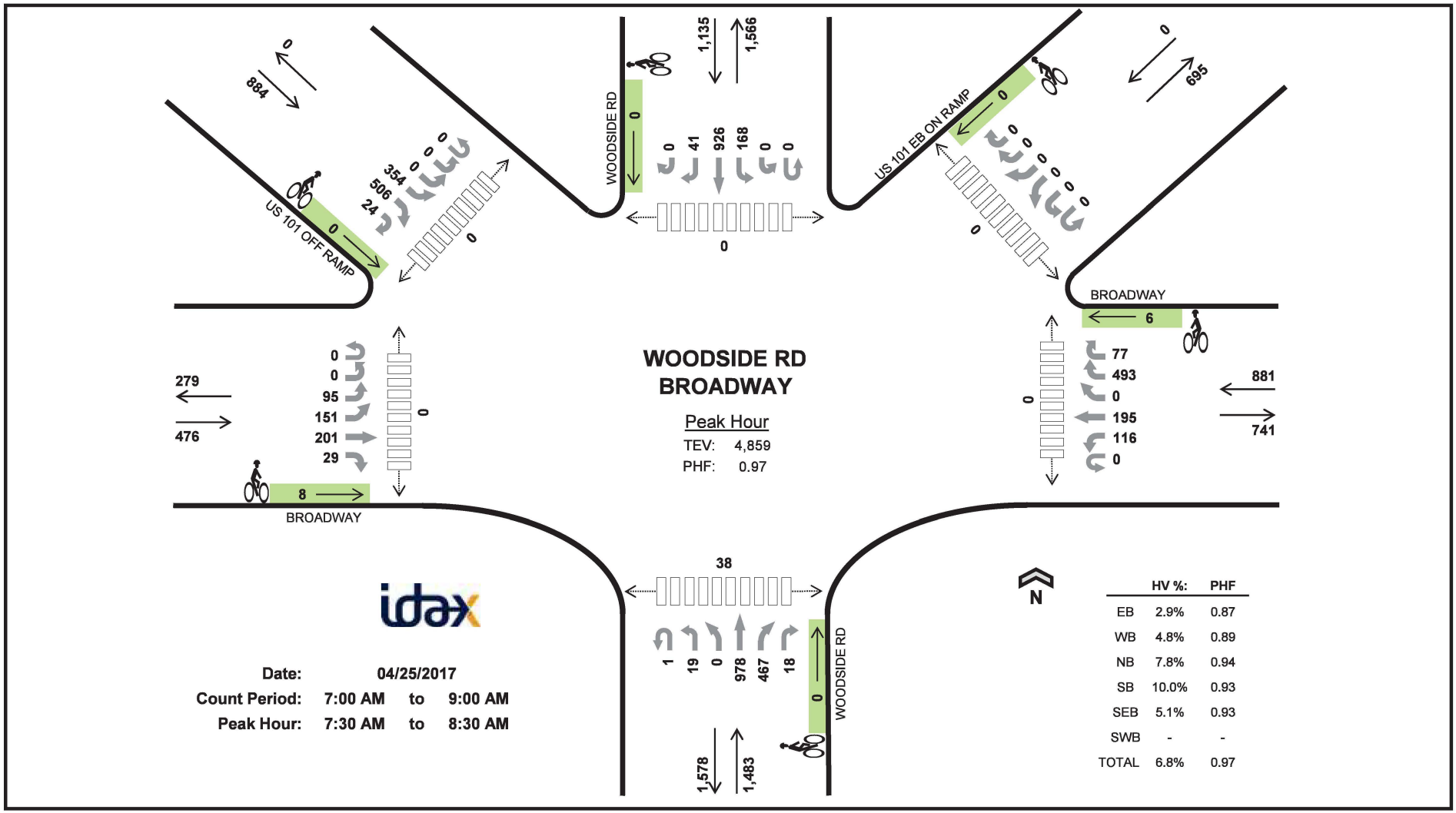
Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WOODSIDE RD Eastbound				WOODSIDE RD Westbound				US101 SB RAMPS Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	12	259	0	0	35	255	112	0	0	0	0	0	9	31	4	717	3,215	0	0	0	0
7:15 AM	0	14	327	0	0	20	259	124	0	0	0	0	0	11	18	12	785	3,294	0	0	0	0
7:30 AM	0	7	315	0	0	26	252	150	0	0	0	0	0	31	60	9	850	3,260	0	0	0	0
7:45 AM	0	6	336	0	0	22	262	173	0	0	0	0	0	15	38	11	863	3,181	0	0	0	0
8:00 AM	0	9	311	0	0	22	233	137	0	0	0	0	0	23	55	6	796	3,093	0	0	0	1
8:15 AM	0	12	280	0	0	12	212	158	0	0	0	0	0	21	48	8	751		0	0	0	1
8:30 AM	0	20	281	0	0	27	226	142	0	0	0	0	0	20	48	7	771		0	0	0	0
8:45 AM	0	19	286	0	0	18	193	173	0	0	0	0	0	26	51	9	775		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	11	0	0	22	20	0	0	0	0	0	0	5	0	1	59
Lights	0	34	1,225	0	0	51	931	572	0	0	0	0	0	68	164	35	3,080
Mediums	0	2	53	0	0	17	55	12	0	0	0	0	0	7	7	2	155
Total	0	36	1,289	0	0	90	1,006	584	0	0	0	0	0	80	171	38	3,294



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Two-Hour Count Summaries

Interval Start	BROADWAY Eastbound						BROADWAY Westbound						WOODSIDE RD Northbound						WOODSIDE RD Southbound						US 101 OFF RAMP Southeastbound						US 101 EB ON RAMP Southwestbound						15-min Total	Rolling One Hour
	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	TH	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
7:00 AM	0	0	25	24	27	11	0	28	19	0	94	27	0	4	0	206	128	1	0	0	50	204	18	0	0	0	0	99	142	6	0	0	0	0	0	0	1,113	0
7:15 AM	0	0	25	35	41	8	0	22	42	0	87	48	1	6	0	197	108	1	0	0	55	191	12	0	0	0	0	93	114	3	0	0	0	0	0	0	1,089	0
7:30 AM	**0**	**0**	**25**	**40**	**36**	**6**	**0**	**21**	**40**	**0**	**123**	**21**	**0**	**3**	**0**	**251**	**139**	**2**	**0**	**0**	**36**	**259**	**11**	**0**	**0**	**0**	**0**	**74**	**132**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1,227**	0
7:45 AM	**0**	**0**	**25**	**39**	**65**	**8**	**0**	**30**	**58**	**0**	**139**	**20**	**1**	**8**	**0**	**236**	**117**	**3**	**0**	**0**	**51**	**241**	**9**	**0**	**0**	**0**	**0**	**88**	**106**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**1,250**	4,679
8:00 AM	**0**	**0**	**17**	**31**	**50**	**2**	**0**	**33**	**45**	**0**	**109**	**18**	**0**	**4**	**0**	**268**	**119**	**3**	**0**	**0**	**42**	**239**	**11**	**0**	**0**	**0**	**0**	**106**	**129**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1,229**	4,795
8:15 AM	**0**	**0**	**28**	**41**	**50**	**13**	**0**	**32**	**52**	**0**	**122**	**18**	**0**	**4**	**0**	**223**	**92**	**10**	**0**	**0**	**39**	**187**	**10**	**0**	**0**	**0**	**0**	**86**	**139**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**1,153**	**4,859**
8:30 AM	0	0	26	29	46	5	0	14	37	0	97	23	1	7	0	277	120	4	0	0	40	208	15	0	0	0	0	79	126	5	0	0	0	0	0	0	1,159	4,791
8:45 AM	1	0	28	26	50	11	0	20	36	0	107	12	0	5	0	248	86	3	0	0	30	145	14	0	0	0	0	85	155	8	0	0	0	0	0	0	1,070	4,611
Count Total	1	0	199	265	365	64	0	200	329	0	878	187	3	41	0	1,906	909	27	0	0	343	1,674	100	0	0	0	0	710	1,043	46	0	0	0	0	0	0	9,290	0
Peak Hour All	**0**	**0**	**95**	**151**	**201**	**29**	**0**	**116**	**195**	**0**	**493**	**77**	**1**	**19**	**0**	**978**	**467**	**18**	**0**	**0**	**168**	**926**	**41**	**0**	**0**	**0**	**0**	**354**	**506**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**4,859**	**0**
Peak Hour HV	**0**	**0**	**1**	**5**	**7**	**1**	**0**	**6**	**5**	**0**	**28**	**3**	**0**	**1**	**0**	**74**	**39**	**2**	**0**	**0**	**6**	**105**	**3**	**0**	**0**	**0**	**0**	**6**	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**331**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**3%**	**3%**	**3%**	**-**	**5%**	**3%**	**-**	**6%**	**4%**	**0%**	**5%**	**-**	**8%**	**8%**	**11%**	**-**	**-**	**4%**	**11%**	**7%**	**-**	**-**	**-**	**-**	**2%**	**8%**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**7%**	**0**

n overall count.

Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
	EB	WB	NB	SB	SEB	SWB	Total	EB	WB	NB	SB	SEB	SWB	Total	East	West	North	South	NE	NW	Total
7:00 AM	7	14	20	10	27	0	*78*	0	0	0	0	0	0	*0*	0	0	0	0	0	0	*0*
7:15 AM	3	13	11	25	22	0	*74*	1	2	0	0	0	0	*3*	0	0	0	6	0	0	*6*
7:30 AM	**4**	**7**	**23**	**29**	**9**	**0**	***72***	**3**	**1**	**0**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**4**	**0**	**0**	***4***
7:45 AM	**2**	**11**	**26**	**33**	**9**	**0**	***81***	**0**	**2**	**0**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**6**	**0**	**0**	***6***
8:00 AM	**4**	**15**	**34**	**29**	**7**	**0**	***89***	**2**	**0**	**0**	**0**	**0**	**0**	***2***	**0**	**0**	**0**	**17**	**0**	**0**	***17***
8:15 AM	**4**	**9**	**33**	**23**	**20**	**0**	***89***	**3**	**3**	**0**	**0**	**0**	**0**	***6***	**0**	**0**	**0**	**11**	**0**	**0**	***11***
8:30 AM	1	10	32	30	11	0	*84*	1	1	0	0	0	0	*2*	0	0	0	11	0	0	*11*
8:45 AM	6	6	24	10	15	0	*61*	0	2	0	0	0	0	*2*	0	0	0	7	0	0	*7*
Count Total	31	85	203	189	120	0	*628*	10	11	0	0	0	0	*21*	0	0	0	62	0	0	*62*
Peak Hr	**14**	**42**	**116**	**114**	**45**	**0**	***331***	**8**	**6**	**0**	**0**	**0**	**0**	***14***	**0**	**0**	**0**	**38**	**0**	**0**	***38***

Two-Hour Count Summaries - Heavy Vehicles

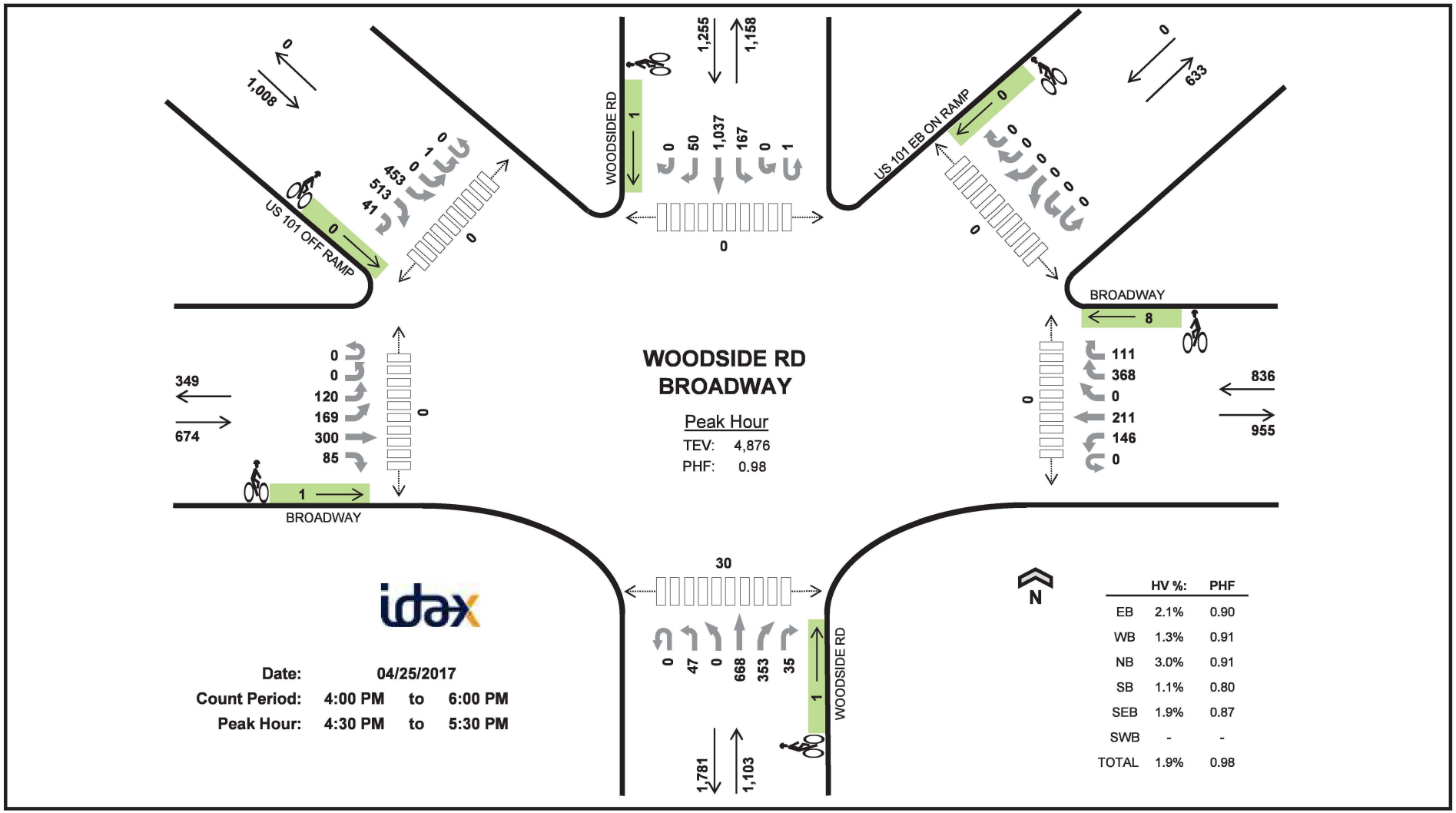
Interval Start	BROADWAY Eastbound						BROADWAY Westbound						WOODSIDE RD Northbound						WOODSIDE RD Southbound						US 101 OFF RAMP Southeastbound						US 101 EB ON RAMP Southwestbound						15-min Total	Rolling One Hour
	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	TH	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
7:00 AM	0	0	4	1	2	0	0	2	3	0	5	4	0	1	0	9	9	1	0	0	2	7	1	0	0	0	0	4	22	1	0	0	0	0	0	0	78	0
7:15 AM	0	0	1	1	1	0	0	1	2	0	5	5	0	1	0	4	6	0	0	0	4	19	2	0	0	0	0	2	19	1	0	0	0	0	0	0	74	0
7:30 AM	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**1**	**1**	**0**	**5**	**0**	**0**	**0**	**0**	**16**	**7**	**0**	**0**	**0**	**2**	**26**	**1**	**0**	**0**	**0**	**0**	**2**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**72**	0
7:45 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**2**	**0**	**6**	**2**	**0**	**1**	**0**	**12**	**12**	**1**	**0**	**0**	**1**	**32**	**0**	**0**	**0**	**0**	**0**	**2**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**81**	305
8:00 AM	**0**	**0**	**1**	**0**	**3**	**0**	**0**	**2**	**2**	**0**	**10**	**1**	**0**	**0**	**0**	**22**	**12**	**0**	**0**	**0**	**2**	**26**	**1**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**89**	316
8:15 AM	**0**	**0**	**0**	**2**	**1**	**1**	**0**	**2**	**0**	**0**	**7**	**0**	**0**	**0**	**0**	**24**	**8**	**1**	**0**	**0**	**1**	**21**	**1**	**0**	**0**	**0**	**0**	**1**	**19**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**89**	**331**
8:30 AM	0	0	0	0	1	0	0	2	2	0	3	3	0	0	0	12	19	1	0	0	5	25	0	0	0	0	0	1	10	0	0	0	0	0	0	0	84	343
8:45 AM	0	0	4	0	2	0	0	0	0	0	4	2	0	0	0	16	8	0	0	0	0	9	1	0	0	0	0	4	10	1	0	0	0	0	0	0	61	323
Count Total	0	0	10	7	13	1	0	11	12	0	45	17	0	3	0	115	81	4	0	0	17	165	7	0	0	0	0	17	100	3	0	0	0	0	0	0	628	0
Peak Hour	**0**	**0**	**1**	**5**	**7**	**1**	**0**	**6**	**5**	**0**	**28**	**3**	**0**	**1**	**0**	**74**	**39**	**2**	**0**	**0**	**6**	**105**	**3**	**0**	**0**	**0**	**0**	**6**	**39**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	331	**0**

Two-Hour Count Summaries - Bikes

Interval Start	BROADWAY Eastbound						BROADWAY Westbound						WOODSIDE RD Northbound						WOODSIDE RD Southbound						US 101 OFF RAMP Southeastbound						US 101 EB ON RAMP Southwestbound						15-min Total	Rolling One Hour
	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	TH	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
7:30 AM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	9
8:00 AM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
8:15 AM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**14**
8:30 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
8:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	12
Count Total	0	0	0	0	10	0	0	0	10	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0
Peak Hour	**0**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	14	**0**

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Two-Hour Count Summaries

Interval Start	BROADWAY Eastbound						BROADWAY Westbound						WOODSIDE RD Northbound						WOODSIDE RD Southbound						US 101 OFF RAMP Southeastbound						US 101 EB ON RAMP Southwestbound						15-min Total	Rolling One Hour
	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	TH	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	24	39	62	15	0	39	48	0	84	34	0	7	0	216	133	16	0	0	29	200	13	0	0	0	0	88	140	10	0	0	0	0	0	0	1,197	0
4:15 PM	0	0	58	22	87	14	0	27	45	0	104	38	0	13	0	186	80	5	0	0	45	226	12	0	0	0	0	70	137	9	0	0	0	0	0	0	1,178	0
4:30 PM	**0**	**0**	**32**	**47**	**85**	**23**	**0**	**38**	**36**	**0**	**90**	**31**	**0**	**11**	**0**	**155**	**98**	**10**	**0**	**0**	**39**	**222**	**11**	**0**	**0**	**1**	**0**	**120**	**137**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**1,198**	0
4:45 PM	**0**	**0**	**26**	**48**	**79**	**13**	**0**	**24**	**41**	**0**	**80**	**38**	**0**	**8**	**0**	**186**	**78**	**3**	**0**	**0**	**46**	**268**	**13**	**0**	**0**	**0**	**0**	**115**	**136**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**1,213**	4,786
5:00 PM	**0**	**0**	**33**	**32**	**58**	**17**	**0**	**45**	**57**	**0**	**100**	**26**	**0**	**11**	**0**	**187**	**97**	**9**	**1**	**0**	**44**	**331**	**17**	**0**	**0**	**0**	**0**	**98**	**77**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**1,250**	4,839
5:15 PM	**0**	**0**	**29**	**42**	**78**	**32**	**0**	**39**	**77**	**0**	**98**	**16**	**0**	**17**	**0**	**140**	**80**	**13**	**0**	**0**	**38**	**216**	**9**	**0**	**0**	**0**	**0**	**120**	**163**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1,215**	**4,876**
5:30 PM	0	0	26	48	73	11	0	35	56	0	76	19	0	11	0	147	81	9	0	0	37	246	9	0	0	0	0	99	160	13	0	0	0	0	0	0	1,156	4,834
5:45 PM	0	0	22	43	88	11	0	28	45	0	66	44	0	7	0	157	68	4	1	0	33	273	8	0	0	0	0	107	149	7	0	0	0	0	0	0	1,161	4,782
Count Total	0	0	250	321	610	136	0	275	405	0	698	246	0	85	0	1,374	715	69	2	0	311	1,982	92	0	0	1	0	817	1,099	80	0	0	0	0	0	0	9,568	0
Peak Hour All	**0**	**0**	**120**	**169**	**300**	**85**	**0**	**146**	**211**	**0**	**368**	**111**	**0**	**47**	**0**	**668**	**353**	**35**	**1**	**0**	**167**	**1,037**	**50**	**0**	**0**	**1**	**0**	**453**	**513**	**41**	**0**	**0**	**0**	**0**	**0**	**0**	**4,876**	**0**
Peak Hour HV	**0**	**0**	**3**	**3**	**8**	**0**	**0**	**1**	**3**	**0**	**7**	**0**	**0**	**0**	**0**	**13**	**19**	**1**	**0**	**0**	**2**	**11**	**1**	**0**	**0**	**0**	**0**	**11**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**91**	**0**
Peak Hour HV%	**-**	**-**	**3%**	**2%**	**3%**	**0%**	**-**	**1%**	**1%**	**-**	**2%**	**0%**	**-**	**0%**	**-**	**2%**	**5%**	**3%**	**0%**	**-**	**1%**	**1%**	**2%**	**-**	**-**	**0%**	**-**	**2%**	**1%**	**2%**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**0**

n overall count.

Interval Start	Heavy Vehicle Totals							Bicycles							Pedestrians (Crossing Leg)						
	EB	WB	NB	SB	SEB	SWB	Total	EB	WB	NB	SB	SEB	SWB	Total	East	West	North	South	NE	NW	Total
4:00 PM	3	5	26	4	11	0	*49*	0	0	0	0	0	0	*0*	0	0	0	0	0	0	*0*
4:15 PM	7	3	8	6	8	0	*32*	0	3	0	0	0	0	*3*	0	0	0	6	0	0	*6*
4:30 PM	**4**	**5**	**14**	**5**	**5**	**0**	***33***	**1**	**0**	**0**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**12**	**0**	**0**	***12***
4:45 PM	**2**	**0**	**10**	**2**	**4**	**0**	***18***	**0**	**0**	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**9**	**0**	**0**	***9***
5:00 PM	**5**	**5**	**5**	**4**	**4**	**0**	***23***	**0**	**5**	**0**	**0**	**0**	**0**	***5***	**0**	**0**	**0**	**4**	**0**	**0**	***4***
5:15 PM	**3**	**1**	**4**	**3**	**6**	**0**	***17***	**0**	**3**	**1**	**1**	**0**	**0**	***5***	**0**	**0**	**0**	**5**	**0**	**0**	***5***
5:30 PM	2	2	4	1	5	0	*14*	2	4	0	1	0	0	*7*	0	0	0	11	0	0	*11*
5:45 PM	2	1	6	6	1	0	*16*	3	2	0	0	0	0	*5*	0	0	0	2	0	0	*2*
Count Total	28	22	77	31	44	0	*202*	6	17	1	2	0	0	*26*	0	0	0	49	0	0	*49*
Peak Hr	**14**	**11**	**33**	**14**	**19**	**0**	***91***	**1**	**8**	**1**	**1**	**0**	**0**	***11***	**0**	**0**	**0**	**30**	**0**	**0**	***30***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	BROADWAY Eastbound						BROADWAY Westbound						WOODSIDE RD Northbound						WOODSIDE RD Southbound						US 101 OFF RAMP Southeastbound						US 101 EB ON RAMP Southwestbound						15-min Total	Rolling One Hour
	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	TH	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	3	0	0	0	0	0	3	0	2	0	0	0	0	12	13	1	0	0	0	4	0	0	0	0	0	8	2	1	0	0	0	0	0	0	49	0
4:15 PM	0	0	0	2	5	0	0	0	0	0	3	0	0	0	0	4	4	0	0	0	5	1	0	0	0	0	0	5	3	0	0	0	0	0	0	0	32	0
4:30 PM	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**1**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**4**	**10**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**33**	0
4:45 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**5**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**18**	132
5:00 PM	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**23**	106
5:15 PM	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**91**
5:30 PM	0	0	0	1	0	1	0	0	2	0	0	0	0	1	0	1	2	0	0	0	0	1	0	0	0	0	0	1	4	0	0	0	0	0	0	0	14	72
5:45 PM	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	5	1	0	0	0	1	5	0	0	0	0	0	1	0	0	0	0	0	0	0	0	16	70
Count Total	0	0	6	6	15	1	0	1	9	0	12	0	0	1	0	35	39	2	0	0	8	22	1	0	0	0	0	26	16	2	0	0	0	0	0	0	202	0
Peak Hour	**0**	**0**	**3**	**3**	**8**	**0**	**0**	**1**	**3**	**0**	**7**	**0**	**0**	**0**	**0**	**13**	**19**	**1**	**0**	**0**	**2**	**11**	**1**	**0**	**0**	**0**	**0**	**11**	**7**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	91	**0**

Two-Hour Count Summaries - Bikes

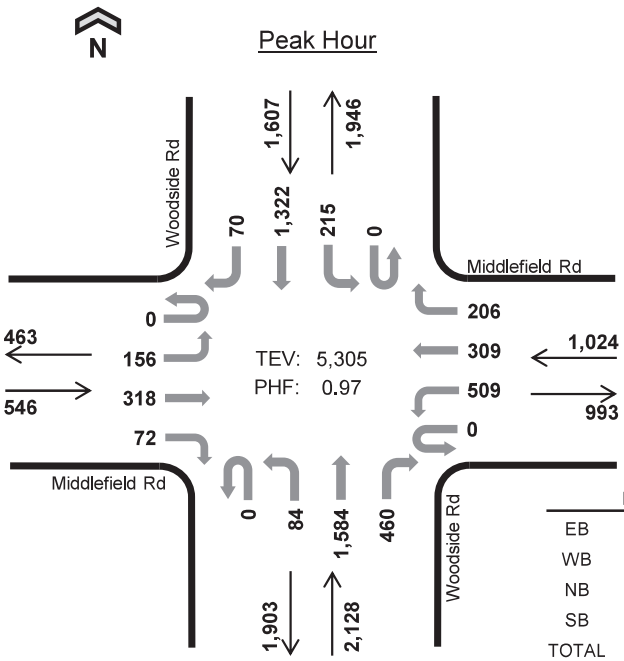
Interval Start	BROADWAY Eastbound						BROADWAY Westbound						WOODSIDE RD Northbound						WOODSIDE RD Southbound						US 101 OFF RAMP Southeastbound						US 101 EB ON RAMP Southwestbound						15-min Total	Rolling One Hour
	UT	HL	LT	BL	TH	RT	UT	LT	TH	BR	RT	HR	UT	LT	BL	TH	BR	RT	UT	HL	LT	TH	RT	HR	UT	HL	LT	BL	BR	HR	UT	HL	BL	BR	RT	HR		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	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	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	9
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**11**
5:30 PM	0	0	0	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	17
5:45 PM	0	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	22
Count Total	0	0	0	0	6	0	0	0	17	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	11	**0**

Deon Fouche: 415 - 757 - 7714

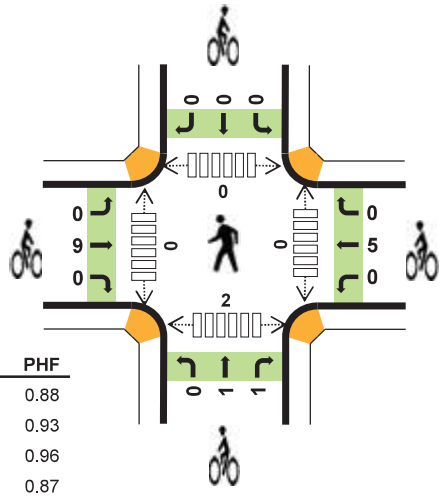
deon.fouche@idaxdata.com

Woodside Rd
Middlefield Rd

Date: 01-31-2018
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:30 AM to 8:30 AM



	HV %:	PHF
EB	1.1%	0.88
WB	2.9%	0.93
NB	2.0%	0.96
SB	6.9%	0.87
TOTAL	3.6%	0.97



Two-Hour Count Summaries

Interval Start		Middlefield Rd Eastbound				Middlefield Rd Westbound				Woodside Rd Northbound				Woodside Rd 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	31	35	23	0	86	52	38	0	10	330	82	0	36	236	21	980	0
7:15 AM		0	44	67	31	0	121	67	38	0	11	375	96	0	47	302	22	1,221	0
7:30 AM		**0**	**33**	**63**	**24**	**0**	**143**	**63**	**70**	**0**	**20**	**428**	**105**	**0**	**52**	**334**	**15**	**1,350**	0
7:45 AM		**0**	**42**	**84**	**18**	**0**	**129**	**72**	**39**	**0**	**16**	**380**	**110**	**0**	**49**	**330**	**20**	**1,289**	4,840
8:00 AM		**0**	**38**	**74**	**15**	**0**	**107**	**75**	**50**	**0**	**21**	**410**	**119**	**0**	**67**	**379**	**17**	**1,372**	5,232
8:15 AM		**0**	**43**	**97**	**15**	**0**	**130**	**99**	**47**	**0**	**27**	**366**	**126**	**0**	**47**	**279**	**18**	**1,294**	**5,305**
8:30 AM		0	44	79	14	0	104	69	61	0	20	411	85	0	46	283	26	1,242	5,197
8:45 AM		0	30	49	13	0	65	74	30	0	16	377	84	0	53	247	12	1,050	4,958
Count Total		0	305	548	153	0	885	571	373	0	141	3,077	807	0	397	2,390	151	9,798	0
Peak Hour	**All**	**0**	**156**	**318**	**72**	**0**	**509**	**309**	**206**	**0**	**84**	**1,584**	**460**	**0**	**215**	**1,322**	**70**	**5,305**	**0**
	HV	**0**	**1**	**5**	**0**	**0**	**10**	**11**	**9**	**0**	**1**	**35**	**7**	**0**	**13**	**98**	**0**	**190**	**0**
	HV%	**-**	**1%**	**2%**	**0%**	**-**	**2%**	**4%**	**4%**	**-**	**1%**	**2%**	**2%**	**-**	**6%**	**7%**	**0%**	**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	3	2	10	19	*34*	2	0	0	0	*2*	0	0	0	0	*0*
7:15 AM	3	11	7	24	*45*	2	2	0	0	*4*	0	0	0	2	*2*
7:30 AM	**1**	**7**	**9**	**33**	***50***	**2**	**4**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**2**	**6**	**8**	**20**	***36***	**4**	**0**	**0**	**0**	***4***	**0**	**0**	**0**	**2**	*2*
8:00 AM	**1**	**10**	**15**	**36**	***62***	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**2**	**7**	**11**	**22**	***42***	**1**	**0**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	***0***
8:30 AM	5	9	35	29	*78*	2	2	1	0	*5*	0	0	0	1	*1*
8:45 AM	4	2	35	28	*69*	2	2	0	0	*4*	0	0	0	0	*0*
Count Total	21	54	130	211	*416*	17	11	3	0	*31*	0	0	0	5	*5*
Peak Hour	**6**	**30**	**43**	**111**	***190***	**9**	**5**	**2**	**0**	***16***	**0**	**0**	**0**	**2**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Middlefield Rd Eastbound				Middlefield Rd Westbound				Woodside Rd Northbound				Woodside Rd 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	0	2	1	0	1	1	0	0	0	9	1	0	1	17	1	34	0
7:15 AM	0	0	2	1	0	6	3	2	0	0	6	1	0	6	18	0	45	0
7:30 AM	**0**	**0**	**1**	**0**	**0**	**1**	**4**	**2**	**0**	**0**	**7**	**2**	**0**	**6**	**27**	**0**	**50**	0
7:45 AM	**0**	**1**	**1**	**0**	**0**	**3**	**2**	**1**	**0**	**0**	**7**	**1**	**0**	**1**	**19**	**0**	**36**	165
8:00 AM	**0**	**0**	**1**	**0**	**0**	**3**	**3**	**4**	**0**	**1**	**12**	**2**	**0**	**4**	**32**	**0**	**62**	193
8:15 AM	**0**	**0**	**2**	**0**	**0**	**3**	**2**	**2**	**0**	**0**	**9**	**2**	**0**	**2**	**20**	**0**	**42**	**190**
8:30 AM	0	2	3	0	0	2	1	6	0	0	34	1	0	2	26	1	78	218
8:45 AM	0	1	3	0	0	1	1	0	0	0	31	4	0	5	22	1	69	251
Count Total	0	4	15	2	0	20	17	17	0	1	115	14	0	27	181	3	416	0
Peak Hour	**0**	**1**	**5**	**0**	**0**	**10**	**11**	**9**	**0**	**1**	**35**	**7**	**0**	**13**	**98**	**0**	**190**	**0**

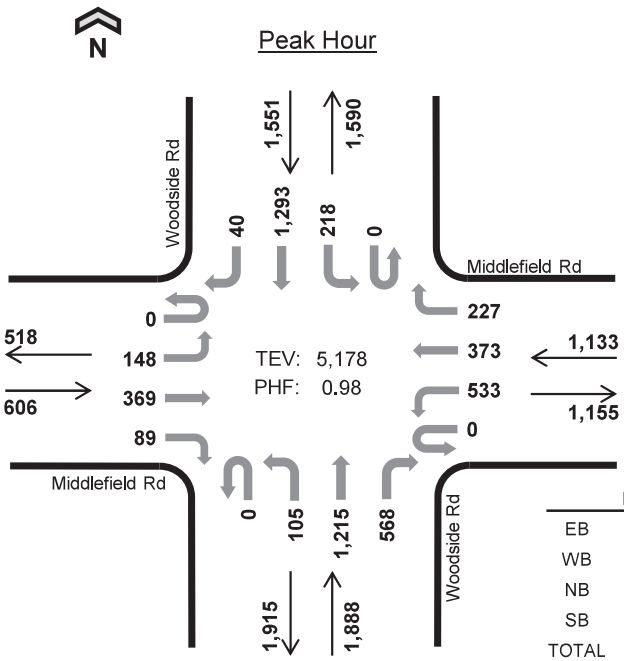
Two-Hour Count Summaries - Bikes

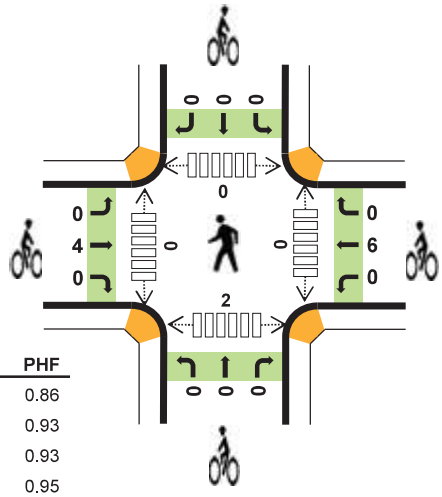
Interval Start	Middlefield Rd Eastbound			Middlefield Rd Westbound			Woodside Rd Northbound			Woodside Rd Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	4	0
7:30 AM	**0**	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	0
7:45 AM	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	16
8:00 AM	**0**	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	17
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**16**
8:30 AM	0	2	0	0	2	0	0	1	0	0	0	0	5	15
8:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	4	15
Count Total	0	17	0	0	11	0	0	2	1	0	0	0	31	0
Peak Hour	**0**	**9**	**0**	**0**	**5**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**16**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Woodside Rd
Middlefield Rd

Date: 01-31-2018
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	1.7%	0.86
WB	1.0%	0.93
NB	2.8%	0.93
SB	0.8%	0.95
TOTAL	1.7%	0.98

Two-Hour Count Summaries

Interval Start		Middlefield Rd Eastbound				Middlefield Rd Westbound				Woodside Rd Northbound				Woodside Rd 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**	**49**	**107**	**20**	**0**	**131**	**94**	**67**	**0**	**33**	**305**	**133**	**0**	**53**	**317**	**8**	**1,317**	0
4:15 PM		**0**	**25**	**95**	**17**	**0**	**130**	**100**	**65**	**0**	**21**	**318**	**122**	**0**	**71**	**324**	**13**	**1,301**	0
4:30 PM		**0**	**43**	**84**	**24**	**0**	**147**	**98**	**59**	**0**	**20**	**279**	**150**	**0**	**42**	**314**	**14**	**1,274**	0
4:45 PM		**0**	**31**	**83**	**28**	**0**	**125**	**81**	**36**	**0**	**31**	**313**	**163**	**0**	**52**	**338**	**5**	**1,286**	**5,178**
5:00 PM		0	39	71	30	0	131	81	55	0	28	261	111	0	51	362	15	1,235	5,096
5:15 PM		0	44	83	22	0	140	72	61	0	30	270	127	0	63	369	16	1,297	5,092
5:30 PM		0	45	82	20	0	144	76	41	0	24	248	130	0	55	374	14	1,253	5,071
5:45 PM		0	38	83	28	0	131	81	42	1	37	265	119	0	78	347	21	1,271	5,056
Count Total		0	314	688	189	0	1,079	683	426	1	224	2,259	1,055	0	465	2,745	106	10,234	0
Peak Hour	**All**	**0**	**148**	**369**	**89**	**0**	**533**	**373**	**227**	**0**	**105**	**1,215**	**568**	**0**	**218**	**1,293**	**40**	**5,178**	**0**
	HV	**0**	**3**	**7**	**0**	**0**	**5**	**4**	**2**	**0**	**0**	**41**	**12**	**0**	**2**	**11**	**0**	**87**	**0**
	HV%	**-**	**2%**	**2%**	**0%**	**-**	**1%**	**1%**	**1%**	**-**	**0%**	**3%**	**2%**	**-**	**1%**	**1%**	**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**	**5**	**15**	**3**	***28***	**1**	**2**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**2**	**2**	**12**	**4**	***20***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**1**	**2**	**14**	**2**	***19***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**2**	*2*
4:45 PM	**2**	**2**	**12**	**4**	***20***	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***
5:00 PM	2	1	5	4	*12*	0	5	0	0	*5*	0	0	0	1	*1*
5:15 PM	1	2	3	2	*8*	4	1	0	0	*5*	0	0	0	1	*1*
5:30 PM	3	6	2	4	*15*	2	1	0	0	*3*	0	0	0	2	*2*
5:45 PM	3	0	7	3	*13*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	19	20	70	26	*135*	11	13	0	0	*24*	0	0	0	6	*6*
Peak Hour	**10**	**11**	**53**	**13**	***87***	**4**	**6**	**0**	**0**	***10***	**0**	**0**	**0**	**2**	***2***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Middlefield Rd Eastbound				Middlefield Rd Westbound				Woodside Rd Northbound				Woodside Rd 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**	**3**	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**9**	**6**	**0**	**1**	**2**	**0**	**28**	0
4:15 PM	**0**	**0**	**2**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**11**	**1**	**0**	**0**	**4**	**0**	**20**	0
4:30 PM	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**12**	**2**	**0**	**0**	**2**	**0**	**19**	0
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**9**	**3**	**0**	**1**	**3**	**0**	**20**	**87**
5:00 PM	0	0	2	0	0	0	1	0	0	0	4	1	0	1	3	0	12	71
5:15 PM	0	0	1	0	0	0	1	1	0	0	3	0	0	0	2	0	8	59
5:30 PM	0	2	1	0	0	1	4	1	0	0	2	0	0	1	3	0	15	55
5:45 PM	0	0	3	0	0	0	0	0	0	0	6	1	0	0	3	0	13	48
Count Total	0	5	14	0	0	6	10	4	0	0	56	14	0	4	22	0	135	0
Peak Hour	**0**	**3**	**7**	**0**	**0**	**5**	**4**	**2**	**0**	**0**	**41**	**12**	**0**	**2**	**11**	**0**	**87**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Middlefield Rd Eastbound			Middlefield Rd Westbound			Woodside Rd Northbound			Woodside Rd 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**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	0
4:15 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:30 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**10**
5:00 PM	0	0	0	0	5	0	0	0	0	0	0	0	5	12
5:15 PM	0	4	0	0	1	0	0	0	0	0	0	0	5	15
5:30 PM	0	2	0	0	1	0	0	0	0	0	0	0	3	17
5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	14
Count Total	0	11	0	0	13	0	0	0	0	0	0	0	24	0
Peak Hour	**0**	**4**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**

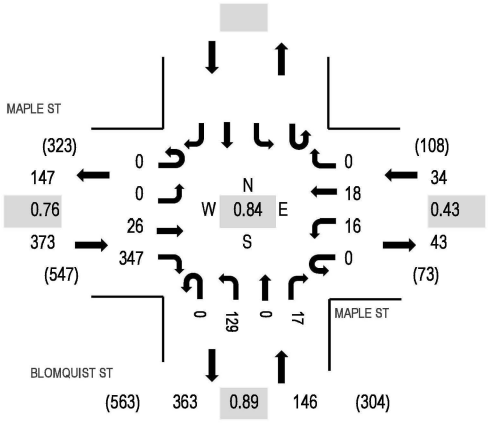
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

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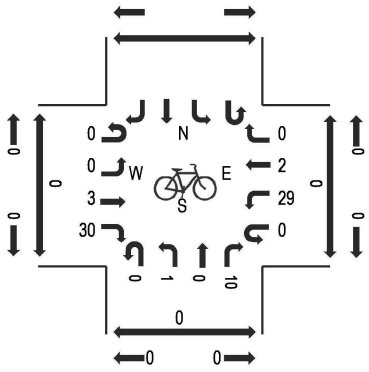
(303) 216-2439
www.alltrafficdata.net

Location: 6 BLOMQUIST ST & MAPLE ST AM
Date: Tuesday, September 10, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

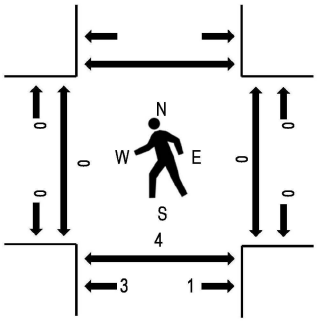
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAPLE ST Eastbound				MAPLE ST Westbound				BLOMQUIST ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	2	25	0	26	17	0	0	20	0	5					95	406	0	0	0	
7:15 AM	0	0	4	29	0	9	6	0	0	38	0	2					88	444	0	0	0	
7:30 AM	0	0	4	39	0	2	6	0	0	43	0	6					100	478	0	0	1	
7:45 AM	0	0	5	66	0	3	5	0	1	41	0	2					123	511	0	0	2	
8:00 AM	0	0	7	74	0	6	4	0	0	37	0	5					133	553	0	0	1	
8:15 AM	0	0	6	72	0	4	2	0	0	33	0	5					122		0	0	0	
8:30 AM	0	0	5	86	0	4	6	0	0	30	0	2					133		0	0	2	
8:45 AM	0	0	8	115	0	2	6	0	0	29	0	5					165		0	0	1	

Peak Rolling Hour Flow Rates

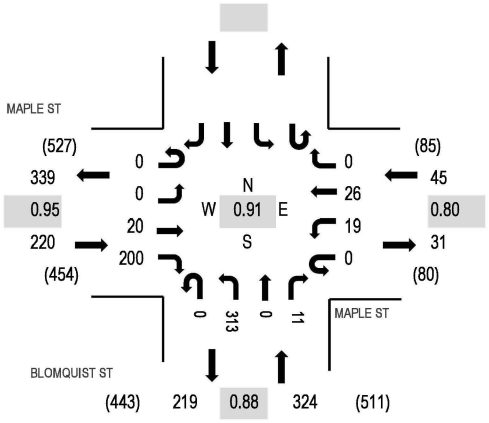
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	0	0					1
Lights	0	0	25	332	0	16	16	0	0	123	0	15					527
Mediums	0	0	1	14	0	0	2	0	0	6	0	2					25
Total	0	0	26	347	0	16	18	0	0	129	0	17					553

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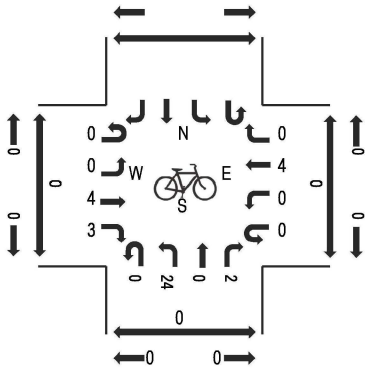
(303) 216-2439
www.alltrafficdata.net

Location: 6 BLOMQUIST ST & MAPLE ST PM
Date: Tuesday, September 10, 2019
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

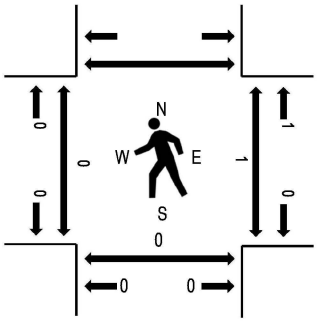
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAPLE ST Eastbound				MAPLE ST Westbound				BLOMQUIST ST Northbound				Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	1	0	11	54	0	10	10	0	0	34	0	13					133	503	0	0	0	
4:15 PM	0	0	5	57	0	3	4	0	0	48	0	3					120	508	0	0	0	
4:30 PM	0	0	2	62	0	5	3	0	0	38	0	2					112	549	0	0	0	
4:45 PM	0	0	6	54	0	2	6	0	0	68	0	2					138	589	0	0	0	
5:00 PM	0	0	4	46	0	6	7	0	0	71	0	4					138	547	0	1	0	
5:15 PM	0	0	7	57	0	3	7	0	0	84	0	3					161		0	0	0	
5:30 PM	0	0	3	43	0	8	6	0	0	90	0	2					152		0	0	0	
5:45 PM	0	0	11	31	0	2	3	0	0	47	0	2					96		0	0	1	

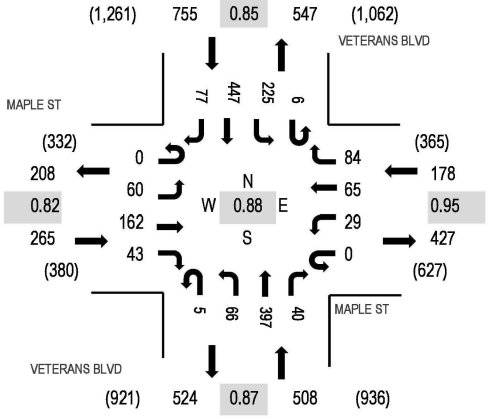
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1					1
Lights	0	0	20	193	0	19	26	0	0	309	0	10					577
Mediums	0	0	0	7	0	0	0	0	0	4	0	0					11
Total	0	0	20	200	0	19	26	0	0	313	0	11					589

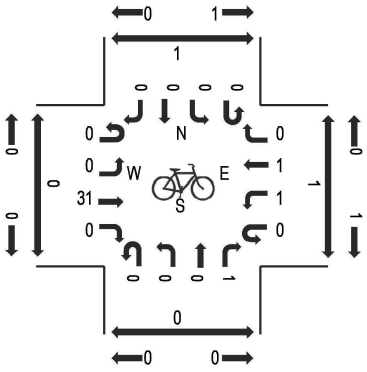
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 7 VETERANS BLVD & MAPLE ST AM
Date: Tuesday, September 10, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

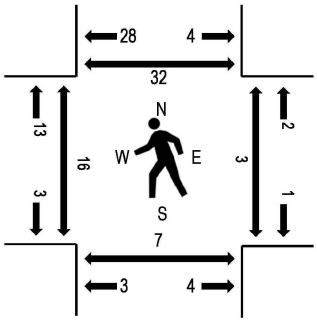
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAPLE ST Eastbound				MAPLE ST Westbound				VETERANS BLVD Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	7	6	0	8	12	27	1	5	67	9	1	11	62	9	230	1,236	2	0	1	6
7:15 AM	0	7	10	3	0	4	13	30	0	8	84	4	1	26	85	16	291	1,371	12	1	2	4
7:30 AM	0	10	17	10	0	4	18	28	1	9	106	7	3	32	79	4	328	1,484	5	0	2	8
7:45 AM	0	8	22	10	0	5	15	23	1	6	113	7	2	48	118	9	387	1,610	5	2	0	10
8:00 AM	0	14	42	8	0	6	23	21	0	9	88	10	2	50	80	12	365	1,706	4	0	3	11
8:15 AM	0	18	35	12	0	7	14	17	1	19	92	11	1	51	105	21	404		7	0	2	6
8:30 AM	0	17	34	4	0	2	10	33	1	21	101	9	1	61	139	21	454		3	0	1	7
8:45 AM	0	11	51	19	0	14	18	13	3	17	116	10	2	63	123	23	483		2	3	1	8

Peak Rolling Hour Flow Rates

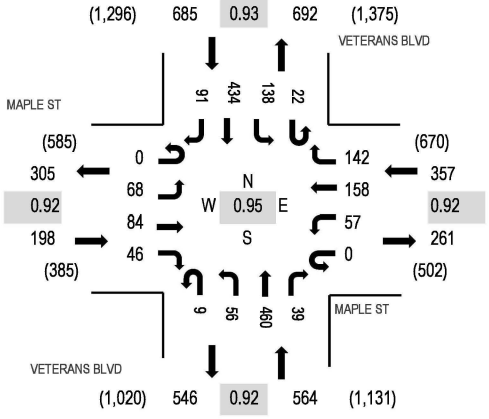
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	1	0	0	0	0	0	1	0	0	4	0	7
Lights	0	60	151	42	0	26	59	80	5	63	383	35	6	222	425	74	1,631
Mediums	0	0	10	1	0	2	6	4	0	3	14	4	0	3	18	3	68
Total	0	60	162	43	0	29	65	84	5	66	397	40	6	225	447	77	1,706

All Traffic Data Services Inc.

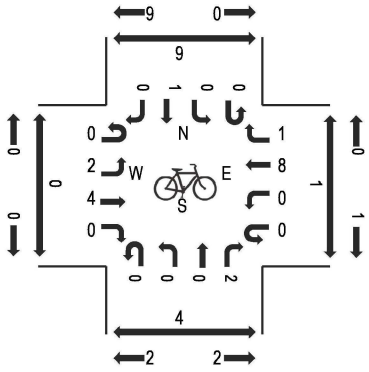
(303) 216-2439
www.alltrafficdata.net

Location: 7 VETERANS BLVD & MAPLE ST PM
Date: Tuesday, September 10, 2019
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

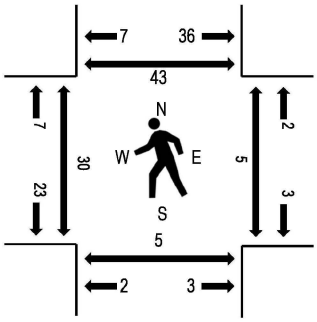
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAPLE ST Eastbound				MAPLE ST Westbound				VETERANS BLVD Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	15	19	17	0	12	27	32	1	15	111	13	4	40	90	29	425	1,745	9	5	4	11
4:15 PM	0	18	18	19	0	10	28	31	2	11	124	10	1	42	113	31	458	1,797	6	1	1	6
4:30 PM	0	21	18	8	0	17	33	27	3	16	114	6	4	35	111	21	434	1,804	13	4	2	22
4:45 PM	0	11	27	12	0	11	34	43	2	16	115	9	2	33	88	25	428	1,779	7	0	1	7
5:00 PM	0	15	13	13	0	21	37	31	4	15	130	11	8	31	129	19	477	1,737	6	1	1	6
5:15 PM	0	21	26	13	0	8	54	41	0	9	101	13	8	39	106	26	465		4	0	1	8
5:30 PM	0	20	21	5	0	10	46	45	2	15	117	9	0	26	81	12	409		4	1	0	10
5:45 PM	0	11	12	12	0	9	31	32	0	12	119	6	3	25	91	23	386		3	0	1	4

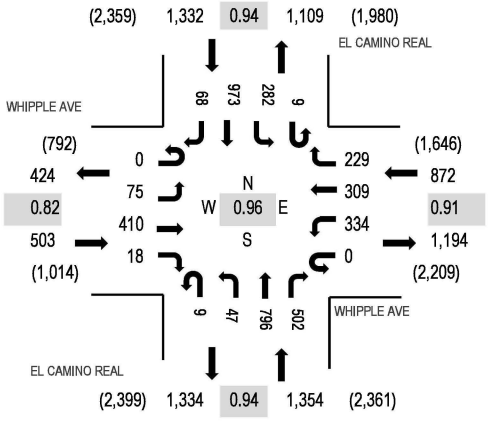
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	67	80	46	0	57	153	139	9	55	453	38	22	134	430	90	1,773
Mediums	0	0	4	0	0	0	5	3	0	1	7	1	0	4	4	1	30
Total	0	68	84	46	0	57	158	142	9	56	460	39	22	138	434	91	1,804

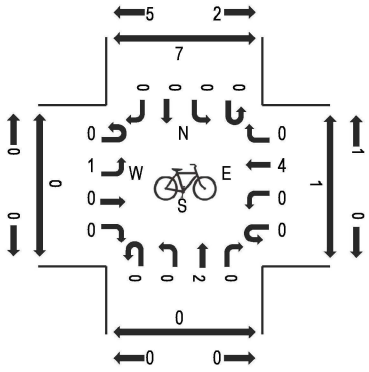
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 1 EL CAMINO REAL & WHIPPLE AVE AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM

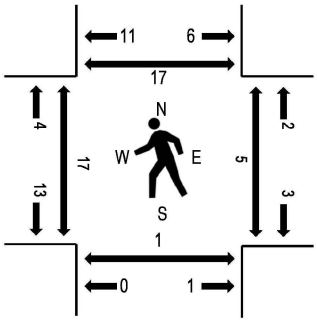
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				EL CAMINO REAL Northbound				EL CAMINO REAL Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	15	80	4	0	76	58	36	1	2	106	58	3	49	125	17	630	3,379	0	1	1	5
7:15 AM	0	26	110	6	0	74	58	43	0	6	142	78	3	42	198	10	796	3,690	4	5	0	4
7:30 AM	0	12	118	5	0	99	97	56	3	9	175	100	3	56	160	22	915	3,921	4	1	0	9
7:45 AM	0	19	141	4	0	77	86	87	0	13	200	106	3	52	234	16	1,038	4,061	3	2	1	6
8:00 AM	0	16	78	6	0	80	72	47	0	17	200	119	3	65	222	16	941	4,001	3	2	0	5
8:15 AM	0	20	97	4	0	97	68	49	2	10	192	132	2	84	251	19	1,027		6	1	0	4
8:30 AM	0	20	94	4	0	80	83	46	7	7	204	145	1	81	266	17	1,055		5	0	0	2
8:45 AM	0	21	101	13	0	73	66	38	1	8	191	127	1	96	227	15	978		3	0	0	10

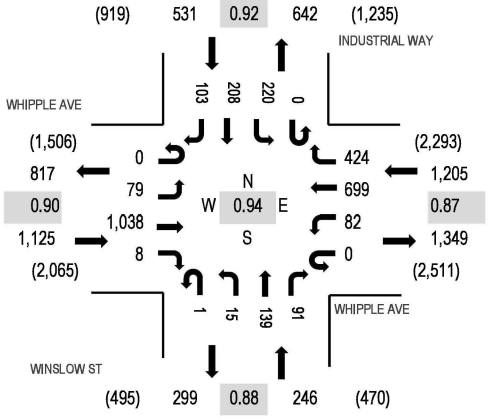
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	2	0	2	0	0	4	0	0	1	2	0	12
Lights	0	74	406	17	0	314	302	217	9	44	764	492	9	274	937	63	3,922
Mediums	0	1	3	1	0	18	7	10	0	3	28	10	0	7	34	5	127
Total	0	75	410	18	0	334	309	229	9	47	796	502	9	282	973	68	4,061

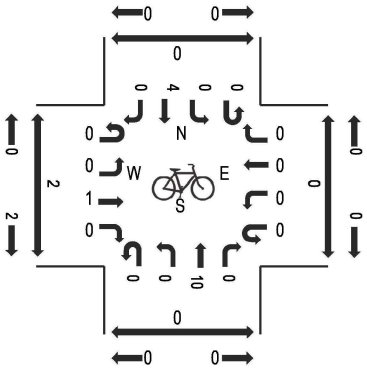
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 2 WINSLOW ST & WHIPPLE AVE AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

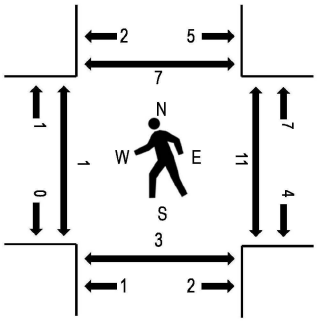
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				WINSLOW ST Northbound				INDUSTRIAL WAY Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	10	167	1	0	16	136	108	0	3	21	24	0	37	18	13	554	2,730	1	0	1	1
7:15 AM	0	17	202	4	0	9	167	115	0	5	24	26	0	40	27	13	649	2,902	0	0	1	0
7:30 AM	0	24	219	3	0	15	172	106	0	6	20	24	0	52	36	22	699	3,026	1	0	0	1
7:45 AM	0	24	288	1	0	23	209	118	0	3	41	20	0	44	35	22	828	3,107	0	3	1	2
8:00 AM	0	16	230	4	0	16	155	106	1	3	31	22	0	58	62	22	726	3,017	1	4	1	4
8:15 AM	0	23	243	3	0	21	163	96	0	6	33	33	0	63	55	34	773		0	4	1	1
8:30 AM	0	16	277	0	0	22	172	104	0	3	34	16	0	55	56	25	780		0	0	0	0
8:45 AM	0	21	271	1	0	21	128	95	0	2	32	37	0	63	45	22	738		0	1	1	3

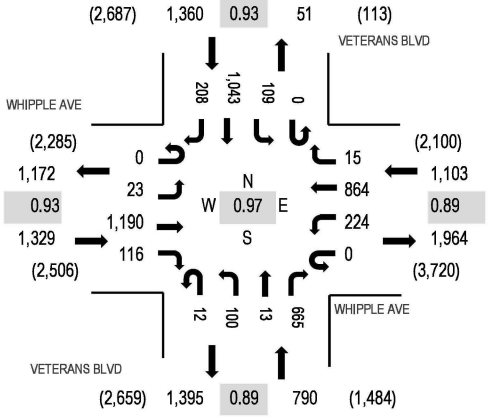
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	0	0	0	4	3	0	0	0	0	0	3	1	5	18
Lights	0	78	1,024	7	0	81	671	402	1	15	136	85	0	203	196	91	2,990
Mediums	0	1	12	1	0	1	24	19	0	0	3	6	0	14	11	7	99
Total	0	79	1,038	8	0	82	699	424	1	15	139	91	0	220	208	103	3,107

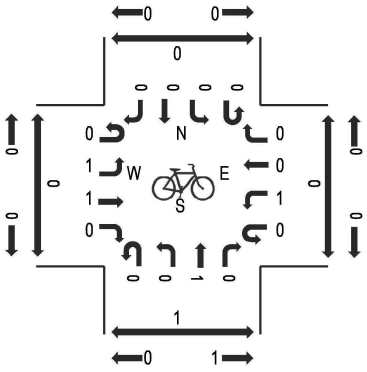
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 3 VETERANS BLVD & WHIPPLE AVE AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

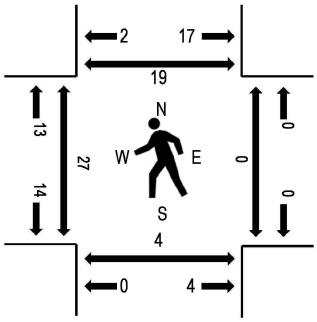
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				VETERANS BLVD Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	4	218	19	0	51	194	3	0	17	6	119	0	38	210	64	943	4,265	2	0	0	3
7:15 AM	0	6	235	14	0	46	199	5	1	20	2	134	0	24	254	67	1,007	4,451	2	0	0	2
7:30 AM	0	8	279	28	0	43	214	7	1	21	4	175	0	27	252	71	1,130	4,551	3	0	0	5
7:45 AM	0	4	304	31	0	65	250	4	2	28	2	181	0	25	237	52	1,185	4,582	0	0	1	1
8:00 AM	0	11	285	23	0	59	246	4	0	20	3	142	0	26	271	39	1,129	4,512	11	0	2	10
8:15 AM	0	5	281	22	0	56	181	4	2	26	5	158	0	33	273	61	1,107		15	0	0	7
8:30 AM	0	3	320	40	0	44	187	3	8	26	3	184	0	25	262	56	1,161		1	0	1	1
8:45 AM	0	8	312	46	0	55	175	5	1	24	4	165	0	30	243	47	1,115		7	0	1	8

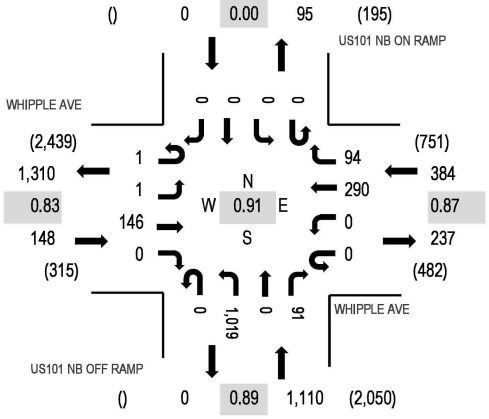
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	6	0	0	1	4	0	0	0	0	2	0	0	3	1	17
Lights	0	21	1,163	109	0	217	822	15	11	96	13	648	0	103	1,023	202	4,443
Mediums	0	2	21	7	0	6	38	0	1	4	0	15	0	6	17	5	122
Total	0	23	1,190	116	0	224	864	15	12	100	13	665	0	109	1,043	208	4,582

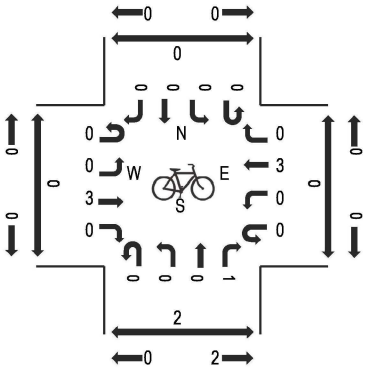
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 4 US101 NB OFF RAMP & WHIPPLE AVE AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

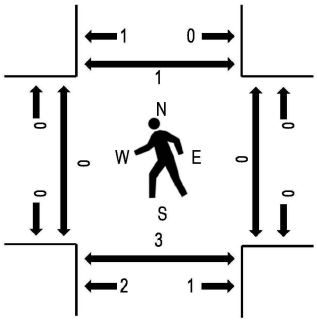
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				US101 NB OFF RAMP Northbound				US101 NB ON RAMP Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	44	0	0	0	48	16	0	221	0	15	0	0	0	0	344	1,562	0	0	1	0
7:15 AM	0	0	37	0	0	0	55	19	0	225	0	21	0	0	0	0	357	1,642	0	0	0	0
7:30 AM	0	0	36	0	0	0	78	21	0	255	0	19	0	0	0	0	409	1,632	0	0	1	0
7:45 AM	0	0	35	0	0	0	80	26	0	287	0	24	0	0	0	0	452	1,599	0	0	1	0
8:00 AM	1	1	38	0	0	0	77	28	0	252	0	27	0	0	0	0	424	1,554	0	0	1	1
8:15 AM	0	0	32	0	0	0	65	24	0	214	0	12	0	0	0	0	347		0	0	3	0
8:30 AM	0	0	42	0	0	0	78	19	0	211	0	26	0	0	0	0	376		0	0	2	0
8:45 AM	0	0	49	0	0	0	77	40	0	215	1	25	0	0	0	0	407		0	0	3	0

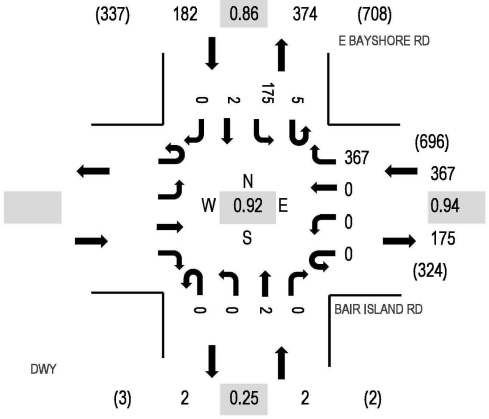
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	6	0	0	0	0	0	0	7
Lights	1	1	145	0	0	0	283	94	0	980	0	89	0	0	0	0	1,593
Mediums	0	0	1	0	0	0	6	0	0	33	0	2	0	0	0	0	42
Total	1	1	146	0	0	0	290	94	0	1,019	0	91	0	0	0	0	1,642

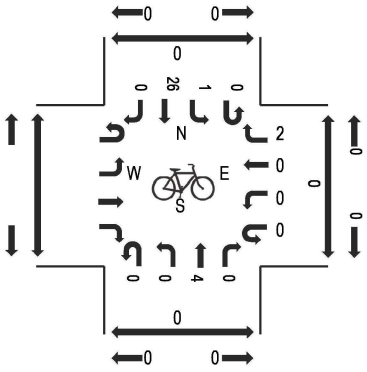
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 5 DWY & BAIR ISLAND RD AM
Date: Tuesday, September 10, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

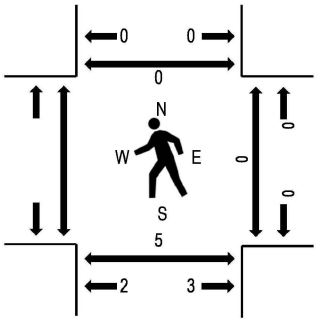
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BAIR ISLAND RD Eastbound				BAIR ISLAND RD Westbound				DWY Northbound				E BAYSHORE RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM					0	0	0	57	0	0	0	0	0	39	1	0	97	484		0	1	0
7:15 AM					0	0	0	76	0	0	0	0	3	35	0	0	114	517		0	1	0
7:30 AM					1	0	0	94	0	0	0	0	1	32	0	0	128	540		0	0	0
7:45 AM					0	0	0	101	0	0	0	0	2	42	0	0	145	546		0	0	0
8:00 AM					0	0	0	89	0	0	0	0	1	40	0	0	130	551		0	0	0
8:15 AM					0	0	0	96	0	0	0	0	0	40	1	0	137			0	0	0
8:30 AM					0	0	0	87	0	0	0	0	1	46	0	0	134			0	1	0
8:45 AM					0	0	0	95	0	0	2	0	3	49	1	0	150			0	4	0

Peak Rolling Hour Flow Rates

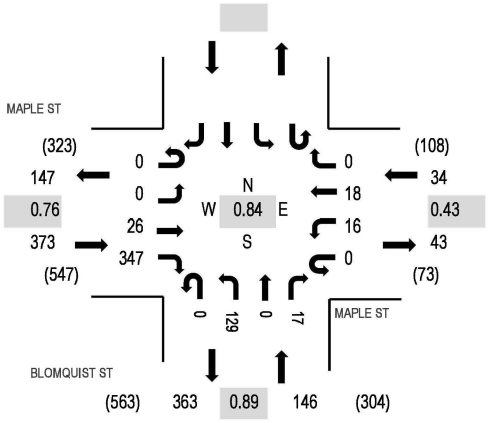
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	0	0	0	1	0	1
Lights					0	0	0	361	0	0	1	0	4	169	1	0	536
Mediums					0	0	0	6	0	0	1	0	1	6	0	0	14
Total					0	0	0	367	0	0	2	0	5	175	2	0	551

All Traffic Data Services Inc.

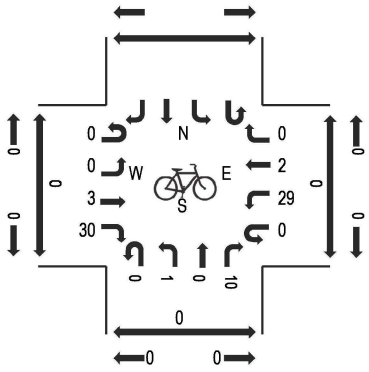
(303) 216-2439
www.alltrafficdata.net

Location: 6 BLOMQUIST ST & MAPLE ST AM
Date: Tuesday, September 10, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

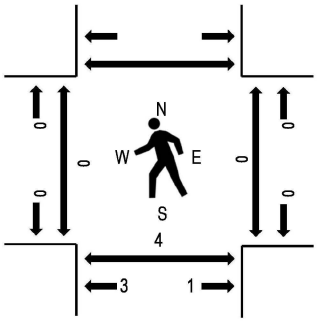
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAPLE ST Eastbound				MAPLE ST Westbound				BLOMQUIST ST Northbound				Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	2	25	0	26	17	0	0	20	0	5					95	406	0	0	0	
7:15 AM	0	0	4	29	0	9	6	0	0	38	0	2					88	444	0	0	0	
7:30 AM	0	0	4	39	0	2	6	0	0	43	0	6					100	478	0	0	1	
7:45 AM	0	0	5	66	0	3	5	0	1	41	0	2					123	511	0	0	2	
8:00 AM	0	0	7	74	0	6	4	0	0	37	0	5					133	553	0	0	1	
8:15 AM	0	0	6	72	0	4	2	0	0	33	0	5					122		0	0	0	
8:30 AM	0	0	5	86	0	4	6	0	0	30	0	2					133		0	0	2	
8:45 AM	0	0	8	115	0	2	6	0	0	29	0	5					165		0	0	1	

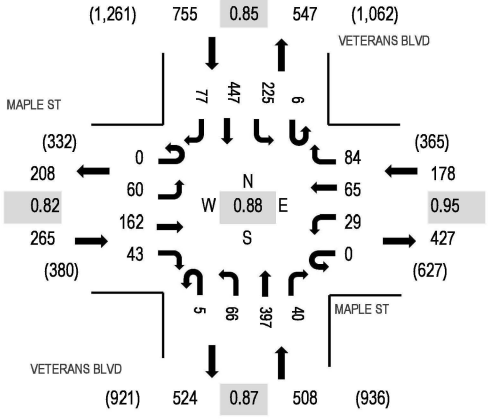
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	0	0	0	0	0	0	0					1
Lights	0	0	25	332	0	16	16	0	0	123	0	15					527
Mediums	0	0	1	14	0	0	2	0	0	6	0	2					25
Total	0	0	26	347	0	16	18	0	0	129	0	17					553

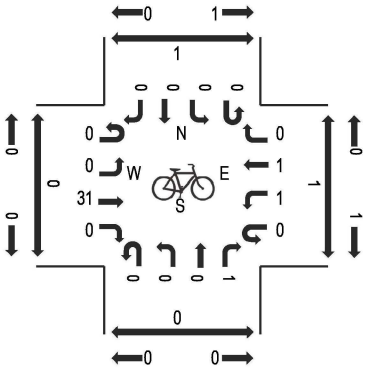
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 7 VETERANS BLVD & MAPLE ST AM
Date: Tuesday, September 10, 2019
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM

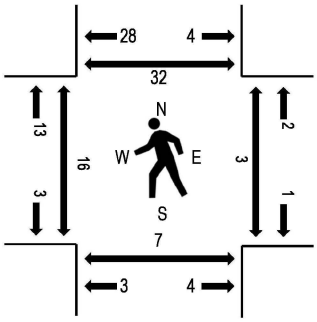
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MAPLE ST Eastbound				MAPLE ST Westbound				VETERANS BLVD Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	5	7	6	0	8	12	27	1	5	67	9	1	11	62	9	230	1,236	2	0	1	6
7:15 AM	0	7	10	3	0	4	13	30	0	8	84	4	1	26	85	16	291	1,371	12	1	2	4
7:30 AM	0	10	17	10	0	4	18	28	1	9	106	7	3	32	79	4	328	1,484	5	0	2	8
7:45 AM	0	8	22	10	0	5	15	23	1	6	113	7	2	48	118	9	387	1,610	5	2	0	10
8:00 AM	0	14	42	8	0	6	23	21	0	9	88	10	2	50	80	12	365	1,706	4	0	3	11
8:15 AM	0	18	35	12	0	7	14	17	1	19	92	11	1	51	105	21	404		7	0	2	6
8:30 AM	0	17	34	4	0	2	10	33	1	21	101	9	1	61	139	21	454		3	0	1	7
8:45 AM	0	11	51	19	0	14	18	13	3	17	116	10	2	63	123	23	483		2	3	1	8

Peak Rolling Hour Flow Rates

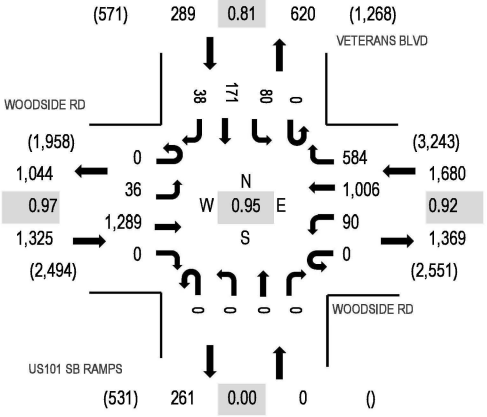
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	1	0	0	1	0	0	0	0	0	1	0	0	4	0	7
Lights	0	60	151	42	0	26	59	80	5	63	383	35	6	222	425	74	1,631
Mediums	0	0	10	1	0	2	6	4	0	3	14	4	0	3	18	3	68
Total	0	60	162	43	0	29	65	84	5	66	397	40	6	225	447	77	1,706

All Traffic Data Services Inc.

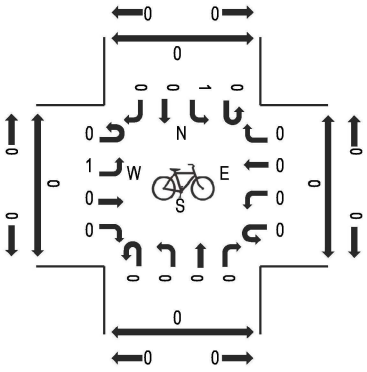
(303) 216-2439
www.alltrafficdata.net

Location: 8 US101 SB RAMPS & WOODSIDE RD AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

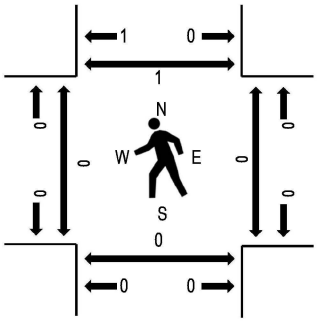
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WOODSIDE RD Eastbound				WOODSIDE RD Westbound				US101 SB RAMPS Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	12	259	0	0	35	255	112	0	0	0	0	0	9	31	4	717	3,215	0	0	0	0
7:15 AM	0	14	327	0	0	20	259	124	0	0	0	0	0	11	18	12	785	3,294	0	0	0	0
7:30 AM	0	7	315	0	0	26	252	150	0	0	0	0	0	31	60	9	850	3,260	0	0	0	0
7:45 AM	0	6	336	0	0	22	262	173	0	0	0	0	0	15	38	11	863	3,181	0	0	0	0
8:00 AM	0	9	311	0	0	22	233	137	0	0	0	0	0	23	55	6	796	3,093	0	0	0	1
8:15 AM	0	12	280	0	0	12	212	158	0	0	0	0	0	21	48	8	751		0	0	0	1
8:30 AM	0	20	281	0	0	27	226	142	0	0	0	0	0	20	48	7	771		0	0	0	0
8:45 AM	0	19	286	0	0	18	193	173	0	0	0	0	0	26	51	9	775		0	0	0	0

Peak Rolling Hour Flow Rates

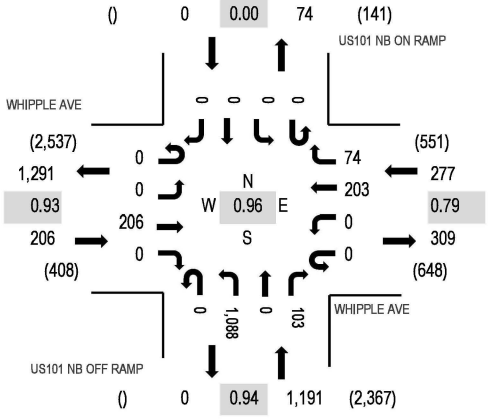
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	11	0	0	22	20	0	0	0	0	0	0	5	0	1	59
Lights	0	34	1,225	0	0	51	931	572	0	0	0	0	0	68	164	35	3,080
Mediums	0	2	53	0	0	17	55	12	0	0	0	0	0	7	7	2	155
Total	0	36	1,289	0	0	90	1,006	584	0	0	0	0	0	80	171	38	3,294

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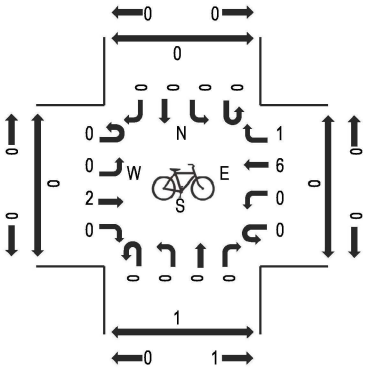
(303) 216-2439
www.alltrafficdata.net

Location: 4 US101 NB OFF RAMP & WHIPPLE AVE PM
Date: Tuesday, September 10, 2019
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:30 PM - 04:45 PM

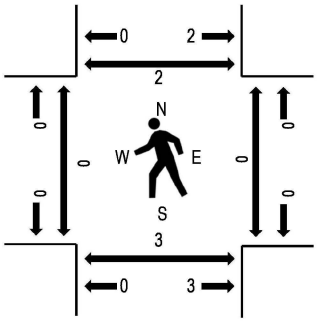
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

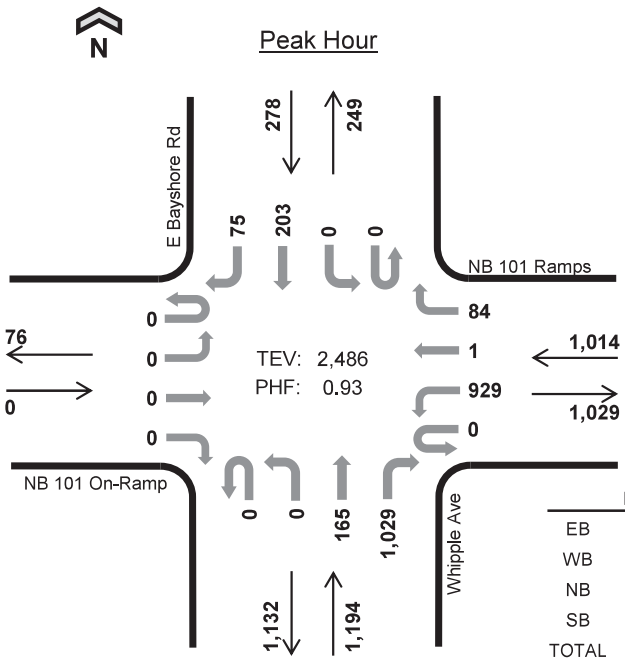
Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				US101 NB OFF RAMP Northbound				US101 NB ON RAMP Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	47	0	0	0	66	23	0	255	0	27	0	0	0	0	418	1,660	0	0	0	1
4:15 PM	0	0	40	0	0	0	47	13	0	271	0	23	0	0	0	0	394	1,661	0	0	0	0
4:30 PM	0	0	38	0	0	0	64	23	0	286	0	26	0	0	0	0	437	1,674	0	0	0	2
4:45 PM	0	0	44	0	0	0	34	13	0	290	0	30	0	0	0	0	411	1,659	0	0	0	0
5:00 PM	0	0	64	0	0	0	59	16	0	256	0	24	0	0	0	0	419	1,666	0	0	0	0
5:15 PM	0	0	60	0	0	0	46	22	0	256	0	23	0	0	0	0	407		0	0	3	0
5:30 PM	0	0	56	0	0	0	44	10	0	274	0	38	0	0	0	0	422		0	0	0	0
5:45 PM	0	0	59	0	1	0	49	21	0	240	0	48	0	0	0	0	418		0	0	0	0

Peak Rolling Hour Flow Rates

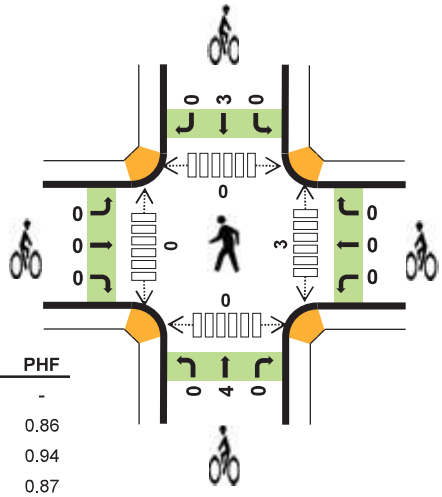
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Lights	0	0	203	0	0	0	201	74	0	1,073	0	100	0	0	0	0	1,651
Mediums	0	0	3	0	0	0	2	0	0	14	0	3	0	0	0	0	22
Total	0	0	206	0	0	0	203	74	0	1,088	0	103	0	0	0	0	1,674

Whipple Ave
NB 101 Ramps

Date: 05/25/2017
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	-	-
WB	3.6%	0.86
NB	2.8%	0.94
SB	2.5%	0.87
TOTAL	3.1%	0.93



Two-Hour Count Summaries

Interval Start		NB 101 On-Ramp Eastbound				NB 101 Ramps Westbound				Whipple Ave Northbound				E Bayshore Rd 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	0	0	0	0	213	0	30	0	0	38	183	0	0	27	19	510	0
7:15 AM		0	0	0	0	0	246	0	27	0	0	27	181	0	0	51	14	546	0
7:30 AM		0	0	0	0	0	217	0	22	0	0	37	233	0	0	44	22	575	0
7:45 AM		**0**	**0**	**0**	**0**	**0**	**249**	**0**	**25**	**0**	**0**	**32**	**284**	**0**	**0**	**33**	**23**	**646**	2,277
8:00 AM		**0**	**0**	**0**	**0**	**0**	**270**	**1**	**24**	**0**	**0**	**43**	**247**	**0**	**0**	**58**	**22**	**665**	2,432
8:15 AM		**0**	**0**	**0**	**0**	**0**	**214**	**0**	**20**	**0**	**0**	**41**	**244**	**0**	**0**	**59**	**17**	**595**	2,481
8:30 AM		**0**	**0**	**0**	**0**	**0**	**196**	**0**	**15**	**0**	**0**	**49**	**254**	**0**	**0**	**53**	**13**	**580**	**2,486**
8:45 AM		0	0	0	0	0	196	0	23	0	0	50	260	0	0	59	30	618	2,458
Count Total		0	0	0	0	0	1,801	1	186	0	0	317	1,886	0	0	384	160	4,735	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**929**	**1**	**84**	**0**	**0**	**165**	**1,029**	**0**	**0**	**203**	**75**	**2,486**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**7**	**0**	**0**	**4**	**30**	**0**	**0**	**4**	**3**	**77**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**3%**	**0%**	**8%**	**-**	**-**	**2%**	**3%**	**-**	**-**	**2%**	**4%**	**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	0	4	1	0	*5*	0	0	6	0	*6*	1	0	0	0	*1*
7:15 AM	0	10	4	6	*20*	0	0	1	2	*3*	1	0	0	0	*1*
7:30 AM	0	8	13	2	*23*	0	0	0	1	*1*	2	0	0	0	*2*
7:45 AM	**0**	**7**	**8**	**2**	***17***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**0**	**0**	*1*
8:00 AM	**0**	**10**	**8**	**3**	***21***	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**0**	**7**	**11**	**1**	***19***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**0**	**0**	*1*
8:30 AM	**0**	**12**	**7**	**1**	***20***	**0**	**0**	**3**	**0**	***3***	**1**	**0**	**0**	**0**	***1***
8:45 AM	0	10	7	1	*18*	0	0	1	0	*1*	1	0	0	0	*1*
Count Total	0	68	59	16	*143*	0	0	12	6	*18*	8	0	0	0	*8*
Peak Hour	**0**	**36**	**34**	**7**	***77***	**0**	**0**	**4**	**3**	***7***	**3**	**0**	**0**	**0**	***3***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	NB 101 On-Ramp				NB 101 Ramps				Whipple Ave				E Bayshore Rd				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	4	0	0	0	0	0	1	0	0	0	0	5	0
7:15 AM	0	0	0	0	0	9	0	1	0	0	3	1	0	0	5	1	20	0
7:30 AM	0	0	0	0	0	7	0	1	0	0	0	13	0	0	2	0	23	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**0**	**8**	**0**	**0**	**1**	**1**	**17**	65
8:00 AM	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**2**	**0**	**0**	**2**	**6**	**0**	**0**	**2**	**1**	**21**	81
8:15 AM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**3**	**0**	**0**	**1**	**10**	**0**	**0**	**1**	**0**	**19**	80
8:30 AM	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**1**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**1**	**20**	**77**
8:45 AM	0	0	0	0	0	10	0	0	0	0	1	6	0	0	1	0	18	78
Count Total	0	0	0	0	0	59	0	9	0	0	8	51	0	0	12	4	143	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**7**	**0**	**0**	**4**	**30**	**0**	**0**	**4**	**3**	**77**	**0**

Two-Hour Count Summaries - Bikes

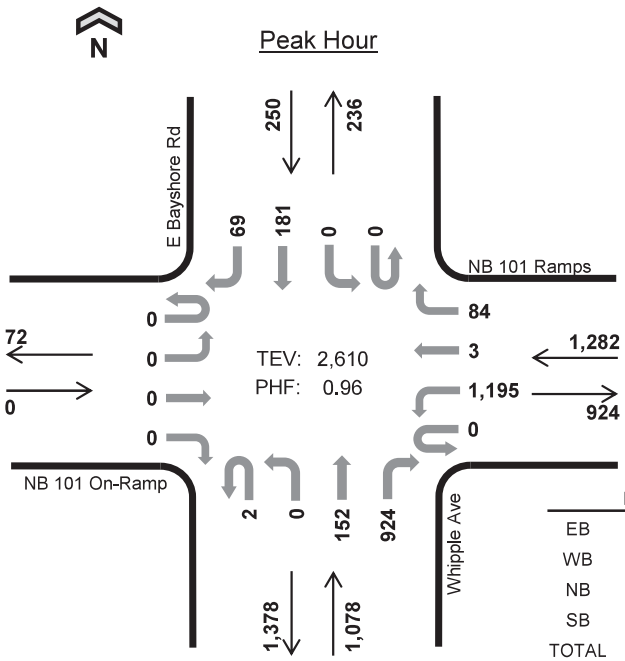
Interval Start	NB 101 On-Ramp			NB 101 Ramps			Whipple Ave			E Bayshore Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	6	0	0	0	0	6	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	2	0	3	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	11
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	7
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	5
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**7**
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	7
Count Total	0	0	0	0	0	0	0	12	0	0	6	0	18	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**3**	**0**	**7**	**0**

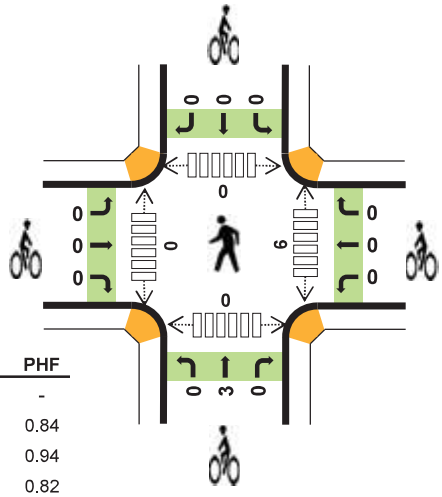
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Whipple Ave
NB 101 Ramps

Date: 05/25/2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	-	-
WB	1.9%	0.84
NB	0.7%	0.94
SB	1.6%	0.82
TOTAL	1.4%	0.96

Two-Hour Count Summaries

Interval Start		NB 101 On-Ramp Eastbound				NB 101 Ramps Westbound				Whipple Ave Northbound				E Bayshore Rd 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	0	0	0	0	202	1	19	0	0	38	253	0	0	41	26	580	0
4:15 PM		**0**	**0**	**0**	**0**	**0**	**247**	**0**	**21**	**0**	**0**	**35**	**239**	**0**	**0**	**31**	**16**	**589**	0
4:30 PM		**0**	**0**	**0**	**0**	**0**	**291**	**0**	**19**	**1**	**0**	**45**	**242**	**0**	**0**	**56**	**20**	**674**	0
4:45 PM		**0**	**0**	**0**	**0**	**0**	**363**	**0**	**17**	**1**	**0**	**34**	**202**	**0**	**0**	**33**	**18**	**668**	2,511
5:00 PM		**0**	**0**	**0**	**0**	**0**	**294**	**3**	**27**	**0**	**0**	**38**	**241**	**0**	**0**	**61**	**15**	**679**	**2,610**
5:15 PM		0	0	0	0	0	283	0	23	0	0	47	166	0	0	44	7	570	2,591
5:30 PM		0	0	0	0	0	305	1	16	0	0	42	173	0	0	39	6	582	2,499
5:45 PM		0	0	0	0	0	334	0	20	0	0	37	160	0	0	37	11	599	2,430
Count Total		0	0	0	0	0	2,319	5	162	2	0	316	1,676	0	0	342	119	4,941	0
Peak Hour	**All**	**0**	**0**	**0**	**0**	**0**	**1,195**	**3**	**84**	**2**	**0**	**152**	**924**	**0**	**0**	**181**	**69**	**2,610**	**0**
	HV	**0**	**0**	**0**	**0**	**0**	**21**	**1**	**2**	**0**	**0**	**1**	**7**	**0**	**0**	**3**	**1**	**36**	**0**
	HV%	**-**	**-**	**-**	**-**	**-**	**2%**	**33%**	**2%**	**0%**	**-**	**1%**	**1%**	**-**	**-**	**2%**	**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	0	7	4	0	*11*	0	0	0	1	*1*	1	0	0	0	*1*
4:15 PM	**0**	**7**	**3**	**1**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**6**	**1**	**2**	***9***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
4:45 PM	**0**	**6**	**4**	**1**	***11***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**0**	*1*
5:00 PM	**0**	**5**	**0**	**0**	***5***	**0**	**0**	**1**	**0**	***1***	**4**	**0**	**0**	**0**	***4***
5:15 PM	0	2	2	0	*4*	0	0	0	0	*0*	1	0	0	0	*1*
5:30 PM	0	4	1	0	*5*	0	0	0	1	*1*	2	0	0	0	*2*
5:45 PM	0	1	3	0	*4*	0	0	0	4	*4*	1	0	0	0	*1*
Count Total	0	38	18	4	*60*	0	0	3	6	*9*	11	0	0	0	*11*
Peak Hour	**0**	**24**	**8**	**4**	***36***	**0**	**0**	**3**	**0**	***3***	**6**	**0**	**0**	**0**	***6***

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	NB 101 On-Ramp				NB 101 Ramps				Whipple Ave				E Bayshore Rd				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	6	1	0	0	0	1	3	0	0	0	0	11	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**1**	**11**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**9**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**11**	42
5:00 PM	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**36**
5:15 PM	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	4	29
5:30 PM	0	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	5	25
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	4	18
Count Total	0	0	0	0	0	34	2	2	0	0	3	15	0	0	3	1	60	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**21**	**1**	**2**	**0**	**0**	**1**	**7**	**0**	**0**	**3**	**1**	**36**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	NB 101 On-Ramp			NB 101 Ramps			Whipple Ave			E Bayshore Rd			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**	**1**	**0**	**0**	**0**	**0**	**1**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	3
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**3**
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	1	0	1	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	4	6
Count Total	0	0	0	0	0	0	0	3	0	0	6	0	9	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**3**	**0**

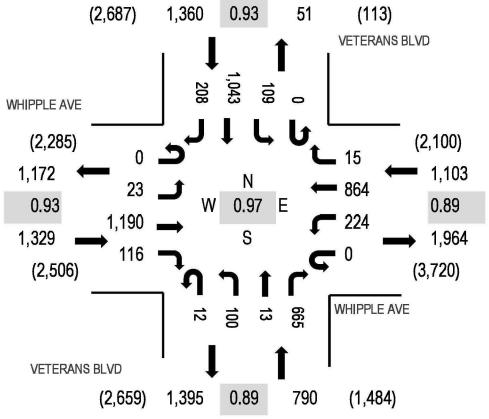
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Deon Fouche: 415 - 757 - 7714 deon.fouche@idaxdata.com

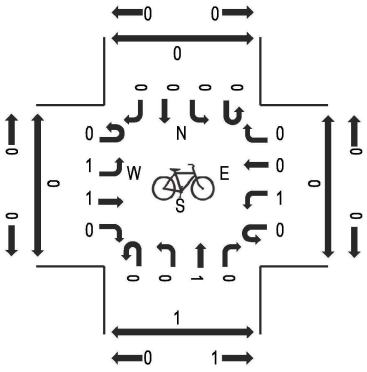
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 3 VETERANS BLVD & WHIPPLE AVE AM
Date: Tuesday, September 10, 2019
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

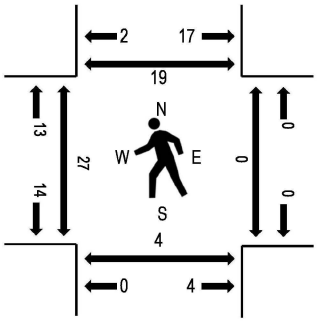
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				VETERANS BLVD Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	4	218	19	0	51	194	3	0	17	6	119	0	38	210	64	943	4,265	2	0	0	3
7:15 AM	0	6	235	14	0	46	199	5	1	20	2	134	0	24	254	67	1,007	4,451	2	0	0	2
7:30 AM	0	8	279	28	0	43	214	7	1	21	4	175	0	27	252	71	1,130	4,551	3	0	0	5
7:45 AM	0	4	304	31	0	65	250	4	2	28	2	181	0	25	237	52	1,185	4,582	0	0	1	1
8:00 AM	0	11	285	23	0	59	246	4	0	20	3	142	0	26	271	39	1,129	4,512	11	0	2	10
8:15 AM	0	5	281	22	0	56	181	4	2	26	5	158	0	33	273	61	1,107		15	0	0	7
8:30 AM	0	3	320	40	0	44	187	3	8	26	3	184	0	25	262	56	1,161		1	0	1	1
8:45 AM	0	8	312	46	0	55	175	5	1	24	4	165	0	30	243	47	1,115		7	0	1	8

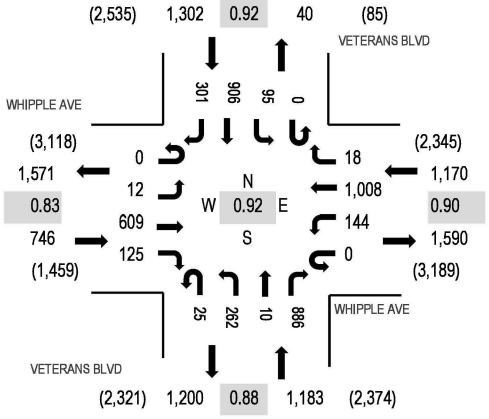
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	6	0	0	1	4	0	0	0	0	2	0	0	3	1	17
Lights	0	21	1,163	109	0	217	822	15	11	96	13	648	0	103	1,023	202	4,443
Mediums	0	2	21	7	0	6	38	0	1	4	0	15	0	6	17	5	122
Total	0	23	1,190	116	0	224	864	15	12	100	13	665	0	109	1,043	208	4,582

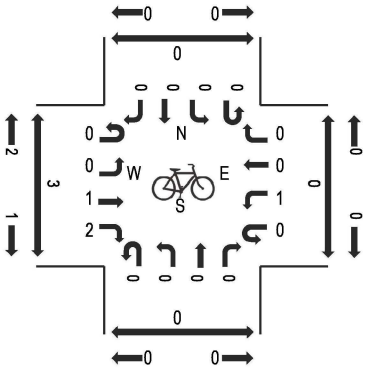
All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

Location: 3 VETERANS BLVD & WHIPPLE AVE PM
Date: Tuesday, September 10, 2019
Peak Hour: 04:00 PM - 05:00 PM
Peak 15-Minutes: 04:00 PM - 04:15 PM

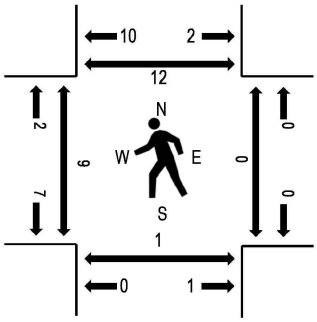
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	WHIPPLE AVE Eastbound				WHIPPLE AVE Westbound				VETERANS BLVD Northbound				VETERANS BLVD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	3	185	38	0	38	234	2	6	59	1	312	0	24	210	78	1,190	4,401	5	0	1	4
4:15 PM	0	5	142	32	0	33	249	4	8	76	3	197	0	26	244	82	1,101	4,333	0	0	0	1
4:30 PM	0	2	132	27	0	44	276	5	7	67	4	192	0	24	234	75	1,089	4,351	4	0	0	5
4:45 PM	0	2	150	28	0	29	249	7	4	60	2	185	0	21	218	66	1,021	4,339	0	0	0	2
5:00 PM	0	4	176	28	0	37	237	6	8	76	6	252	0	33	200	59	1,122	4,312	6	0	2	6
5:15 PM	0	5	158	18	0	46	235	4	4	72	5	211	0	36	241	84	1,119		0	1	0	2
5:30 PM	0	4	151	22	0	36	254	1	5	75	5	232	0	29	201	62	1,077		0	0	0	1
5:45 PM	1	1	123	22	0	44	273	2	9	63	2	166	0	32	200	56	994		1	0	0	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	3
Lights	0	12	600	123	0	140	992	17	25	261	10	881	0	94	897	296	4,348
Mediums	0	0	9	2	0	4	16	1	0	1	0	4	0	1	9	3	50
Total	0	12	609	125	0	144	1,008	18	25	262	10	886	0	95	906	301	4,401

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6280 San Ignacio Ave Suite C
San Jose, CA 95119
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Groups Printed- Vehicles

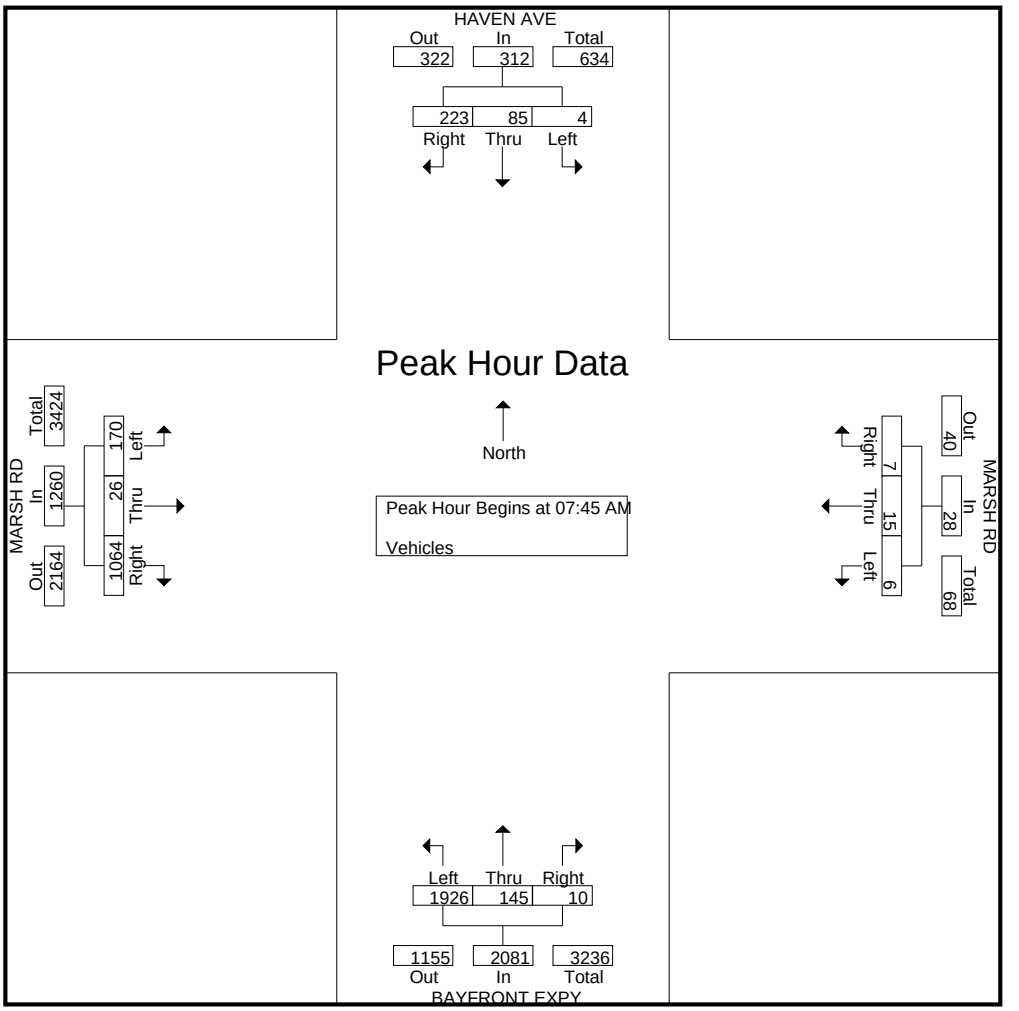
	HAVEN AVE Southbound					MARSH RD Westbound					BAYFRONT EXPY Northbound					MARSH RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	48	14	0	0	62	0	2	0	1	3	9	38	409	15	471	113	5	30	0	148	684
07:15 AM	57	19	0	0	76	0	1	0	1	2	5	36	450	9	500	217	4	30	0	251	829
07:30 AM	73	16	3	0	92	0	4	0	2	6	2	32	509	4	547	251	3	34	0	288	933
07:45 AM	65	27	2	0	94	2	5	3	4	14	5	45	509	7	566	265	7	42	0	314	988
Total	243	76	5	0	324	2	12	3	8	25	21	151	1877	35	2084	846	19	136	0	1001	3434
08:00 AM	72	21	0	0	93	4	2	0	1	7	1	22	407	3	433	235	4	38	0	277	810
08:15 AM	30	21	2	0	53	1	5	0	3	9	2	42	534	1	579	262	6	41	1	310	951
08:30 AM	56	16	0	0	72	0	3	3	0	6	2	36	476	1	515	302	9	49	0	360	953
08:45 AM	49	19	0	0	68	1	4	0	2	7	2	34	425	0	461	283	6	42	1	332	868
Total	207	77	2	0	286	6	14	3	6	29	7	134	1842	5	1988	1082	25	170	2	1279	3582
09:00 AM	64	18	0	0	82	1	4	1	1	7	3	33	360	0	396	201	2	44	2	249	734
09:15 AM	50	19	1	0	70	1	4	3	0	8	5	35	328	0	368	182	4	39	2	227	673
09:30 AM	39	13	0	1	53	1	6	2	3	12	4	22	310	2	338	240	9	34	0	283	686
09:45 AM	41	17	1	0	59	1	7	5	0	13	2	26	302	1	331	247	2	32	1	282	685
Total	194	67	2	1	264	4	21	11	4	40	14	116	1300	3	1433	870	17	149	5	1041	2778
Grand Total	644	220	9	1	874	12	47	17	18	94	42	401	5019	43	5505	2798	61	455	7	3321	9794
Apprch %	73.7	25.2	1	0.1		12.8	50	18.1	19.1		0.8	7.3	91.2	0.8		84.3	1.8	13.7	0.2		
Total %	6.6	2.2	0.1	0	8.9	0.1	0.5	0.2	0.2	1	0.4	4.1	51.2	0.4	56.2	28.6	0.6	4.6	0.1	33.9	

	HAVEN AVE Southbound				MARSH RD Westbound				BAYFRONT EXPY Northbound				MARSH RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	65	**27**	**2**	**94**	2	**5**	**3**	**10**	**5**	**45**	509	559	265	7	42	314	**977**
08:00 AM	**72**	21	0	93	**4**	2	0	6	1	22	407	430	235	4	38	277	806
08:15 AM	30	21	2	53	1	5	0	6	2	42	**534**	**578**	262	6	41	309	946
08:30 AM	56	16	0	72	0	3	3	6	2	36	476	514	**302**	**9**	**49**	**360**	952
Total Volume	223	85	4	312	7	15	6	28	10	145	1926	2081	1064	26	170	1260	3681
% App. Total	71.5	27.2	1.3		25	53.6	21.4		0.5	7	92.6		84.4	2.1	13.5		
PHF	.774	.787	.500	.830	.438	.750	.500	.700	.500	.806	.902	.900	.881	.722	.867	.875	.942

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File Name : 42PM FINAL
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Groups Printed- Vehicles

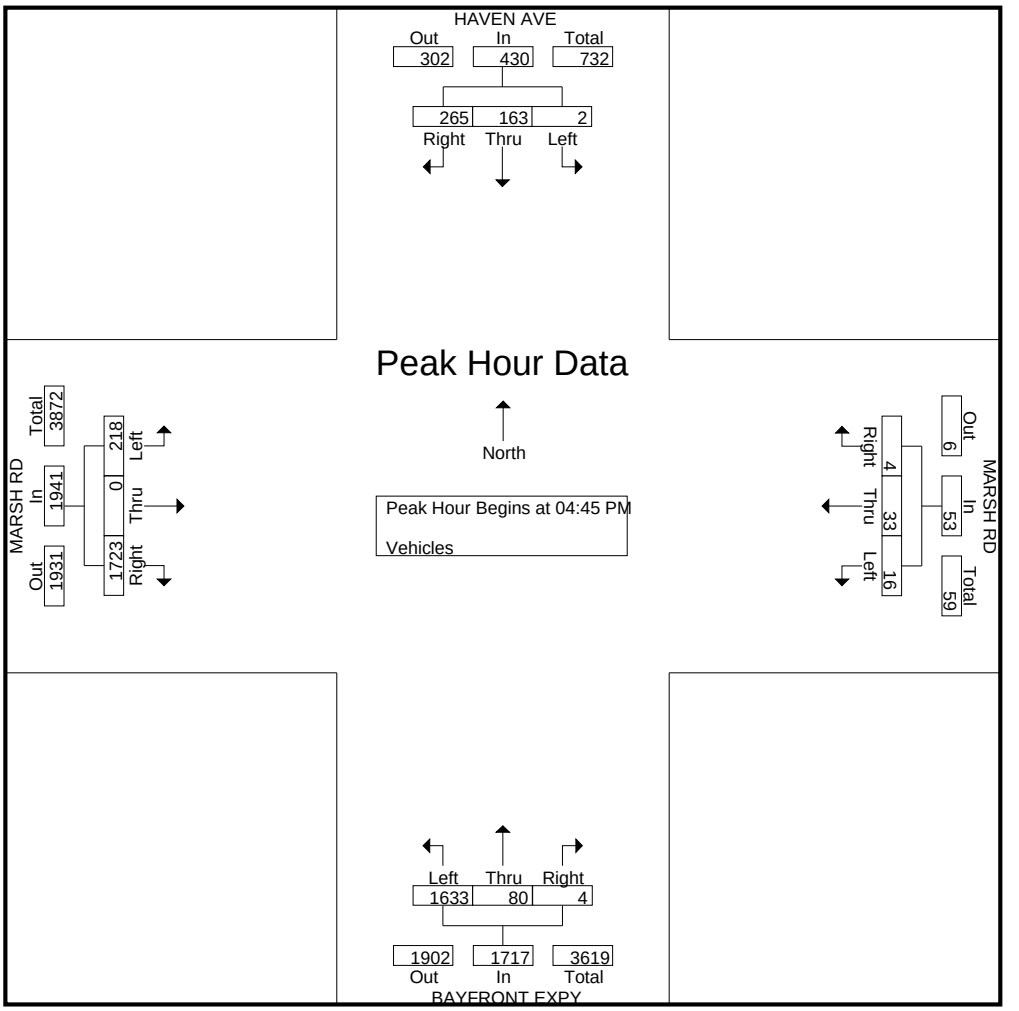
	HAVEN AVE Southbound					MARSH RD Westbound					BAYFRONT EXPY Northbound					MARSH RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	56	42	2	1	101	2	26	7	1	36	2	14	366	1	383	373	0	59	0	432	952
04:15 PM	53	40	1	1	95	3	14	3	1	21	2	24	325	1	352	406	0	43	3	452	920
04:30 PM	46	49	0	0	95	1	10	1	0	12	3	9	334	7	353	385	0	57	1	443	903
04:45 PM	59	44	2	0	105	1	11	5	3	20	3	15	415	0	433	396	0	48	0	444	1002
Total	214	175	5	2	396	7	61	16	5	89	10	62	1440	9	1521	1560	0	207	4	1771	3777
05:00 PM	44	45	0	1	90	0	14	7	2	23	1	21	400	0	422	468	0	54	0	522	1057
05:15 PM	76	40	0	0	116	2	6	0	1	9	0	30	399	0	429	471	0	48	1	520	1074
05:30 PM	86	34	0	1	121	1	2	4	1	8	0	14	419	0	433	388	0	68	0	456	1018
05:45 PM	64	40	0	0	104	0	0	0	1	1	0	17	358	0	375	321	0	34	1	356	836
Total	270	159	0	2	431	3	22	11	5	41	1	82	1576	0	1659	1648	0	204	2	1854	3985
06:00 PM	32	21	0	1	54	0	0	0	0	0	0	15	342	0	357	298	0	51	0	349	760
06:15 PM	64	22	0	0	86	0	0	0	1	1	0	13	301	0	314	307	0	31	0	338	739
06:30 PM	41	13	0	0	54	0	0	0	0	0	0	14	266	0	280	290	0	40	1	331	665
06:45 PM	48	29	0	0	77	0	0	0	1	1	0	16	237	0	253	255	0	34	0	289	620
Total	185	85	0	1	271	0	0	0	2	2	0	58	1146	0	1204	1150	0	156	1	1307	2784
Grand Total	669	419	5	5	1098	10	83	27	12	132	11	202	4162	9	4384	4358	0	567	7	4932	10546
Apprch %	60.9	38.2	0.5	0.5		7.6	62.9	20.5	9.1		0.3	4.6	94.9	0.2		88.4	0	11.5	0.1		
Total %	6.3	4	0	0	10.4	0.1	0.8	0.3	0.1	1.3	0.1	1.9	39.5	0.1	41.6	41.3	0	5.4	0.1	46.8	

	HAVEN AVE Southbound				MARSH RD Westbound				BAYFRONT EXPY Northbound				MARSH RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	59	44	**2**	105	1	11	5	17	**3**	15	415	**433**	396	0	48	444	999
05:00 PM	44	**45**	0	89	0	**14**	**7**	**21**	1	21	400	422	468	0	54	**522**	1054
05:15 PM	76	40	0	116	**2**	6	0	8	0	**30**	399	429	**471**	0	48	519	**1072**
05:30 PM	**86**	34	0	**120**	1	2	4	7	0	14	**419**	433	388	0	**68**	456	1016
Total Volume	265	163	2	430	4	33	16	53	4	80	1633	1717	1723	0	218	1941	4141
% App. Total	61.6	37.9	0.5		7.5	62.3	30.2		0.2	4.7	95.1		88.8	0	11.2		
PHF	.770	.906	.250	.896	.500	.589	.571	.631	.333	.667	.974	.991	.915	.000	.801	.930	.966

TRAFFIC DATA SERVICE

6280 San Ignacio Ave Suite C
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File Name : 42PM FINAL
Site Code : 00000042
Start Date : 12/15/2022
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TRAFFIC DATA SERVICE

6280 San Ignacio Ave Suite C
San Jose, CA 95119
tdsbay@cs.com

File Name : 45AM FINAL
Site Code : 00000045
Start Date : 12/15/2022
Page No : 1

Groups Printed- Vehicles

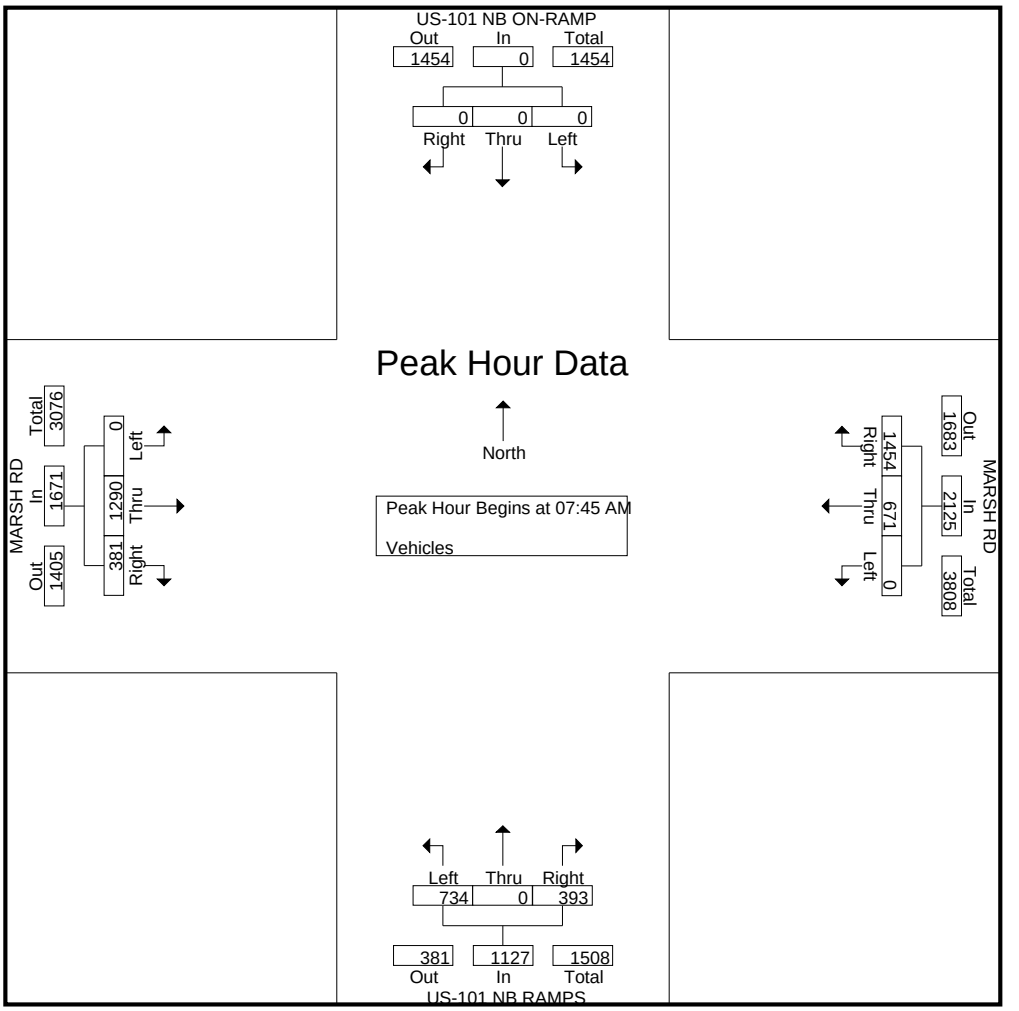
	US-101 NB ON-RAMP Southbound					MARSH RD Westbound					US-101 NB RAMPS Northbound					MARSH RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	316	144	0	0	460	52	0	165	0	217	60	158	0	0	218	895
07:15 AM	0	0	0	0	0	313	160	0	1	474	49	0	210	0	259	63	253	0	0	316	1049
07:30 AM	0	0	0	0	0	354	207	0	0	561	77	0	191	0	268	71	274	0	0	345	1174
07:45 AM	0	0	0	0	0	337	195	0	0	532	84	0	211	0	295	71	309	0	0	380	1207
Total	0	0	0	0	0	1320	706	0	1	2027	262	0	777	0	1039	265	994	0	0	1259	4325
08:00 AM	0	0	0	0	0	331	164	0	0	495	88	0	194	0	282	99	303	0	0	402	1179
08:15 AM	0	0	0	0	0	400	161	0	0	561	104	0	171	0	275	103	321	0	0	424	1260
08:30 AM	0	0	0	0	0	386	151	0	0	537	117	0	158	0	275	108	357	0	0	465	1277
08:45 AM	0	0	0	0	0	342	128	0	0	470	146	0	153	0	299	101	315	0	0	416	1185
Total	0	0	0	0	0	1459	604	0	0	2063	455	0	676	0	1131	411	1296	0	0	1707	4901
09:00 AM	0	0	0	0	0	335	129	0	0	464	146	0	126	0	272	93	289	0	0	382	1118
09:15 AM	0	0	0	0	0	266	141	0	0	407	131	0	119	0	250	61	223	0	0	284	941
09:30 AM	0	0	0	0	0	264	100	0	0	364	122	0	138	0	260	93	250	0	0	343	967
09:45 AM	0	0	0	0	0	237	106	0	1	344	130	0	106	1	237	82	266	0	0	348	929
Total	0	0	0	0	0	1102	476	0	1	1579	529	0	489	1	1019	329	1028	0	0	1357	3955
Grand Total	0	0	0	0	0	3881	1786	0	2	5669	1246	0	1942	1	3189	1005	3318	0	0	4323	13181
Apprch %	0	0	0	0		68.5	31.5	0	0		39.1	0	60.9	0		23.2	76.8	0	0		
Total %	0	0	0	0	0	29.4	13.5	0	0	43	9.5	0	14.7	0	24.2	7.6	25.2	0	0	32.8	

	US-101 NB ON-RAMP Southbound				MARSH RD Westbound				US-101 NB RAMPS Northbound				MARSH RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	337	**195**	0	532	84	0	**211**	**295**	71	309	0	380	1207
08:00 AM	0	0	0	0	331	164	0	495	88	0	194	282	99	303	0	402	1179
08:15 AM	0	0	0	0	**400**	161	0	**561**	104	0	171	275	103	321	0	424	1260
08:30 AM	0	0	0	0	386	151	0	537	**117**	0	158	275	**108**	**357**	0	**465**	**1277**
Total Volume	0	0	0	0	1454	671	0	2125	393	0	734	1127	381	1290	0	1671	4923
% App. Total	0	0	0		68.4	31.6	0		34.9	0	65.1		22.8	77.2	0		
PHF	.000	.000	.000	.000	.909	.860	.000	.947	.840	.000	.870	.955	.882	.903	.000	.898	.964

TRAFFIC DATA SERVICE

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File Name : 45AM FINAL
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6280 San Ignacio Ave Suite C
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File Name : 45PM FINAL
Site Code : 00000045
Start Date : 12/15/2022
Page No : 1

Groups Printed- Vehicles

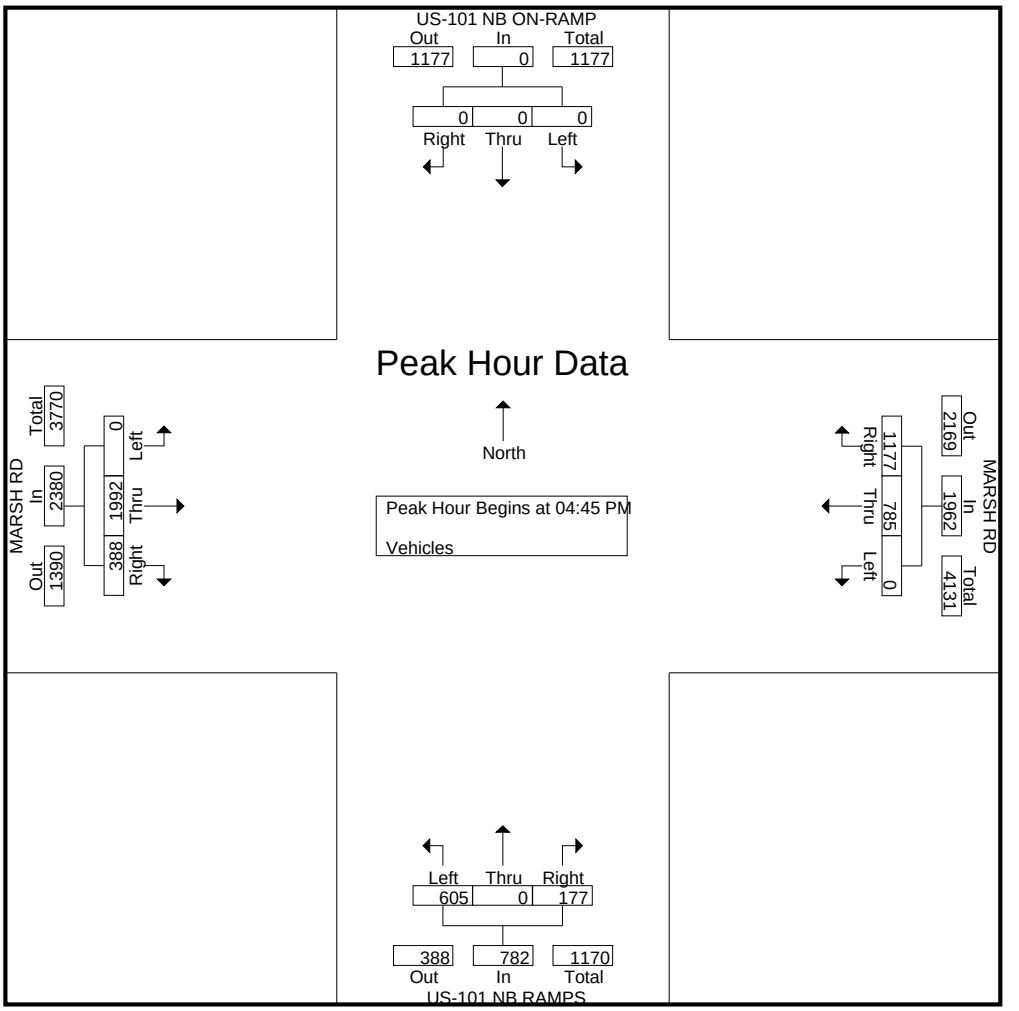
	US-101 NB ON-RAMP Southbound					MARSH RD Westbound					US-101 NB RAMPS Northbound					MARSH RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	283	165	0	0	448	49	0	139	0	188	116	488	0	0	604	1240
04:15 PM	0	0	0	0	0	261	157	0	0	418	39	0	177	0	216	134	500	0	0	634	1268
04:30 PM	0	0	0	0	0	257	165	0	0	422	35	0	173	0	208	95	462	0	0	557	1187
04:45 PM	0	0	0	0	0	304	225	0	0	529	43	0	169	1	213	102	498	0	0	600	1342
Total	0	0	0	0	0	1105	712	0	0	1817	166	0	658	1	825	447	1948	0	0	2395	5037
05:00 PM	0	0	0	0	0	304	142	0	0	446	45	0	149	0	194	116	519	0	0	635	1275
05:15 PM	0	0	0	0	0	308	195	0	0	503	41	0	134	0	175	79	521	0	0	600	1278
05:30 PM	0	0	0	0	0	261	223	0	1	485	48	0	153	0	201	91	454	0	0	545	1231
05:45 PM	0	0	0	0	0	264	189	0	0	453	48	0	145	0	193	45	360	0	0	405	1051
Total	0	0	0	0	0	1137	749	0	1	1887	182	0	581	0	763	331	1854	0	0	2185	4835
06:00 PM	0	0	0	0	0	207	146	0	0	353	44	0	97	0	141	91	351	0	0	442	936
06:15 PM	0	0	0	0	0	210	155	0	0	365	38	0	120	0	158	67	344	0	0	411	934
06:30 PM	0	0	0	0	0	164	118	0	0	282	30	0	111	0	141	79	313	0	0	392	815
06:45 PM	0	0	0	0	0	179	115	0	1	295	32	0	99	0	131	96	288	0	0	384	810
Total	0	0	0	0	0	760	534	0	1	1295	144	0	427	0	571	333	1296	0	0	1629	3495
Grand Total	0	0	0	0	0	3002	1995	0	2	4999	492	0	1666	1	2159	1111	5098	0	0	6209	13367
Apprch %	0	0	0	0		60.1	39.9	0	0		22.8	0	77.2	0		17.9	82.1	0	0		
Total %	0	0	0	0	0	22.5	14.9	0	0	37.4	3.7	0	12.5	0	16.2	8.3	38.1	0	0	46.5	

	US-101 NB ON-RAMP Southbound				MARSH RD Westbound				US-101 NB RAMPS Northbound				MARSH RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	0	0	0	304	**225**	0	**529**	43	0	**169**	**212**	102	498	0	600	**1341**
05:00 PM	0	0	0	0	304	142	0	446	45	0	149	194	**116**	519	0	**635**	1275
05:15 PM	0	0	0	0	**308**	195	0	503	41	0	134	175	79	**521**	0	600	1278
05:30 PM	0	0	0	0	261	223	0	484	**48**	0	153	201	91	454	0	545	1230
Total Volume	0	0	0	0	1177	785	0	1962	177	0	605	782	388	1992	0	2380	5124
% App. Total	0	0	0		60	40	0		22.6	0	77.4		16.3	83.7	0		
PHF	.000	.000	.000	.000	.955	.872	.000	.927	.922	.000	.895	.922	.836	.956	.000	.937	.955

TRAFFIC DATA SERVICE

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File Name : 45PM FINAL
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File Name : 44AM FINAL
Site Code : 00000044
Start Date : 12/15/2022
Page No : 1

Groups Printed- Vehicles

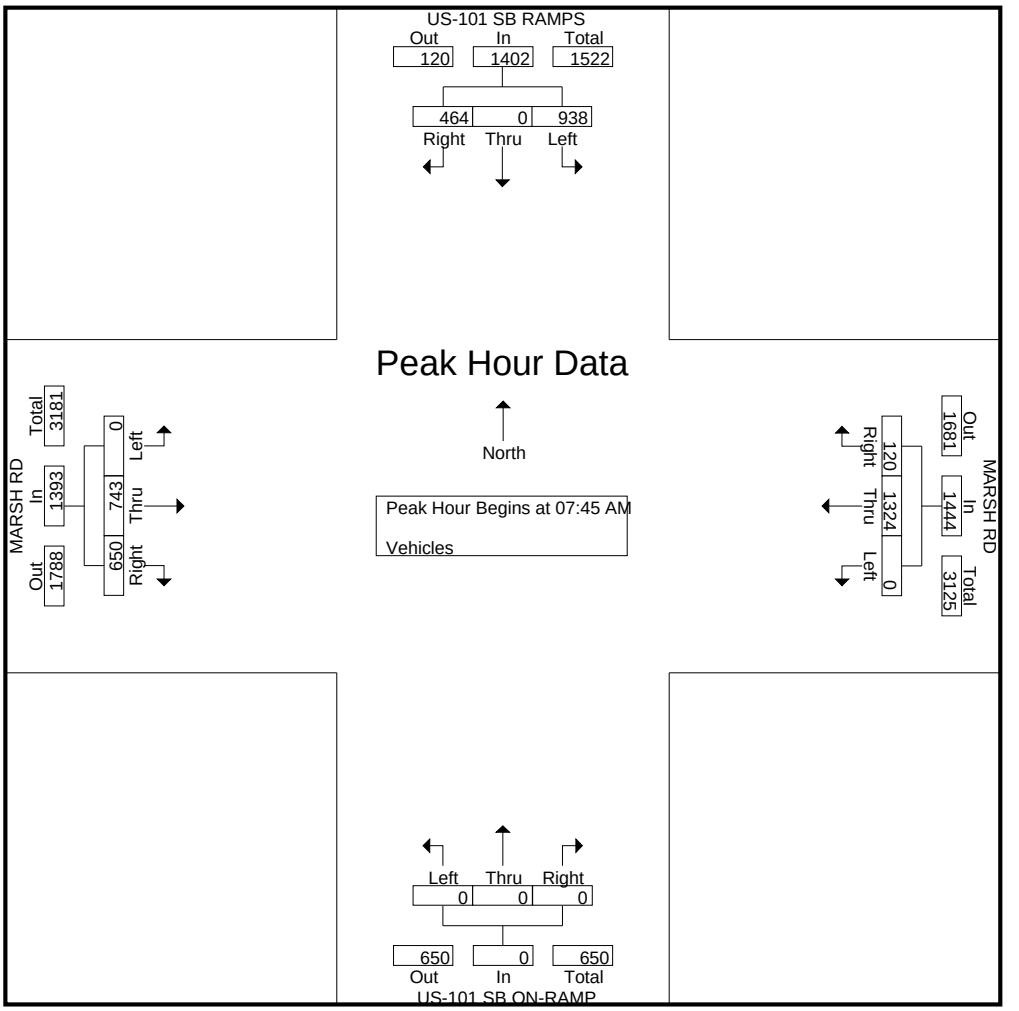
	US-101 SB RAMPS Southbound					MARSH RD Westbound					US-101 SB ON-RAMP Northbound					MARSH RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	58	0	126	0	184	26	277	0	0	303	0	0	0	0	0	108	99	0	0	207	694
07:15 AM	83	0	186	1	270	34	334	0	0	368	0	0	0	0	0	135	121	0	0	256	894
07:30 AM	118	0	225	0	343	34	338	0	0	372	0	0	0	0	0	160	143	0	0	303	1018
07:45 AM	116	0	234	0	350	25	372	0	0	397	0	0	0	0	0	192	171	0	0	363	1110
Total	375	0	771	1	1147	119	1321	0	0	1440	0	0	0	0	0	595	534	0	0	1129	3716
08:00 AM	116	0	221	0	337	35	337	0	0	372	0	0	0	0	0	162	167	0	0	329	1038
08:15 AM	125	0	231	0	356	30	310	0	0	340	0	0	0	0	0	163	194	0	0	357	1053
08:30 AM	107	0	252	0	359	30	305	0	0	335	0	0	0	0	0	133	211	0	0	344	1038
08:45 AM	154	0	229	0	383	21	273	0	0	294	0	0	0	0	0	123	178	0	0	301	978
Total	502	0	933	0	1435	116	1225	0	0	1341	0	0	0	0	0	581	750	0	0	1331	4107
09:00 AM	113	0	214	0	327	21	241	0	0	262	0	0	0	0	0	88	149	0	0	237	826
09:15 AM	110	0	174	0	284	28	228	0	0	256	0	0	0	0	0	113	124	0	0	237	777
09:30 AM	106	0	174	1	281	27	213	0	0	240	0	0	0	0	0	89	162	0	0	251	772
09:45 AM	129	0	216	0	345	28	190	0	0	218	0	0	0	0	0	98	151	0	0	249	812
Total	458	0	778	1	1237	104	872	0	0	976	0	0	0	0	0	388	586	0	0	974	3187
Grand Total	1335	0	2482	2	3819	339	3418	0	0	3757	0	0	0	0	0	1564	1870	0	0	3434	11010
Apprch %	35	0	65	0.1		9	91	0	0		0	0	0	0		45.5	54.5	0	0		
Total %	12.1	0	22.5	0	34.7	3.1	31	0	0	34.1	0	0	0	0	0	14.2	17	0	0	31.2	

	US-101 SB RAMPS Southbound				MARSH RD Westbound				US-101 SB ON-RAMP Northbound				MARSH RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	116	0	234	350	25	**372**	0	**397**	0	0	0	0	**192**	171	0	**363**	**1110**
08:00 AM	116	0	221	337	**35**	337	0	372	0	0	0	0	162	167	0	329	1038
08:15 AM	**125**	0	231	356	30	310	0	340	0	0	0	0	163	194	0	357	1053
08:30 AM	107	0	**252**	**359**	30	305	0	335	0	0	0	0	133	**211**	0	344	1038
Total Volume	464	0	938	1402	120	1324	0	1444	0	0	0	0	650	743	0	1393	4239
% App. Total	33.1	0	66.9		8.3	91.7	0		0	0	0		46.7	53.3	0		
PHF	.928	.000	.931	.976	.857	.890	.000	.909	.000	.000	.000	.000	.846	.880	.000	.959	.955

TRAFFIC DATA SERVICE

6280 San Ignacio Ave Suite C
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File Name : 44AM FINAL
Site Code : 00000044
Start Date : 12/15/2022
Page No : 2



TRAFFIC DATA SERVICE

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San Jose, CA 95119
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File Name : 44PM FINAL
Site Code : 00000044
Start Date : 12/15/2022
Page No : 1

Groups Printed- Vehicles

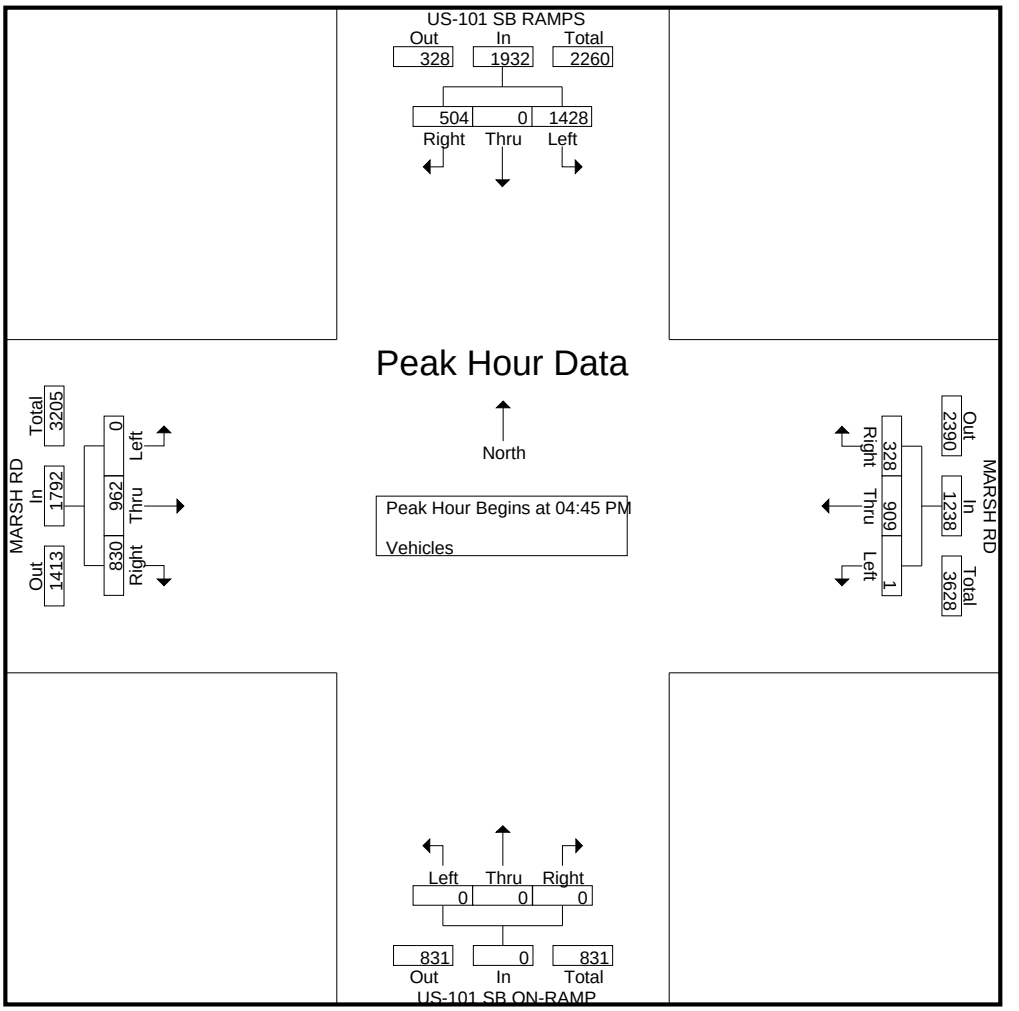
	US-101 SB RAMPS Southbound					MARSH RD Westbound					US-101 SB ON-RAMP Northbound					MARSH RD Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	124	0	334	0	458	65	203	0	0	268	0	0	0	0	0	187	240	0	0	427	1153
04:15 PM	114	0	343	0	457	61	227	0	0	288	0	0	0	0	0	191	290	0	0	481	1226
04:30 PM	143	0	303	0	446	64	208	0	0	272	0	0	0	0	0	184	258	0	0	442	1160
04:45 PM	128	0	371	0	499	76	228	1	0	305	0	0	0	0	0	202	224	0	0	426	1230
Total	509	0	1351	0	1860	266	866	1	0	1133	0	0	0	0	0	764	1012	0	0	1776	4769
05:00 PM	121	0	386	0	507	66	203	0	0	269	0	0	0	0	0	234	266	0	0	500	1276
05:15 PM	138	0	356	0	494	85	233	0	0	318	0	0	0	0	0	205	243	0	0	448	1260
05:30 PM	117	0	315	0	432	101	245	0	0	346	0	0	0	0	0	189	229	0	0	418	1196
05:45 PM	121	0	264	0	385	100	220	0	0	320	0	0	0	1	1	164	156	0	0	320	1026
Total	497	0	1321	0	1818	352	901	0	0	1253	0	0	0	1	1	792	894	0	0	1686	4758
06:00 PM	113	0	265	0	378	71	170	0	0	241	0	0	0	0	0	136	168	0	0	304	923
06:15 PM	106	0	263	0	369	81	183	0	0	264	0	0	0	0	0	148	135	1	0	284	917
06:30 PM	100	0	241	1	342	65	160	0	0	225	0	0	0	0	0	108	140	0	0	248	815
06:45 PM	94	0	221	1	316	61	155	0	0	216	0	0	0	0	0	118	164	0	0	282	814
Total	413	0	990	2	1405	278	668	0	0	946	0	0	0	0	0	510	607	1	0	1118	3469
Grand Total	1419	0	3662	2	5083	896	2435	1	0	3332	0	0	0	1	1	2066	2513	1	0	4580	12996
Apprch %	27.9	0	72	0		26.9	73.1	0	0		0	0	0	100		45.1	54.9	0	0		
Total %	10.9	0	28.2	0	39.1	6.9	18.7	0	0	25.6	0	0	0	0	0	15.9	19.3	0	0	35.2	

	US-101 SB RAMPS Southbound				MARSH RD Westbound				US-101 SB ON-RAMP Northbound				MARSH RD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 06:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	128	0	371	499	76	228	**1**	305	0	0	0	0	202	224	0	426	1230
05:00 PM	121	0	**386**	**507**	66	203	0	269	0	0	0	0	**234**	**266**	0	**500**	**1276**
05:15 PM	**138**	0	356	494	85	233	0	318	0	0	0	0	205	243	0	448	1260
05:30 PM	117	0	315	432	**101**	**245**	0	**346**	0	0	0	0	189	229	0	418	1196
Total Volume	504	0	1428	1932	328	909	1	1238	0	0	0	0	830	962	0	1792	4962
% App. Total	26.1	0	73.9		26.5	73.4	0.1		0	0	0		46.3	53.7	0		
PHF	.913	.000	.925	.953	.812	.928	.250	.895	.000	.000	.000	.000	.887	.904	.000	.896	.972

TRAFFIC DATA SERVICE

6280 San Ignacio Ave Suite C
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File Name : 44PM FINAL
Site Code : 00000044
Start Date : 12/15/2022
Page No : 2



Prepared by National Data & Surveying Services

VOLUME

Veterans Blvd Bet Maple St and Chestnut St

Day: Monday
Date: 2/12/2024

City: Redwood City
Project #: CA24_080042_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,647	6,677	13,324

DAILY TOTALS

15 Minutes Interval

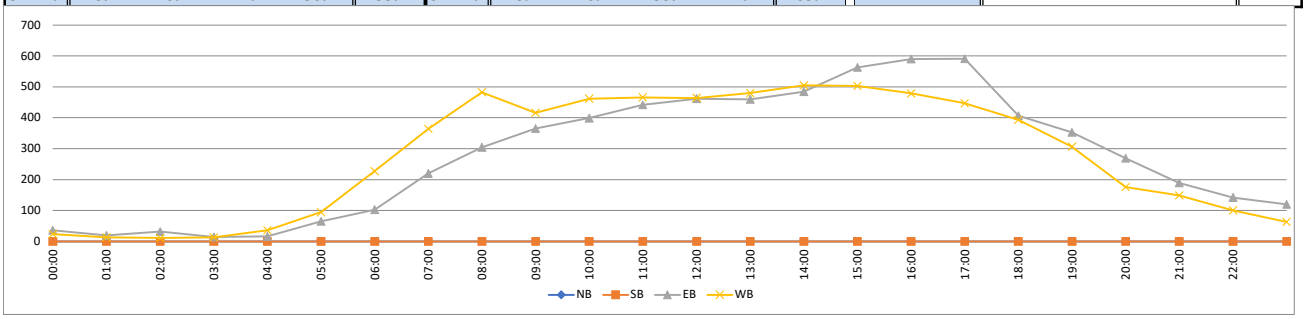
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			13	9	22	12:00			130	115	245
0:15			10	5	15	12:15			103	116	219
0:30			8	3	11	12:30			115	117	232
0:45			5	7	12	12:45			114	116	230
1:00			7	4	11	13:00			113	128	241
1:15			2	2	4	13:15			108	116	224
1:30			5	4	9	13:30			112	103	215
1:45			5	3	8	13:45			127	133	260
2:00			8	0	8	14:00			137	131	268
2:15			11	3	14	14:15			110	137	247
2:30			7	2	9	14:30			127	116	243
2:45			6	6	12	14:45			111	121	232
3:00			3	0	3	15:00			146	113	259
3:15			4	2	6	15:15			135	128	263
3:30			5	7	12	15:30			162	119	281
3:45			2	4	6	15:45			120	143	263
4:00			3	7	10	16:00			158	119	277
4:15			4	6	10	16:15			126	118	244
4:30			5	12	17	16:30			154	132	286
4:45			4	11	15	16:45			152	110	262
5:00			15	12	27	17:00			151	119	270
5:15			15	15	30	17:15			170	121	291
5:30			16	20	36	17:30			144	89	233
5:45			19	48	67	17:45			126	118	244
6:00			27	41	68						232
6:15			22	47	69						194
					89						194
					104						180
					99						179
					124						183
					175						168
7:45			69	117							130
					168						
											111
					240						114
					188						91
					195						110
9:15			91	108							82
					171						
9:45			101	115							60
					223						72
					206						59
					201						44
10:45			98	133							68
					209						
11:15			93	106	199	23:15			16	16	32
11:30			127	119	246	23:30			41	18	59
11:45			120	134	254	23:45			33	15	48
TOTALS	0	0	2016	2610	4626	TOTALS	0	0	4631	4067	8698
SPLIT %	0%	0%	44%	56%	35%	SPLIT %	0%	0%	53%	47%	65%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			36	24	60
01:00	02:00			19	13	32
02:00	03:00			32	11	43
03:00	04:00			14	13	27
04:00	05:00			16	36	52
05:00	06:00			65	95	160
06:00	07:00			103	227	330
07:00	08:00			220	364	584
08:00	09:00			305	483	788
09:00	10:00			365	416	781
10:00	11:00			399	462	861
11:00	12:00			442	466	908
12:00	13:00			462	464	926
13:00	14:00			460	480	940
14:00	15:00			485	505	990
15:00	16:00			563	503	1066
16:00	17:00			590	479	1069
17:00	18:00			591	447	1038
18:00	19:00			407	393	800
19:00	20:00			353	307	660
20:00	21:00			269	176	445
21:00	22:00			189	149	338
22:00	23:00			142	101	243
23:00	00:00			120	63	183

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			2016	2610	4626
Peak Hour			11:00	8:15	11:00
Peak Volume			442	496	908
Peak Hour Factor			0.870	0.855	0.894
Peak Period					
Volume					
Peak Hour			16:30	13:45	16:30
Peak Volume			627	517	1109
Peak Hour Factor			0.922	0.943	0.953
Peak Period					
Volume					
Peak Hour			8:00	7:45	8:00
Peak Volume			305	483	788
Peak Hour Factor			0.803	0.833	0.821
Peak Period		to	18:00		
Volume			1181	926	2107
Peak Hour			16:30	16:30	16:30
Peak Volume			627	482	1109
Peak Hour Factor			0.922	0.913	0.953



Prepared by National Data & Surveying Services

VOLUME

Veterans Blvd Bet Maple St and Chestnut St

Day: Tuesday
Date: 2/13/2024

City: Redwood City
Project #: CA24_080042_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,835	7,712	15,547

DAILY TOTALS

15 Minutes Interval

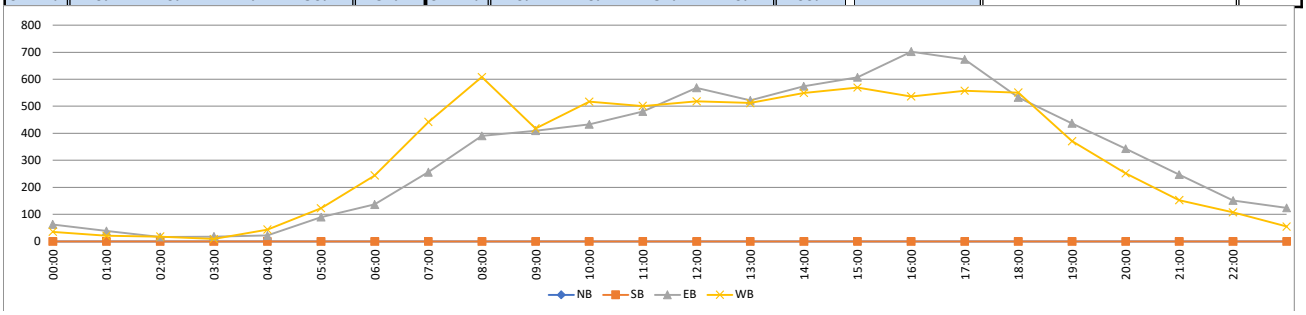
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			24	11	35	12:00			148	131	279
0:15			11	12	23	12:15			131	139	270
0:30			17	8	25	12:30			146	124	270
0:45			11	5	16	12:45			143	124	267
1:00			12	7	19	13:00			118	111	229
1:15			9	4	13	13:15			142	148	290
1:30			12	5	17	13:30			130	111	241
1:45			6	5	11	13:45			132	142	274
2:00			3	5	8	14:00			135	120	255
2:15			7	6	13	14:15			150	147	297
2:30			4	4	8	14:30			156	134	290
2:45			2	3	5	14:45			133	148	281
3:00			4	3	7	15:00			144	121	265
3:15			5	2	7	15:15			141	128	269
3:30			4	1	5	15:30			166	156	322
3:45			5	3	8	15:45			156	164	320
4:00			3	8	11	16:00			161	133	294
4:15			5	9	14	16:15			166	118	284
4:30			7	12	19	16:30			204	150	354
4:45			7	15	22	16:45			171	135	306
5:00			22	16	38	17:00			203	144	347
5:15			8	20	28	17:15			155	160	315
5:30			30	37	67	17:30			159	125	284
5:45			30	50	80	17:45			156	128	284
6:00			26	33	59						289
6:15			35	55	90						298
					97						258
					135						239
					135						244
					138						200
					195						189
7:45			74	156							175
					217						
											138
					266						147
					288						130
					199						124
9:15			89	87							102
					212						
9:45			108	133							79
					252						65
					241						63
					237						62
10:45			104	116							69
11:00			124	120	244	23:00			31	19	50
11:15			110	115	225	23:15			22	9	31
11:30			119	130	249	23:30			40	14	54
11:45			127	136	263	23:45			31	13	44
TOTALS	0	0	2354	2981	5335	TOTALS	0	0	5481	4731	10212
SPLIT %	0%	0%	44%	56%	34%	SPLIT %	0%	0%	54%	46%	66%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			63	36	99
01:00	02:00			39	21	60
02:00	03:00			16	18	34
03:00	04:00			18	9	27
04:00	05:00			22	44	66
05:00	06:00			90	123	213
06:00	07:00			137	244	381
07:00	08:00			256	442	698
08:00	09:00			390	608	998
09:00	10:00			410	418	828
10:00	11:00			433	517	950
11:00	12:00			480	501	981
12:00	13:00			568	518	1086
13:00	14:00			522	512	1034
14:00	15:00			574	549	1123
15:00	16:00			607	569	1176
16:00	17:00			702	536	1238
17:00	18:00			673	557	1230
18:00	19:00			533	551	1084
19:00	20:00			437	371	808
20:00	21:00			343	252	595
21:00	22:00			247	153	400
22:00	23:00			151	108	259
23:00	00:00			124	55	179

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			2354	2981	5335
Peak Hour			11:00	8:00	8:00
Peak Volume			480	608	998
Peak Hour Factor			0.945	0.910	0.866
Peak Period	12:00	to	00:00		
Volume			5481	4731	10212
Peak Hour			16:15	16:30	16:30
Peak Volume			744	589	1322
Peak Hour Factor			0.912	0.920	0.934
Peak Period	07:00	to	09:00		
Volume			646	1050	1696
Peak Hour			8:00	8:00	8:00
Peak Volume			390	608	998
Peak Hour Factor			0.806	0.910	0.866
Peak Period	16:00	to	18:00		
Volume			1375	1093	2468
Peak Hour			16:15	16:30	16:30
Peak Volume			744	589	1322
Peak Hour Factor			0.912	0.920	0.934



Prepared by National Data & Surveying Services

VOLUME

Veterans Blvd Bet Maple St and Chestnut St

Day: Wednesday
Date: 2/14/2024

City: Redwood City
Project #: CA24_080042_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,108	7,760	14,868

DAILY TOTALS

15 Minutes Interval

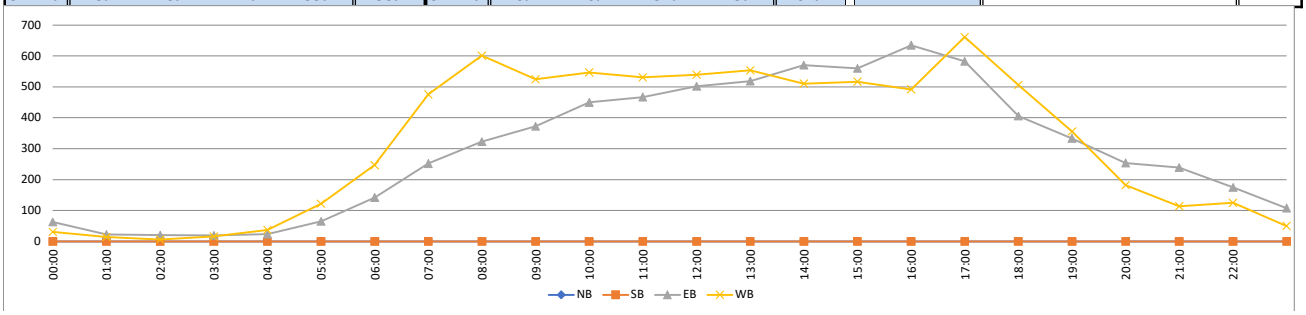
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			27	14	41	12:00			134	126	260
0:15			12	9	21	12:15			120	150	270
0:30			15	4	19	12:30			133	127	260
0:45			9	4	13	12:45			115	136	251
1:00			3	2	5	13:00			116	155	271
1:15			8	1	9	13:15			117	140	257
1:30			6	8	14	13:30			138	130	268
1:45			6	3	9	13:45			148	129	277
2:00			6	0	6	14:00			150	125	275
2:15			5	2	7	14:15			134	124	258
2:30			5	3	8	14:30			153	114	267
2:45			5	1	6	14:45			133	148	281
3:00			2	3	5	15:00			137	118	255
3:15			7	6	13	15:15			144	129	273
3:30			4	3	7	15:30			175	148	323
3:45			7	4	11	15:45			104	122	226
4:00			2	7	9	16:00			153	125	278
4:15			4	6	10	16:15			139	117	256
4:30			6	9	15	16:30			189	126	315
4:45			12	15	27	16:45			154	124	278
5:00			9	19	28	17:00			175	158	333
5:15			12	20	32	17:15			145	154	299
5:30			23	35	58	17:30			137	175	312
5:45			21	48	69	17:45			126	174	300
6:00			31	53	84						256
6:15			29	43	72						237
					95						209
					138						210
					143						181
					171						184
					209						166
7:45			64	141							159
					193						
											116
					243						104
					256						103
					219						96
9:15			88	126							90
					220						
9:45			103	142							78
					241						85
					236						65
					256						67
10:45			114	150							83
11:00			98	115	213	23:00			25	13	38
11:15			112	136	248	23:15			22	11	33
11:30			135	127	262	23:30			39	10	49
11:45			122	153	275	23:45			22	16	38
TOTALS	0	0	2223	3153	5376	TOTALS	0	0	4885	4607	9492
SPLIT %	0%	0%	41%	59%	36%	SPLIT %	0%	0%	51%	49%	64%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			63	31	94
01:00	02:00			23	14	37
02:00	03:00			21	6	27
03:00	04:00			20	16	36
04:00	05:00			24	37	61
05:00	06:00			65	122	187
06:00	07:00			142	247	389
07:00	08:00			252	476	728
08:00	09:00			323	601	924
09:00	10:00			373	525	898
10:00	11:00			450	547	997
11:00	12:00			467	531	998
12:00	13:00			502	539	1041
13:00	14:00			519	554	1073
14:00	15:00			570	511	1081
15:00	16:00			560	517	1077
16:00	17:00			635	492	1127
17:00	18:00			583	661	1244
18:00	19:00			406	506	912
19:00	20:00			334	356	690
20:00	21:00			254	182	436
21:00	22:00			239	114	353
22:00	23:00			175	125	300
23:00	00:00			108	50	158

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			2223	3153	5376
Peak Hour			11:00	8:15	11:00
Peak Volume			467	604	998
Peak Hour Factor			0.865	0.926	0.907
Peak Period	12:00	to	00:00		
Volume			4885	4607	9492
Peak Hour			16:30	17:00	17:00
Peak Volume			663	661	1244
Peak Hour Factor			0.877	0.944	0.934
Peak Period	07:00	to	09:00		
Volume			575	1077	1652
Peak Hour			8:00	8:00	8:00
Peak Volume			323	601	924
Peak Hour Factor			0.868	0.922	0.902
Peak Period	16:00	to	18:00		
Volume			1218	1153	2371
Peak Hour			16:30	17:00	17:00
Peak Volume			663	661	1244
Peak Hour Factor			0.877	0.944	0.934



Prepared by National Data & Surveying Services

VOLUME

Veterans Blvd Bet Maple St and Chestnut St

Day: Thursday
Date: 2/15/2024

City: Redwood City
Project #: CA24_080042_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,121	7,012	14,133

DAILY TOTALS

15 Minutes Interval

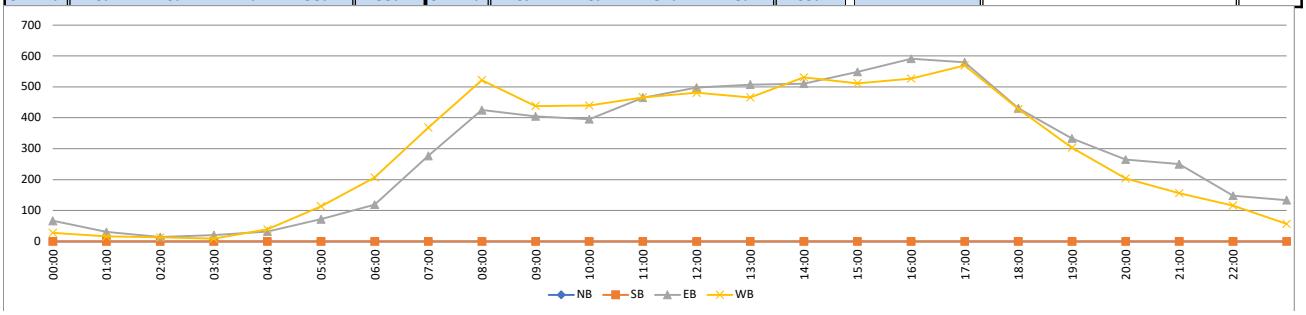
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			27	12	39	12:00			120	121	241
0:15			23	6	29	12:15			113	129	242
0:30			8	3	11	12:30			134	118	252
0:45			9	7	16	12:45			131	113	244
1:00			6	5	11	13:00			124	123	247
1:15			9	3	12	13:15			135	112	247
1:30			10	3	13	13:30			105	110	215
1:45			6	5	11	13:45			144	121	265
2:00			5	3	8	14:00			111	129	240
2:15			4	2	6	14:15			155	119	274
2:30			2	4	6	14:30			123	160	283
2:45			3	4	7	14:45			122	123	245
3:00			4	1	5	15:00			143	122	265
3:15			4	2	6	15:15			127	134	261
3:30			7	2	9	15:30			131	119	250
3:45			6	4	10	15:45			148	137	285
4:00			3	4	7	16:00			141	111	252
4:15			2	7	9	16:15			132	127	259
4:30			18	8	26	16:30			177	140	317
4:45			9	20	29	16:45			141	149	290
5:00			12	15	27	17:00			168	142	310
5:15			17	24	41	17:15			139	153	292
5:30			18	28	46	17:30			144	143	287
5:45			25	47	72	17:45			129	131	260
6:00			12	35	47						237
6:15			35	41	76						224
					88						202
					115						196
					130						172
					136						173
					170						157
7:45			88	122							135
					212						
											108
					256						128
					250						92
					217						111
9:15			95	109							100
					222						
9:45			92	108							98
					188						69
					238						69
					216						60
10:45			91	102							66
11:00			110	100	210	23:00			41	15	56
11:15			109	123	232	23:15			30	10	40
11:30			139	130	269	23:30			39	18	57
11:45			107	113	220	23:45			24	14	38
TOTALS	0	0	2323	2661	4984	TOTALS	0	0	4798	4351	9149
SPLIT %	0%	0%	47%	53%	35%	SPLIT %	0%	0%	52%	48%	65%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			67	28	95
01:00	02:00			31	16	47
02:00	03:00			14	13	27
03:00	04:00			21	9	30
04:00	05:00			32	39	71
05:00	06:00			72	114	186
06:00	07:00			119	207	326
07:00	08:00			277	369	646
08:00	09:00			425	522	947
09:00	10:00			405	438	843
10:00	11:00			395	440	835
11:00	12:00			465	466	931
12:00	13:00			498	481	979
13:00	14:00			508	466	974
14:00	15:00			511	531	1042
15:00	16:00			549	512	1061
16:00	17:00			591	527	1118
17:00	18:00			580	569	1149
18:00	19:00			431	428	859
19:00	20:00			333	304	637
20:00	21:00			265	204	469
21:00	22:00			250	156	406
22:00	23:00			148	116	264
23:00	00:00			134	57	191

STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			2323	2661	4984
Peak Hour			11:00	8:00	8:15
Peak Volume			465	522	952
Peak Hour Factor			0.836	0.960	0.930
Peak Period	12:00	to	00:00		
Volume			4798	4351	9149
Peak Hour			16:30	16:45	16:30
Peak Volume			625	587	1209
Peak Hour Factor			0.883	0.959	0.953
Peak Period	07:00	to	09:00		
Volume			702	891	1593
Peak Hour			8:00	8:00	8:00
Peak Volume			425	522	947
Peak Hour Factor			0.824	0.960	0.925
Peak Period	16:00	to	18:00		
Volume			1171	1096	2267
Peak Hour			16:30	16:45	16:30
Peak Volume			625	587	1209
Peak Hour Factor			0.883	0.959	0.953



Prepared by National Data & Surveying Services

VOLUME

Veterans Blvd Bet Maple St and Chestnut St

Day: Friday
Date: 2/16/2024

City: Redwood City
Project #: CA24_080042_001

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	7,114	7,218	14,332

DAILY TOTALS

15 Minutes Interval

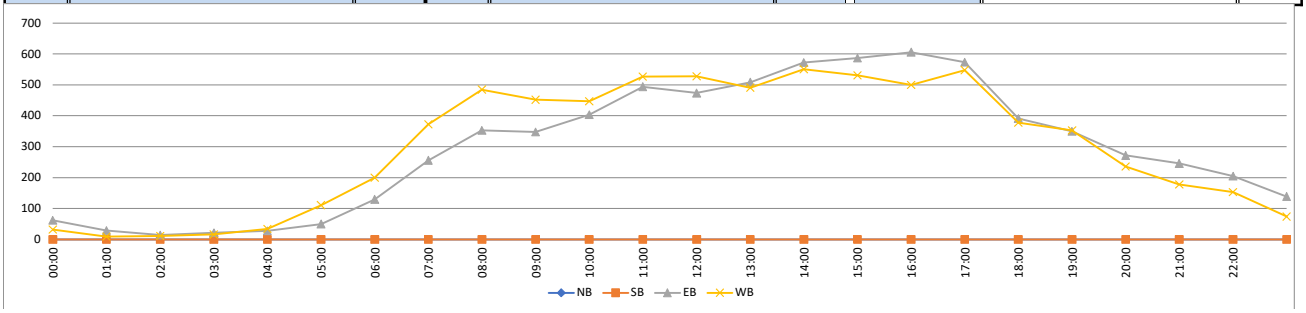
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
0:00			20	10	30	12:00			121	133	254
0:15			19	9	28	12:15			122	122	244
0:30			15	8	23	12:30			103	141	244
0:45			8	5	13	12:45			128	132	260
1:00			9	5	14	13:00			129	133	262
1:15			7	1	8	13:15			116	126	242
1:30			7	1	8	13:30			134	113	247
1:45			6	2	8	13:45			130	119	249
2:00			4	2	6	14:00			140	143	283
2:15			2	4	6	14:15			143	133	276
2:30			6	2	8	14:30			149	126	275
2:45			2	3	5	14:45			140	149	289
3:00			1	1	2	15:00			138	142	280
3:15			7	4	11	15:15			132	131	263
3:30			8	6	14	15:30			168	121	289
3:45			6	5	11	15:45			149	137	286
4:00			3	2	5	16:00			150	135	285
4:15			7	6	13	16:15			151	120	271
4:30			9	9	18	16:30			151	127	278
4:45			9	17	26	16:45			154	118	272
5:00			8	9	17	17:00			153	139	292
5:15			10	20	30	17:15			145	137	282
5:30			13	35	48	17:30			154	134	288
5:45			19	47	66	17:45			121	138	259
6:00			31	29	60						208
6:15			26	47	73						191
					87						205
					110						165
					95						201
					138						163
					189						185
7:45			78	129							154
					188						
											133
					213						129
					223						100
					186						107
9:15			85	107							108
					216						
9:45			84	122							94
					224						86
					212						99
					205						87
10:45			106	104							86
11:00			94	156	250	23:00			42	19	61
11:15			128	103	231	23:15			32	20	52
11:30			133	133	266	23:30			36	18	54
11:45			139	135	274	23:45			29	17	46
TOTALS	0	0	2190	2697	4887	TOTALS	0	0	4924	4521	9445
SPLIT %	0%	0%	45%	55%	34%	SPLIT %	0%	0%	52%	48%	66%

Hourly Intervals

TIME		NB	SB	EB	WB	TOTAL
00:00	01:00			62	32	94
01:00	02:00			29	9	38
02:00	03:00			14	11	25
03:00	04:00			22	16	38
04:00	05:00			28	34	62
05:00	06:00			50	111	161
06:00	07:00			130	200	330
07:00	08:00			256	373	629
08:00	09:00			353	485	838
09:00	10:00			348	452	800
10:00	11:00			404	447	851
11:00	12:00			494	527	1021
12:00	13:00			474	528	1002
13:00	14:00			509	491	1000
14:00	15:00			572	551	1123
15:00	16:00			587	531	1118
16:00	17:00			606	500	1106
17:00	18:00			573	548	1121
18:00	19:00			391	378	769
19:00	20:00			350	353	703
20:00	21:00			272	236	508
21:00	22:00			246	178	424
22:00	23:00			205	153	358
23:00	00:00			139	74	213

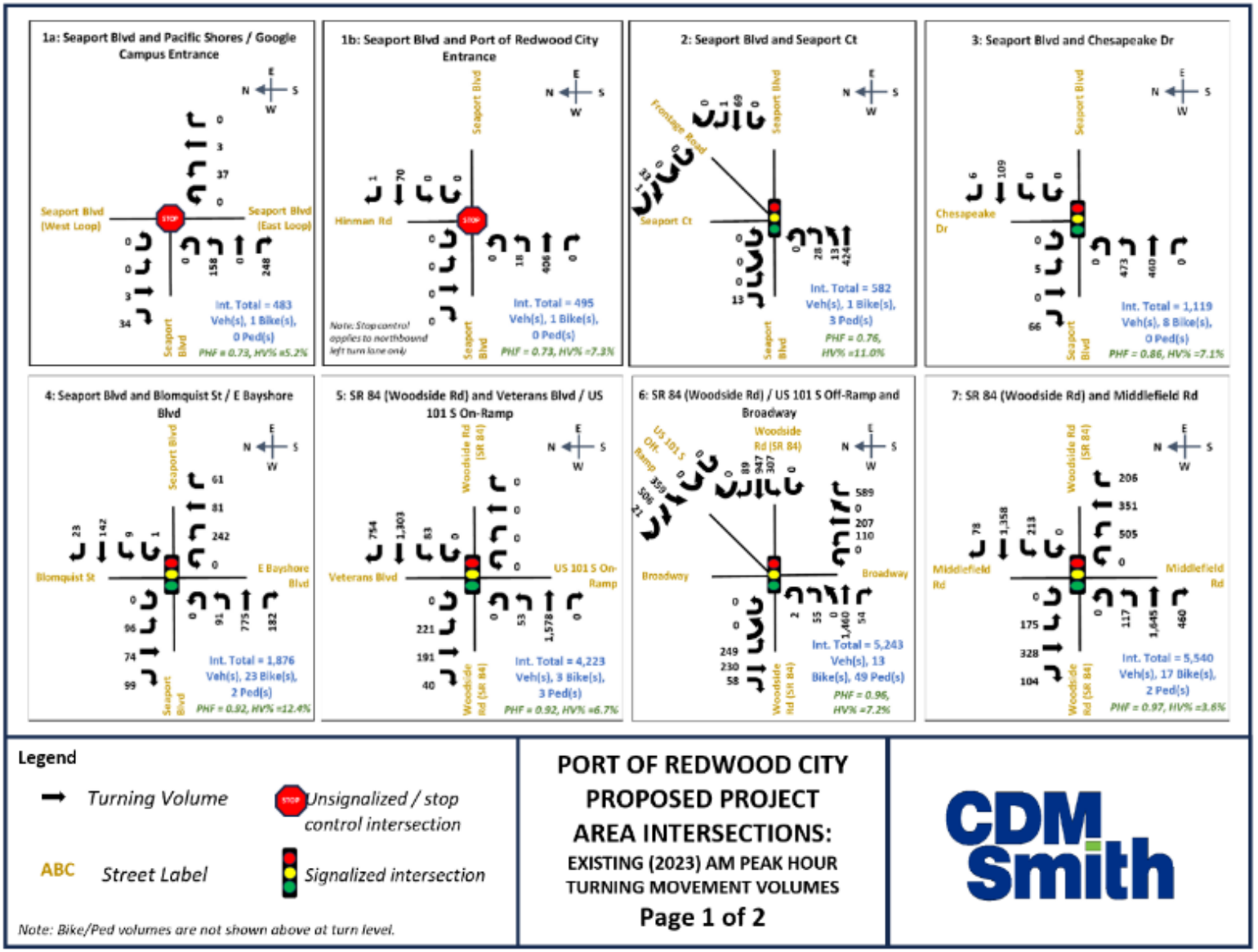
STATISTICS

	NB	SB	EB	WB	TOTAL
Peak Period	00:00	to	12:00		
Volume			2190	2697	4887
Peak Hour			11:00	11:00	11:00
Peak Volume			494	527	1021
Peak Hour Factor			0.888	0.845	0.932
Peak Period	12:00	to	00:00		
Volume			4924	4521	9445
Peak Hour			15:30	14:00	16:45
Peak Volume			618	551	1134
Peak Hour Factor			0.920	0.924	0.971
Peak Period	07:00	to	09:00		
Volume			609	858	1467
Peak Hour			8:00	7:45	8:00
Peak Volume			353	492	838
Peak Hour Factor			0.874	0.953	0.939
Peak Period	16:00	to	18:00		
Volume			1179	1048	2227
Peak Hour			16:15	17:00	16:45
Peak Volume			609	548	1134
Peak Hour Factor			0.989	0.986	0.971



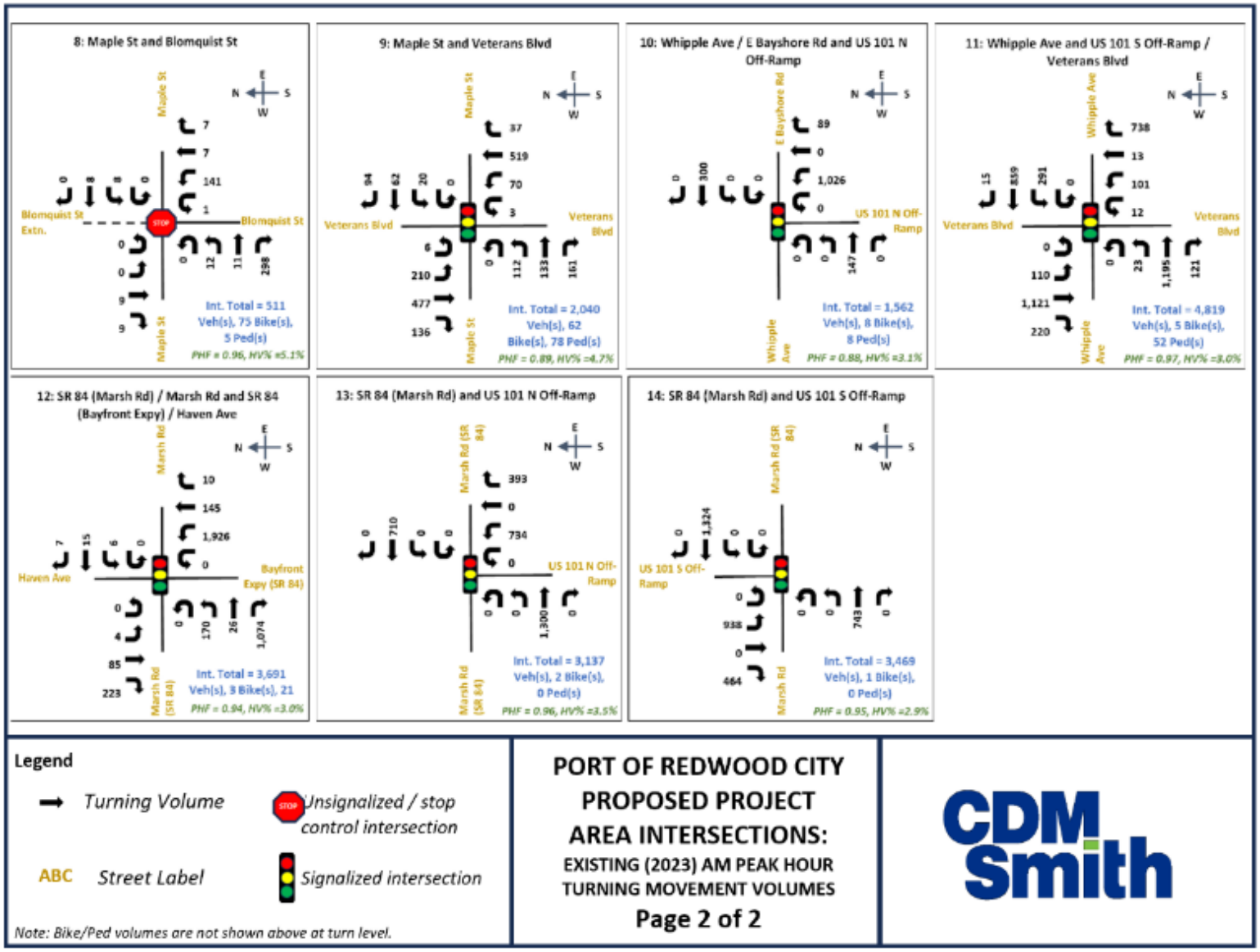
Attachment 4 – Background Traffic Volume Diagrams

Attachment 4 has diagrams showing background traffic volume during peak hours at study area intersections for existing (2023) and cumulative (2040) conditions that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.



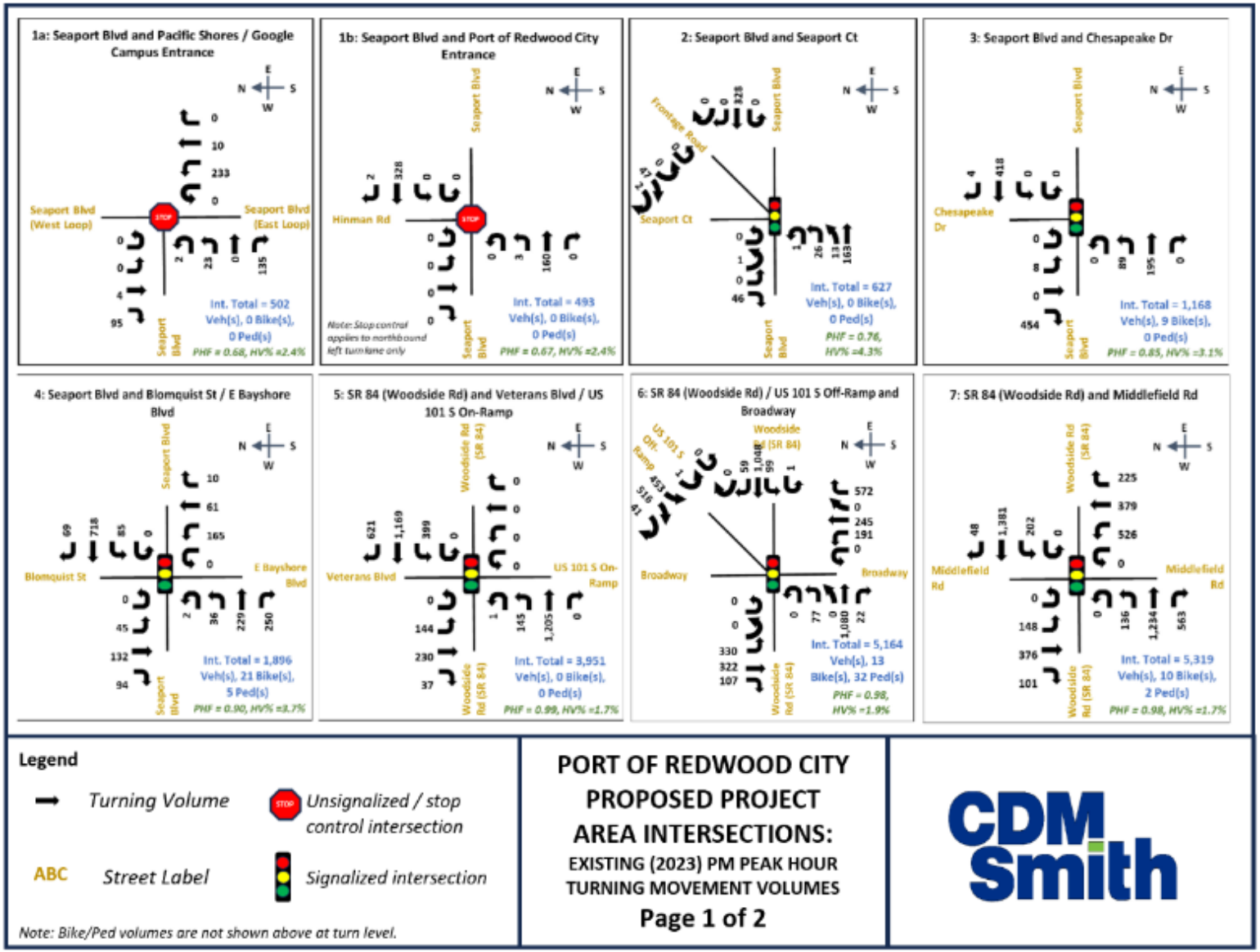
Key: Int. Total = Intersection Total Volume by Vehicle Type, PHF = Peak Hour Factor, HV % = Heavy Vehicle Percentage, Ped = Pedestrian, Bike = Bicycle, veh(s) = vehicle(s)

Figure A4.1 Existing (2023) AM Peak Hour Turning Volumes at Project Area Intersections



Key: Int. Total = Intersection Total Volume by Vehicle Type, PHF = Peak Hour Factor, HV % = Heavy Vehicle Percentage, Ped = Pedestrian, Bike = Bicycle, veh(s) = vehicle(s)

Figure A4.1 Existing (2023) AM Peak Hour Turning Volumes at Project Area Intersections (Continued)



Key: Int. Total = Intersection Total Volume by Vehicle Type, PHF = Peak Hour Factor, HV % = Heavy Vehicle Percentage, Ped = Pedestrian, Bike = Bicycle, veh(s) = vehicle(s)

Figure A4.2 Existing (2023) PM Peak Hour Turning Volumes at Project Area Intersections

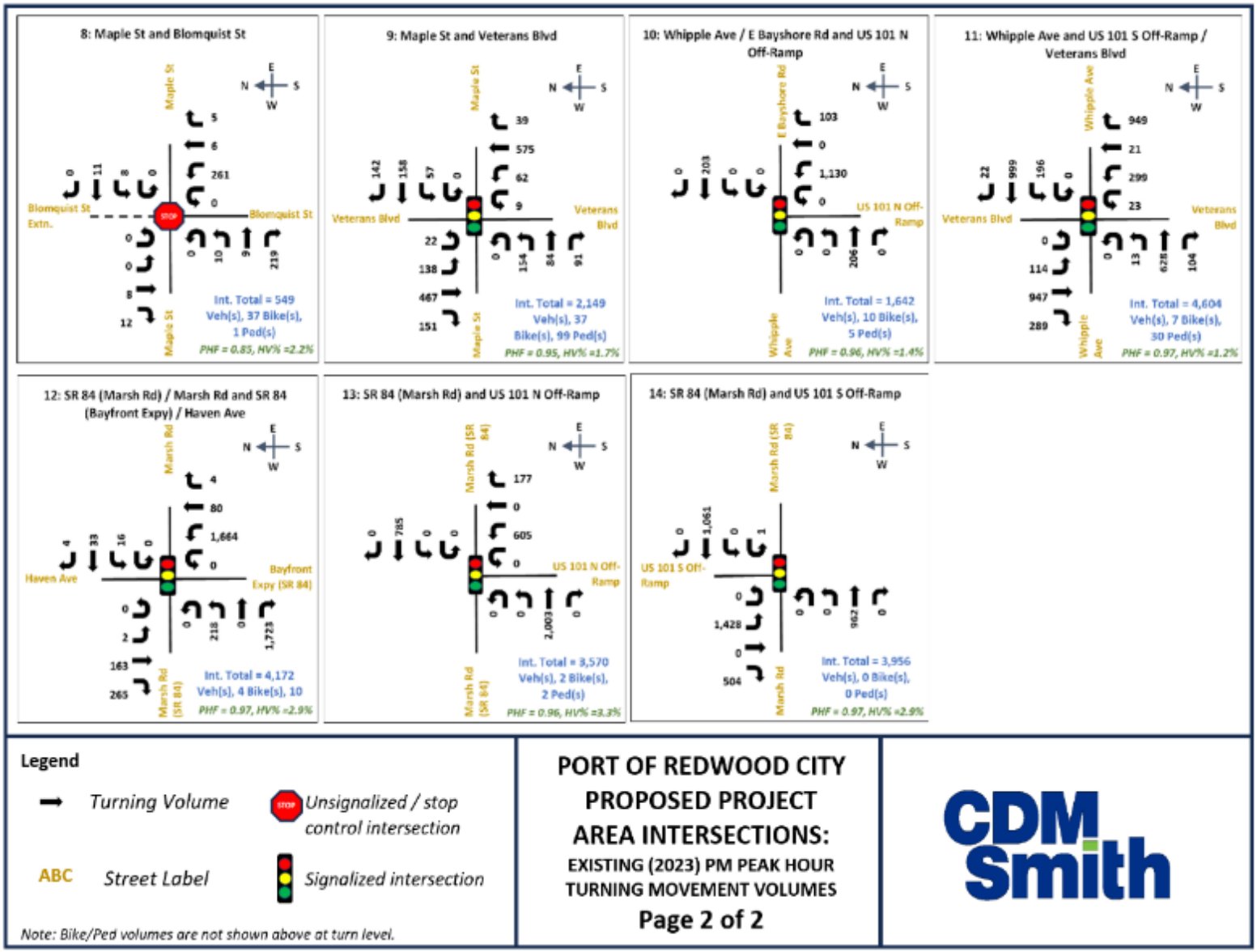
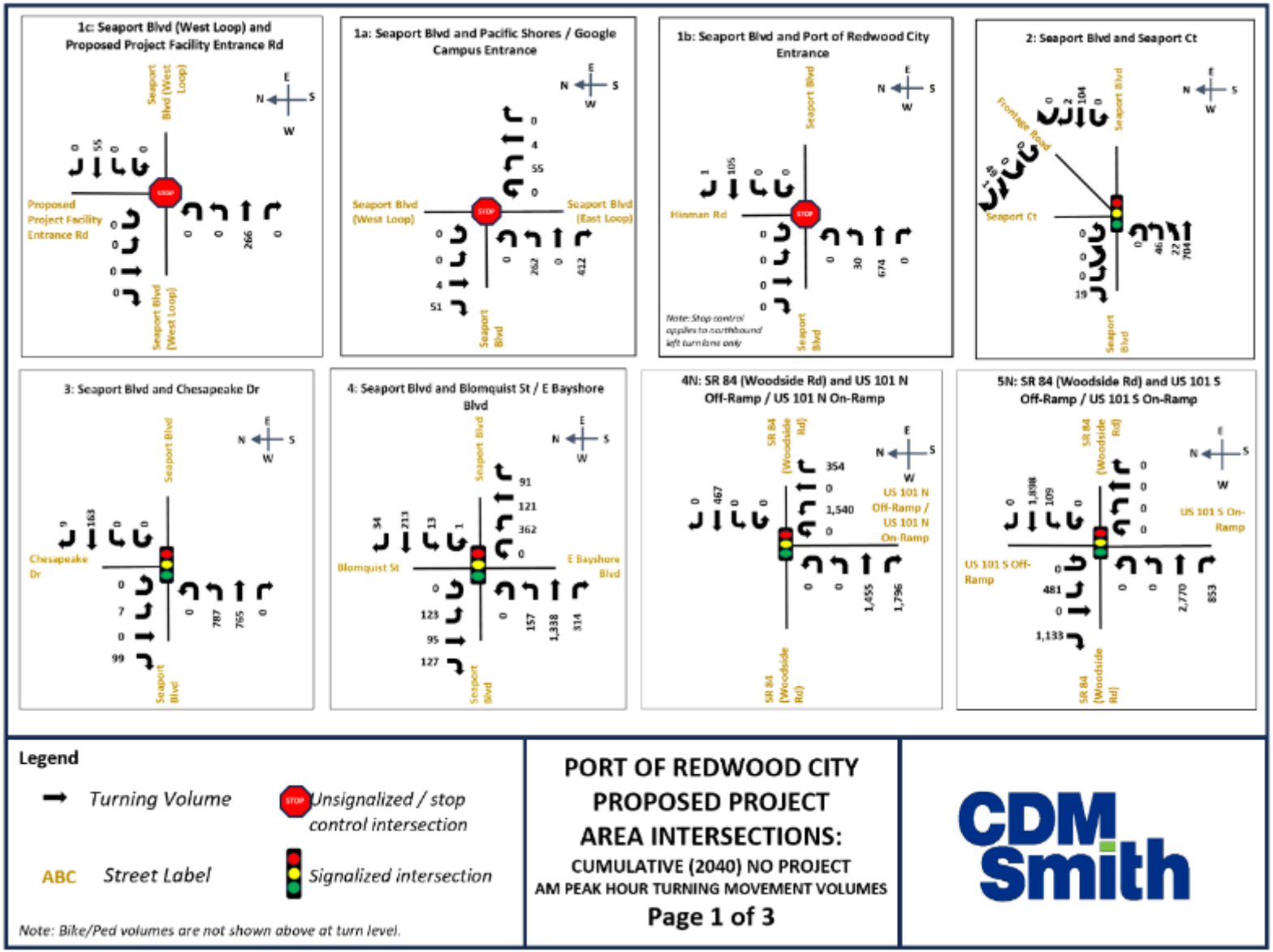


Figure A4.2 Existing (2023) PM Peak Hour Turning Volumes at Project Area Intersections (Continued)



Key: Int. Total = Intersection Total Volume by Vehicle Type, PHF = Peak Hour Factor, HV % = Heavy Vehicle Percentage, Ped = Pedestrian, Bike = Bicycle, veh(s) = vehicle(s)

Figure A4.3 Cumulative (2040) No Project AM Peak Hour Turning Volumes at Project Area Intersections

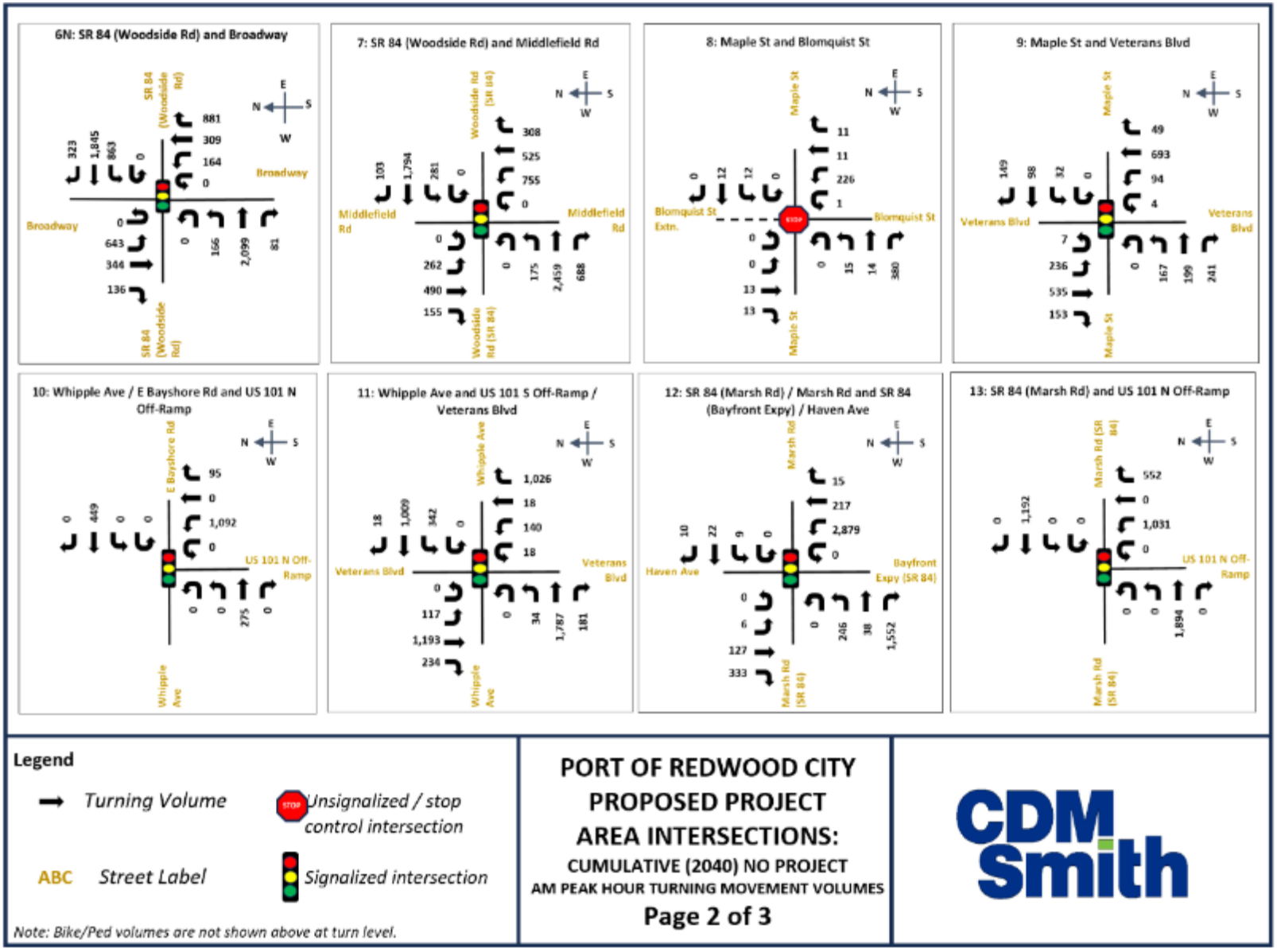


Figure A4.3 Cumulative (2040) No Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

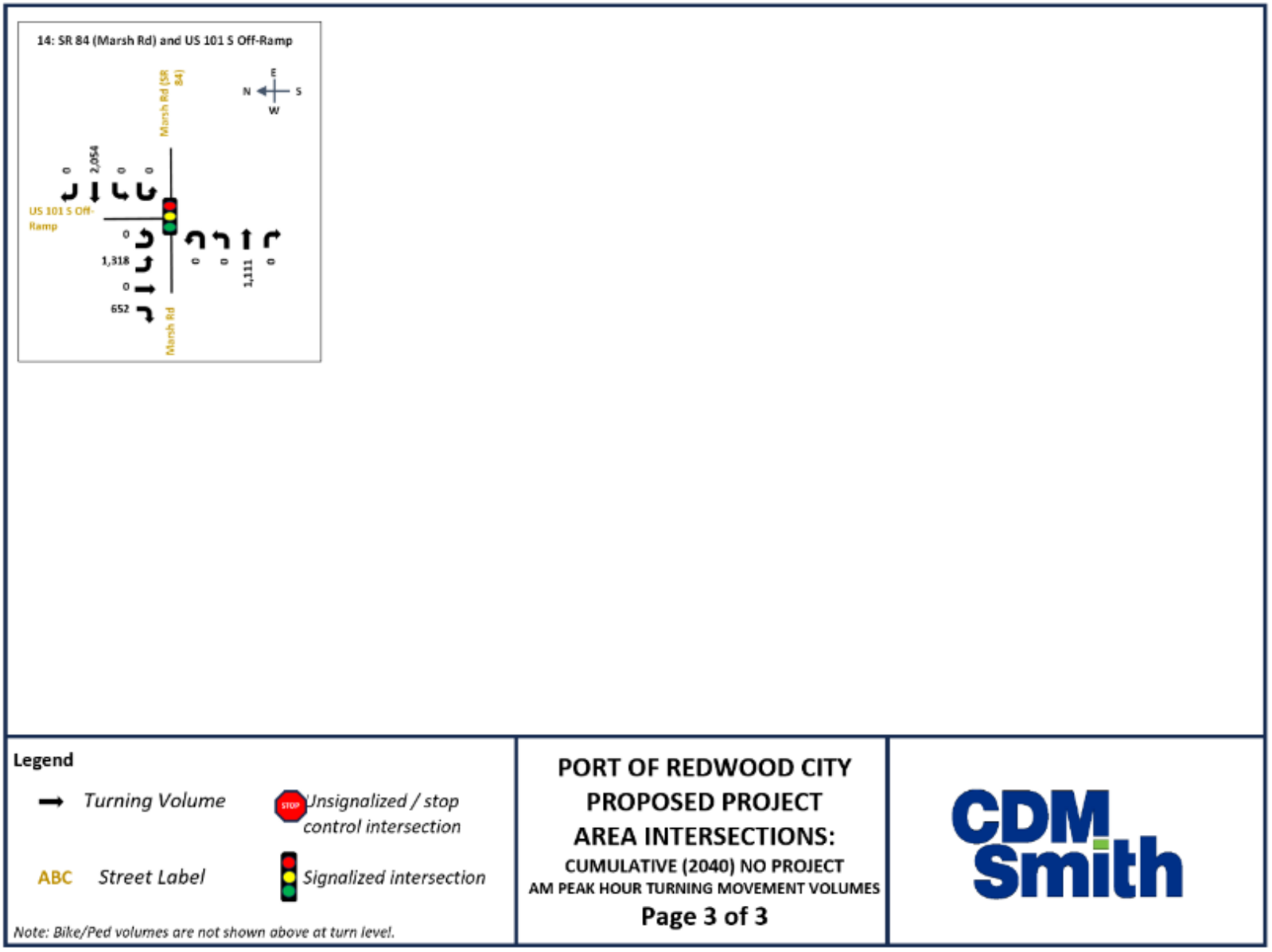


Figure A4.3 Cumulative (2040) No Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

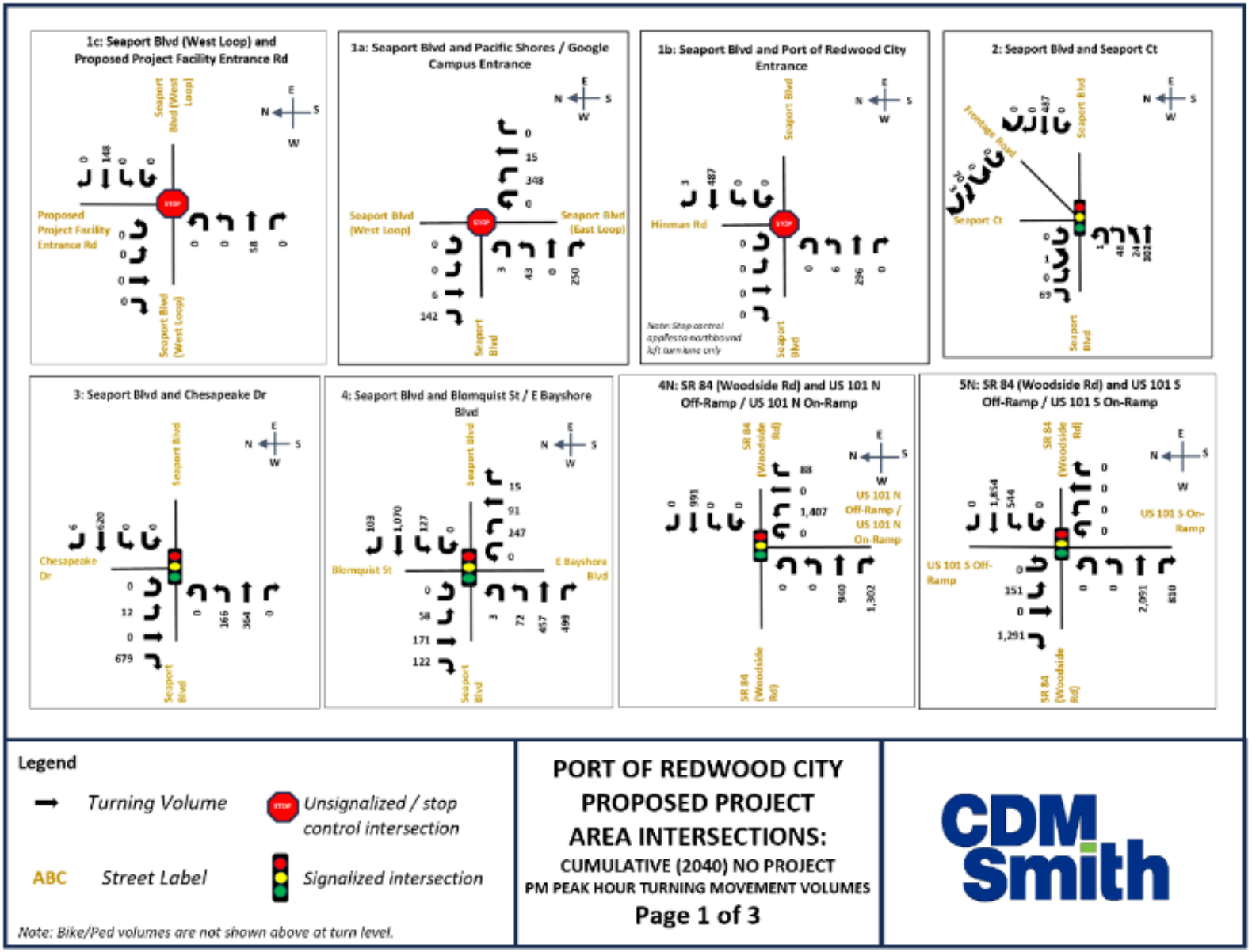


Figure A4.4 Cumulative (2040) No Project PM Peak Hour Turning Volumes at Project Area Intersections

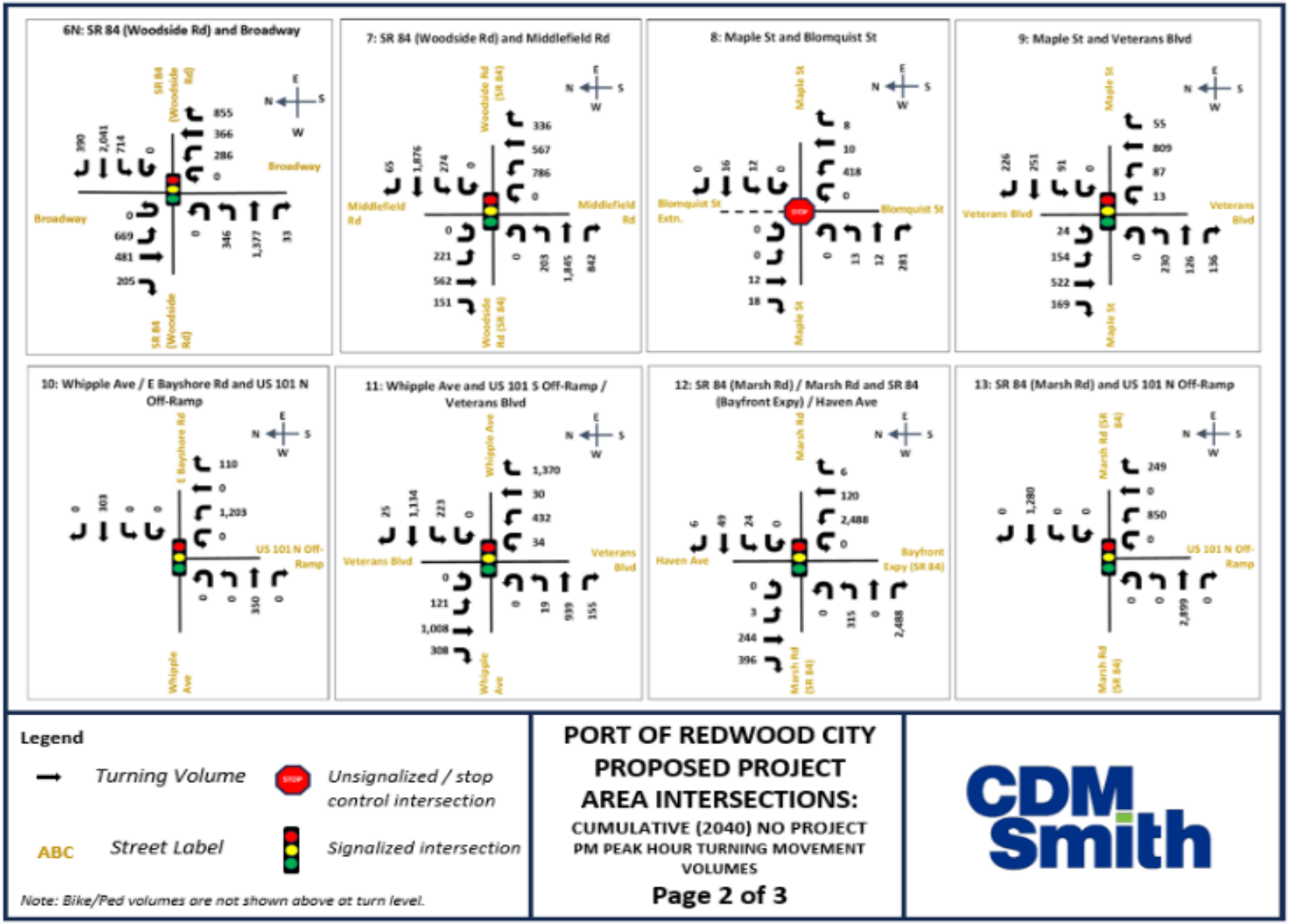


Figure A4.4 Cumulative (2040) No Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

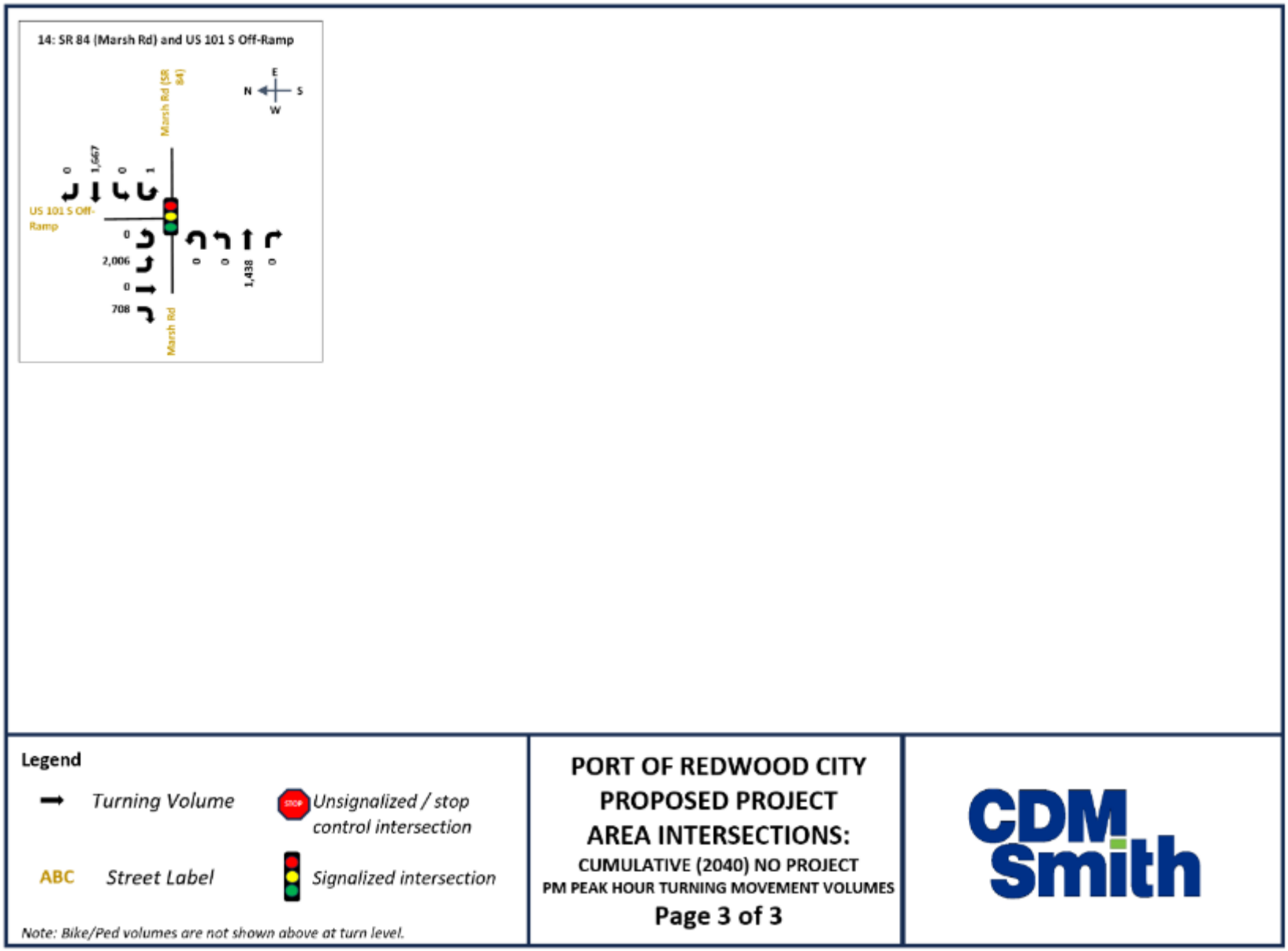


Figure A4.4 Cumulative (2040) No Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

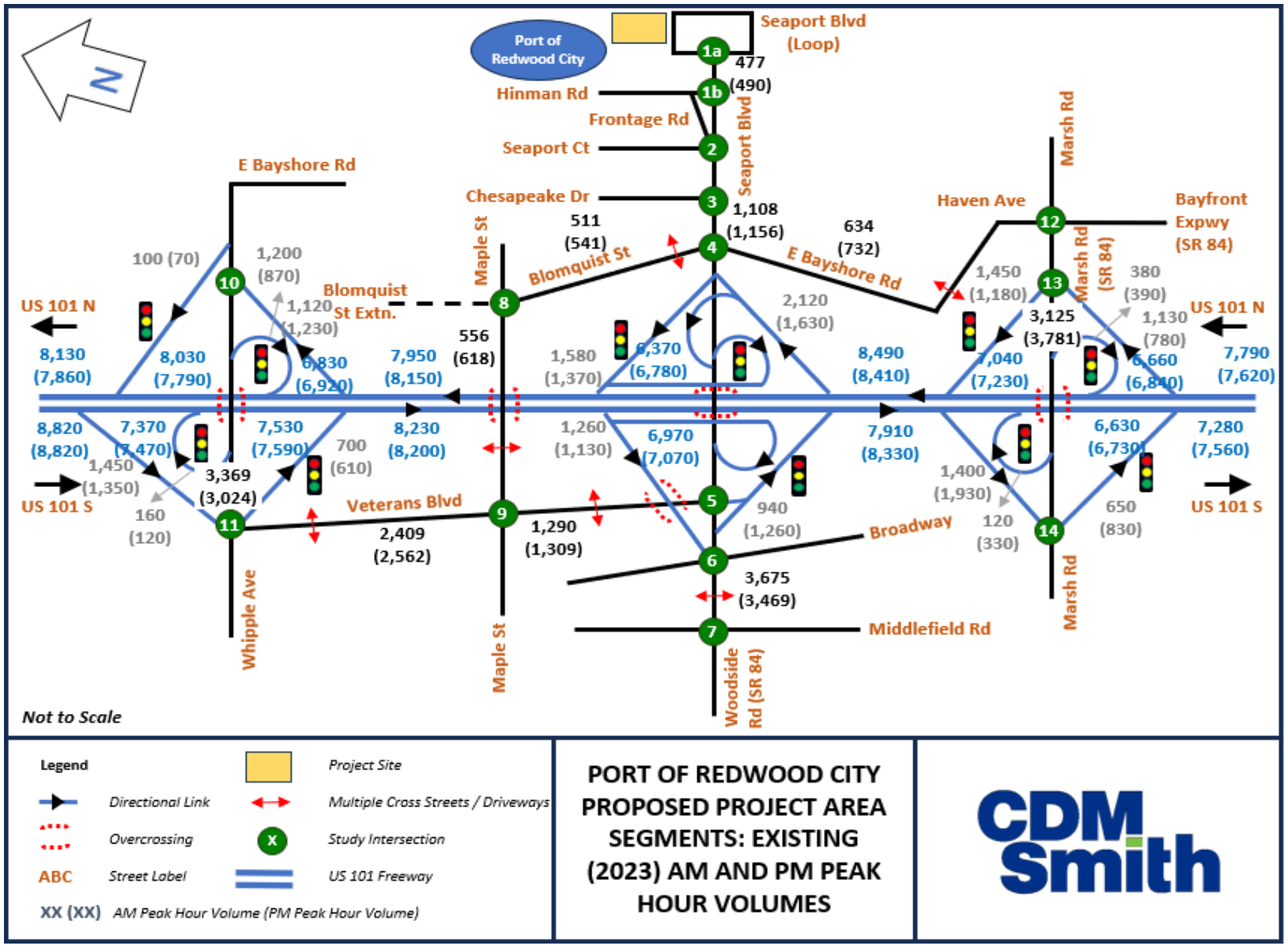


Figure A4.5 Existing (2023) AM and PM Peak Hour Volumes on Project Area Segments

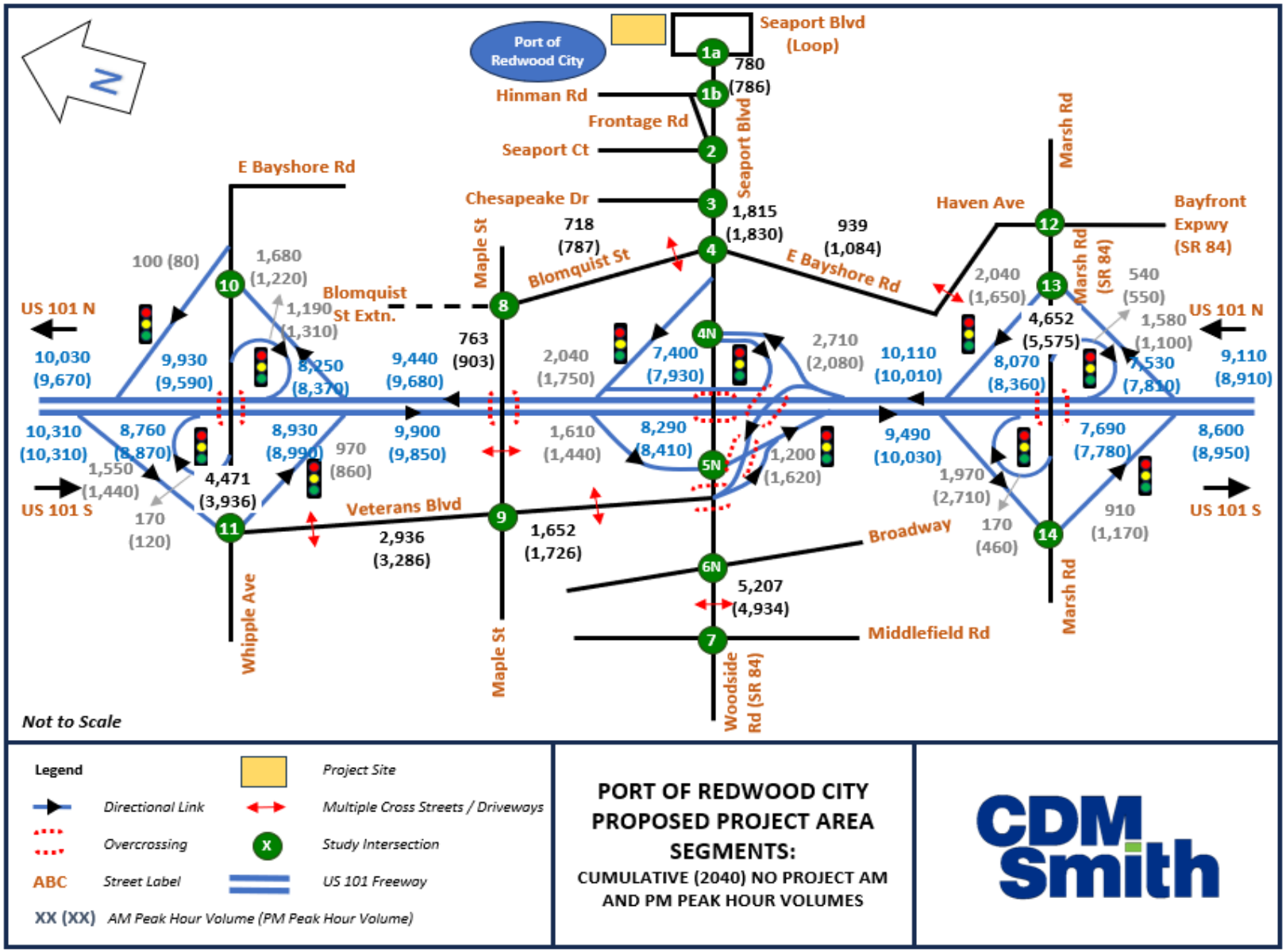


Figure A4.6 Cumulative (2040) No Project AM and PM Peak Hour Volumes on Project Area Segments

Attachment 5 – Ferry Ridership Adjustment Methodology

The transportation analysis updates the ridership estimates in the Redwood City Ferry Business Plan[138] for the years 2019 and 2040 to the years 2023 and 2040 while adjusting for recent post-Covid pandemic trends using trip production or attraction adjustment factors as follows:

- **Population trends:** As per the California Department of Finance,[139] the population estimates for San Francisco, Oakland, and Redwood City in 2023 are lower than that in 2020 by approximately 5 percent on average, due to net migration to other geographical regions. **Table A5.1** summarizes the population data for January 1 estimates for the years 2020 through 2023. By taking a ratio of 2023 population over 2020 population, the analysis estimated 2023 adjustment factors on an average weekday for San Francisco, Oakland, and Redwood City originating home trips as 0.94, 0.97, and 0.94, respectively. The analysis used the same adjustment factors for the year 2040.

Table A5.1 Population Trends in Ferry Terminal Cities – January 1 for Years 2020 through 2023

City	January 1, 2020 Estimate	January 1, 2021 Pop. Estimate	January 1, 2022 Pop. Estimate	January 1, 2023 Pop. Estimate
San Francisco	889,783	853,414	837,036	831,703
Oakland	432,327	430,901	421,806	419,556
Redwood City	86,444	81,956	81,753	81,495

Sources: California Department of Finance, Demographic Research Unit: Report E-1 & E-1H, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2022 and 2023; Report E-4, Population Estimates for Cities, Counties, and the State, 2021-2023, with 2020 Benchmark. Available: https://dof.ca.gov/forecasting/demographics/estimates/.
Key: Pop. = Population

- **Economic trends:** As per CBRE,[140,141] office space vacancy for the San Francisco market has increased from 4.0 percent in 2019 to 35.6 percent in 2023. During this same period, office space vacancy for the Oakland market has increased from 8.0 percent in 2019 to 20.6 percent in 2023. **Table A5.2** summarizes the office space vacancy data for the San Francisco and Oakland markets, and submarkets in the immediate vicinity of the ferry terminals in these cities. Using these, the analysis calculated 2023 adjustment factors for San Francisco and Oakland-destined work trips as 0.70 and 0.83 using the ratio between the office space occupancy rate (100 percent minus vacancy rate) ratios between 2019 and 2023. While the office space vacancy rate was high in 2023, the analysis assumed that the office space occupancy rate would rebound to the long-term historical average of 11.9 percent for the San Francisco market and 11.4 percent for the Oakland market by 2040. Minor adjustment was also made to customize these percentages to the submarkets in the

[138] Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan. Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf.
[139] California Department of Finance, Demographic Research Unit. 2022 and 2023. Report E-1 & E-1H, Population and Housing Estimates for Cities, Counties, and the State, January 1, 2022 and 2023; Report E-4, Population Estimates for Cities, Counties, and the State, 2021-2023, with 2020 Benchmark. Available: https://dof.ca.gov/forecasting/demographics/estimates/.
[140] CBRE Research. 2024. San Francisco Office Market Report, Q4 2023. Available: https://mktgdocs.cbre.com/2299/5aff0a7c-2473-4703-8c06-6f11df4011de-524035556.pdf.
[141] CBRE Research. 2024. Oakland Office Market Report, Q4 2023. Available: https://mktgdocs.cbre.com/2299/1b70e0ff-7954-4582-ac91-b4b7ac79217e-842794856.pdf.

immediate vicinity of the ferry terminal. The analysis calculated 2040 adjustment factors for Redwood City home to San Francisco work trip and Redwood City home to Oakland work trip as 0.96 and 0.93. Overall, the adjustment factors should be interpreted as a larger downward ridership adjustment in the short run and a smaller downward ridership adjustment in the long run.

Table A5.2 Office Space Occupancy Trends in Ferry Terminal Cities

Year	Office Space Vacancy Rate			
	San Francisco Market	Fin. Dist. + South Fin. Dist. + Jackson Square Submarkets Combined	Oakland Market	Oakland CBD + Oakland JLS + Alameda Submarkets Combined
2010	16.0%	NA	NA	NA
2011	14.0%	NA	NA	NA
2012	10.0%	NA	NA	NA
2013	8.0%	NA	NA	NA
2014	7.0%	NA	14.0%	NA
2015	6.0%	NA	12.0%	NA
2016	7.0%	NA	7.0%	NA
2017	7.0%	NA	6.0%	NA
2018	6.0%	NA	7.0%	NA
2019	4.0%	NA	8.0%	NA
2020	4.0%	NA	10.0%	NA
2021	18.0%	NA	13.0%	NA
2022	24.0%	NA	16.0%	NA
2023	35.6%	32.8%	20.6%	23.6%
Historical Average	11.9%	NA	11.4%	NA

Sources: CBRE Research. San Francisco Office Market Report, Q4 2023. Available: https://mktgdocs.cbre.com/2299/5aff0a7c-2473-4703-8c06-6f11df4011de-524035556.pdf; CBRE Research. Oakland Office Market Report, Q4 2023. Available: https://mktgdocs.cbre.com/2299/1b70e0ff-7954-4582-ac91-b4b7ac79217e-842794856.pdf.
Key: Fin. = Financial, Dist. = District, CBD = Central Business District, JLS = Jack London Square, NA = Not Applicable

The ridership estimates in the Ferry Business Plan for Redwood City-destined work trips was directly proportional to the employment in the Redwood City terminal catchment area, which includes all of Redwood City (i.e., Oracle and nearby employment zone and all other Redwood City zones) and parts of the City of Menlo Park (i.e., Meta and nearby employment zone), City of San Carlos (i.e., East San Carlos commercial zone), and unincorporated area of North Fair Oaks (i.e., North Fair Oaks commercial zone), as shown in **Figure A5.1**. The catchment area employment estimate was updated using the latest data and the same methodology as in the Ferry Business Plan, and the new and original catchment area employment estimates were compared to determine an adjustment factor. The methodology involved use of U.S. Census "On the Map" tool[142] to make an initial employment estimate in the Redwood City Ferry Terminal catchment area of 125,553 jobs in 2021. This estimate was adjusted downward to 77,890 jobs based on a comparison (see **Table A5.3**) of "On the Map" tool-based employment data and the latest available Comprehensive Annual Financial Reports

[142]U.S. Census Bureau. No date. "On the Map" Tool. Available: https://onthemap.ces.census.gov/. Accessed August 8, 2024.

(CAFRs) at city levels.[143,144,145] This estimate was then compared to the catchment area employment estimate made in the Ferry Business Plan of 72,800 jobs to determine an adjustment factor for Redwood City-destined work trips of 1.07 for this study.

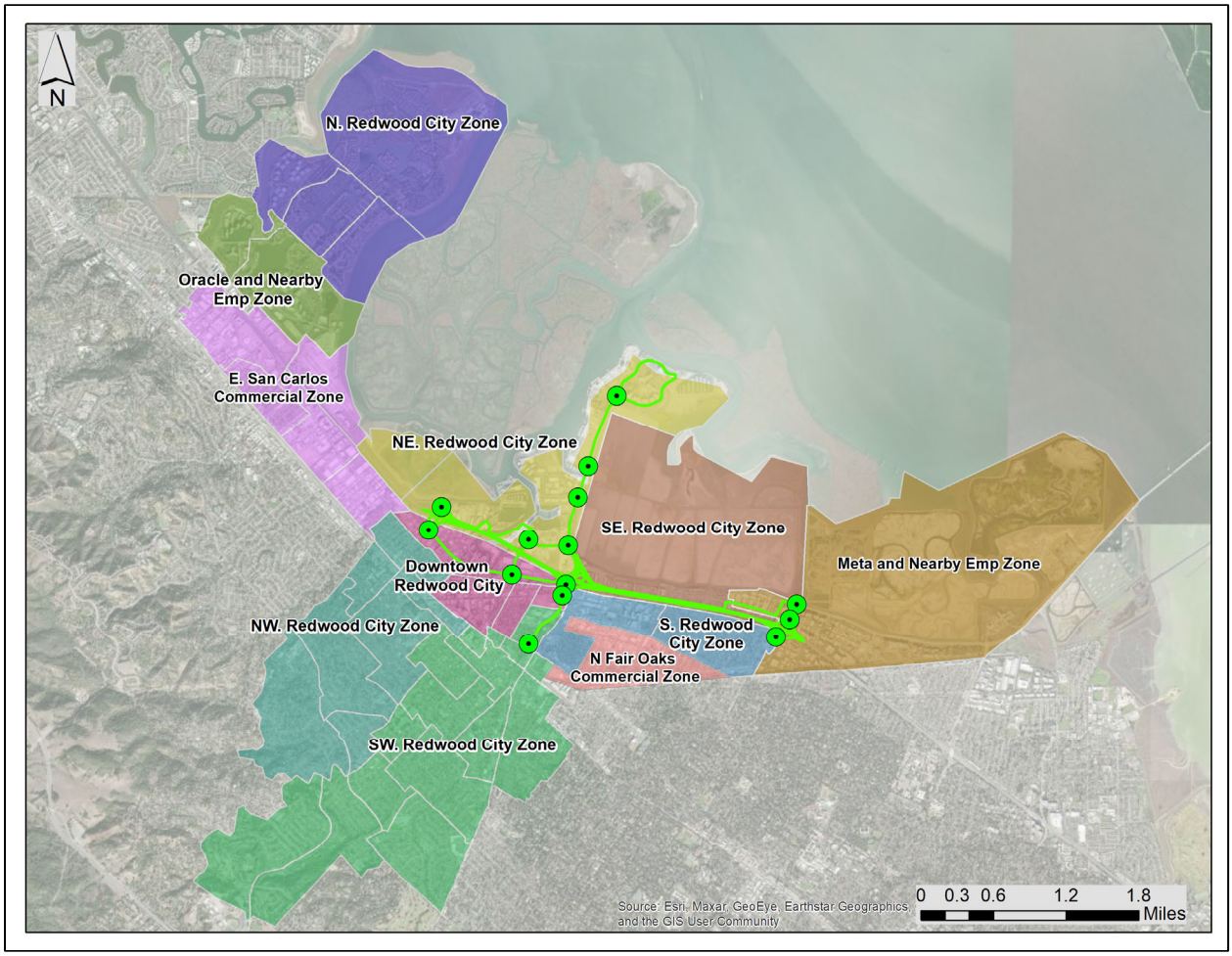


Figure A5.1 Proposed Project Catchment Area

[143] City of Redwood City. 2023. Annual Comprehensive Financial Report for the Fiscal Year Ended June 30, 2022. Available: https://www.redwoodcity.org/home/showpublisheddocument/26570/638176892878570000.

[144] City of Menlo Park. 2023. Annual Comprehensive Financial Report for the Fiscal Year Ended June 30, 2022. Available: https://menlopark.gov/files/sharedassets/public/v/2/administrative-services/documents/finance/annual-comprehensive-financial-reports/2022-annual-comprehensive-financial-report.pdf.

[145] City of San Carlos. 2023 Annual Comprehensive Financial Report for the Fiscal Year Ended June 30, 2022. Available: https://cms3.revize.com/revize/sancarlos/Document%20Center/City%20Hall/Departments%20And%20Divisions/Administrative%20Services/Finance/Financial%20Reports%20&%20Policies/Financial%20Reports/San%20Carlos%20ACFR%20FY2023.pdf.

Table A5.3 Employment Data Comparisons between "On the Map" Tool and CAFRs

Geography	2021 "On the Map" Tool Employment Data	CAFR Employment Data (Year)
Redwood City	63,739	50,430 (2022)
Menlo Park	61,023	20,400 (2022)
San Carlos	16,970	17,100 (2023)
Redwood City Ferry Terminal Catchment Area	125,553	77,890 (Existing Conditions)

Sources: U.S. Census Bureau. "On the Map" Tool. Available: https://onthemap.ces.census.gov/. Accessed August 8, 2024; City of Redwood City. 2023. Annual Comprehensive Financial Report for the Fiscal Year Ended June 30, 2022. Available: https://www.redwoodcity.org/home/showpublisheddocument/26570/638176892878570000; City of Menlo Park. 2023. 2022 Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2022. Available: https://menlopark.gov/files/sharedassets/public/v/2/administrative-services/documents/finance/annual-comprehensive-financial-reports/2022-annual-comprehensive-financial-report.pdf; City of San Carlos. 2023. Annual Comprehensive Financial Report for the Fiscal Year ended June 30, 2023. Available: https://cms3.revize.com/revize/sancarlos/Document%20Center/City%20Hall/Departments%20And%20Divisions/Administrative%20Services/Finance/Financial%20Reports%20&%20Policies/Financial%20Reports/San%20Carlos%20ACFR%20FY2023.pdf.
Key: CAFR = Comprehensive Annual Financial Reports

- **Travel trends:** As per Bay Area Council Employer Surveys,[146] the remote work eligible jobs commuted 4.4 days per week on average under pre-pandemic (2019) conditions; this reduced to 3.0 days per week on average by November 2023, where the remote work eligible jobs formed 51 percent, 40 percent, and 47 percent of the total jobs in San Francisco, Oakland, and Redwood City, respectively. The commute days per week is a weighted average of the responses from 253 businesses in May 2021 and 182 businesses in November 2023 across the Bay Area. The remote work eligible job shares were derived from the countywide averages for San Francisco, Alameda, and San Mateo County, respectively.[147] For jobs that are not remote work eligible, a 5 days per week work schedule was assumed. Combining the shares of remote work eligible and non-eligible job shares and commute days per week averages, 2023 adjustment factors on an average weekday were estimated for San Francisco, Oakland, and Redwood City destined work trips as 0.85, 0.88, and 0.86, respectively. By 2040, the average number of commute days was assumed to rebound; therefore, no adjustment was made in this year, that is, 2040 adjustment factors on an average weekday was assumed as 1.0 for San Francisco, Oakland, and Redwood City destined work trips.

For the ferry service routes, the appropriate adjustment factors were combined by multiplying them to derive the overall ridership adjustment factors as shown in **Table A5.4**. Weekend and event day ridership trip estimates made in the Ferry Business Plan were adjusted proportionately to the weekday ridership trip estimates for this study for reporting purposes.

Due to population, economic, and travel trends, ridership on the proposed service routes changed from 2,140 weekday daily riders in 2019 as estimated in the Ferry Business Plan to 1,730 weekday daily riders in 2023 as estimated in this study, a decrease of 19 percent. For comparison, WETA's ridership across all service routes combined on an average weekday changed from 12,526 riders in July 2019[148] to 8,716 riders

[146] Bay Area Council. 2024. Return to Office Survey - November 2023 and May 2021 Results. Available: https://www.bayareacouncil.org/employer-survey-results/. Accessed August 8, 2024.
[147] Bay Area Council Economic Institute. 2020. Remote Work in the Bay Area, Remote Work Eligibility by Job Location (page 10). Available: http://www.bayareaeconomy.org/report/remote-work-in-the-bay-area/.
[148] Water Emergency Transportation Authority (WETA). 2019. Board of Directors September 5, 2019 Board Meeting Agenda Packet. Available: https://weta.sanfranciscobayferry.com/filebrowser/download/470.

in July 2023,[149] a decrease of 30 percent. Thus, the ridership adjustment performed in this study is within reasonable expectations. The change in weekday daily riders in 2040 was smaller; the trends resulted in a change from 4,060 weekday daily riders to 4,010 weekday daily riders.

Table A5.4 Overall Ridership Adjustment Factors

City Pair	2023 Ridership Adjustment Factor	2040 Ridership Adjustment Factor
San Francisco home to Redwood City work	0.86 [= 1.07 (Economic Trend AF) x 0.94 (Population Trend AF) x 0.86 (Travel Trend AF)]	1.00 [= 1.07 (Economic Trend AF) x 0.94 (Population Trend AF) x 1.00 (Travel Trend AF)]
Oakland home to Redwood City work	0.89 [= 1.07 (Economic Trend AF) x 0.97 (Population Trend AF) x 0.86 (Travel Trend AF)]	1.04 [= 1.07 (Economic Trend AF) x 0.97 (Population Trend AF) x 1.00 (Travel Trend AF)]
Redwood City home to San Francisco work	0.56 [= 0.70 (Economic Trend AF) x 0.94 (Population Trend AF) x 0.85 (Travel Trend AF)]	0.90 [= 0.96 (Economic Trend AF) x 0.94 (Population Trend AF) x 1.00 (Travel Trend AF)]
Redwood City home to Oakland work	0.69 [= 0.83 (Economic Trend AF) x 0.94 (Population Trend AF) x 0.88 (Travel Trend AF)]	0.87 [= 0.93 (Economic Trend AF) x 0.94 (Population Trend AF) x 1.00 (Travel Trend AF)]

Source: CDM Smith, 2024.
Key: AF = Adjustment Factor

- **Ferry Transit Time Update:** In early 2025, COWI, on behalf of WETA, performed a ferry operations (wake) analysis[150] and found the need to increase the ferry transit times (in-vehicle travel times) for each ferry service by six (6) minutes over the ferry transit times used in the Ferry Business Plan. This fixed increase in ferry transit time was directly used as an input in the ferry ridership travel demand model built for the Redwood City Ferry Business Plan and the adjustments for population, economic, and travel trends were repeated.

Due to the ferry transit time increase, weekday daily riders in 2023 further dropped from 1,730 to 1,470 (approximately 18 percent), and in 2040 further dropped from 4,010 to 3,690 (approximately 9 percent). The effect of the ferry transit time increase on the ridership is lower in 2040 than in 2023 as the auto travel times become less reliable in 2040 as compared to 2023. The ridership forecasting methodology which was used to estimate the impacts of the ferry transit time increases is sensitive to the comparison of estimated ferry transit times and auto travel times. When ferry transit times increase and become substantially greater than auto trip travel times, the forecasting methodology yields significant decreases in expected ferry ridership.

The original ridership estimates in the Ferry Business Plan and the final adjusted ridership estimates in this study, in daily person trips by service route, are shown in **Table A5.5**.

[149] Water Emergency Transportation Authority (WETA). 2023. Board of Directors September 12, 2023 Board Meeting Agenda Packet. Available: https://weta.sanfranciscobayferry.com/sites/default/files/weta-public/currentmeeting/b091223aFULL.pdf.
[150] COWI. 2025. Port of Redwood City – Ferry Terminal Environmental Review: Ship Wake and Morphology Assessment Report.

Table A5.5 Ferry Terminal Average Daily Ridership Adjustments

Source	City pair	Year 2019			Year 2023			Year 2040		
		Wkdy. Daily R'shp	Wknd. Daily R'shp	Spl. Events Day R'shp	Wkdy. Daily R'shp	Wknd. Daily R'shp	Spl. Events Day R'shp	Wkdy. Daily R'shp	Wknd. Daily R'shp	Spl. Events Day R'shp
Ferry Business Plan (Original)	Oakland – Redwood City	850	N/A	N/A				1,870	N/A	N/A
	San Francisco – Redwood City	1,290	1,130	140				2,190	1,930	240
This Study (Adjusted)	Oakland – Redwood City				640	N/A	N/A	1,780	N/A	N/A
	San Francisco – Redwood City				830	730	90	1,910	1,680	210

Sources: City of Redwood City. October 2020. Ferry Financial Feasibility Study & Cost-Benefit and Economic Impact Analyses. Prepared by CDM Smith. Available: https://www.redwoodcity.org/home/showpublisheddocument/22921/637442616488470000; Port of Redwood City. June 2, 2022. Redwood City Ferry Business Plan Prepared by CDM Smith. Available: https://www.redwoodcityport.com/_files/ugd/521530_787a23efc80a4b11956b3e18e66c9160.pdf.

Key: N/A = Not Applicable, Wkdy. = Weekday, Wknd. = Weekend, Spl. = Special, R'shp = Ridership

Attachment 6 – Project Traffic Volume Diagrams

Attachment 6 has diagrams showing a.m. and p.m. peak hour turning volumes for both the ferry terminal component and the full project at project area intersections under existing (2023) and cumulative (2040) conditions that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

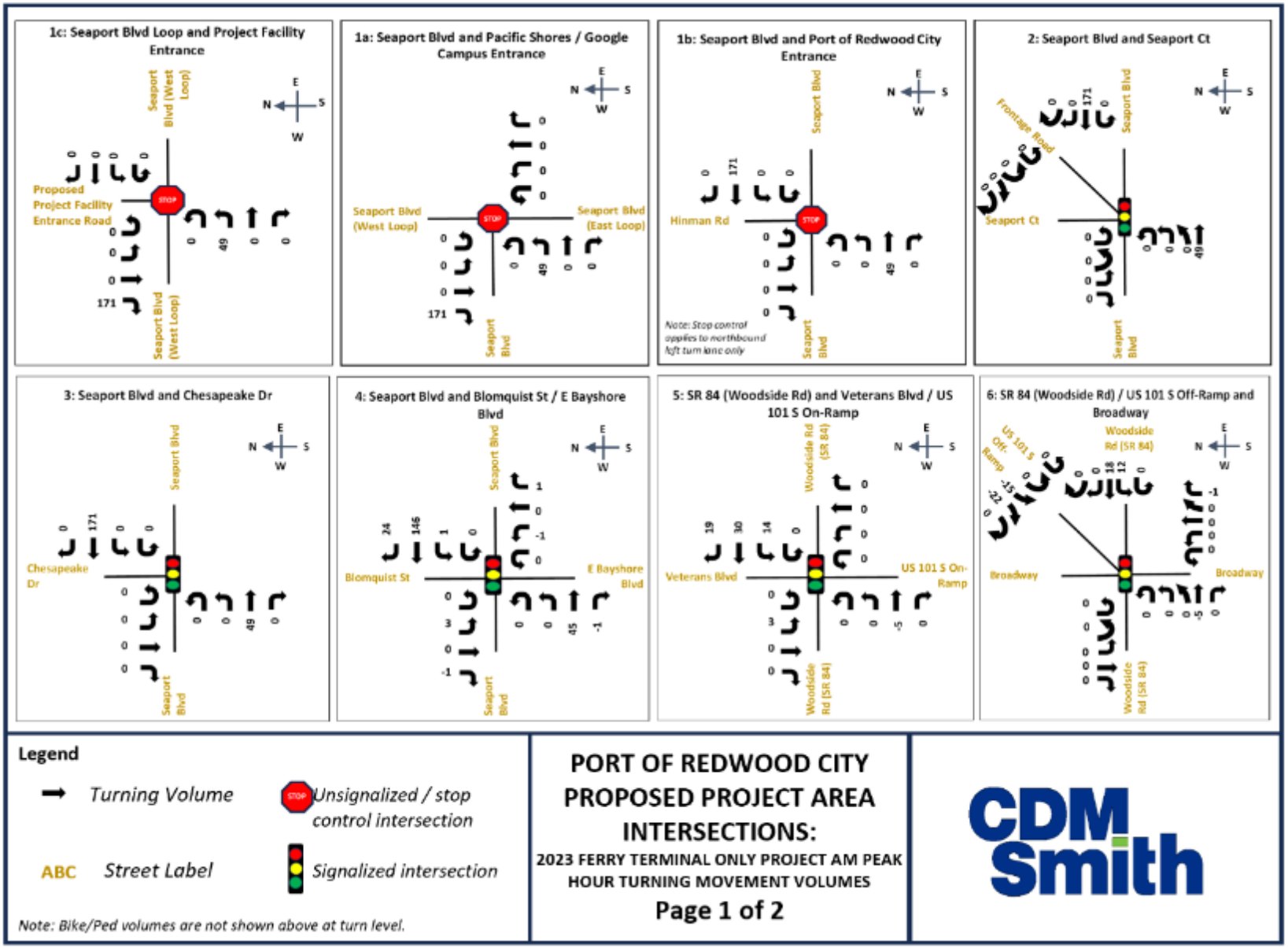


Figure A6.1 2023 Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections

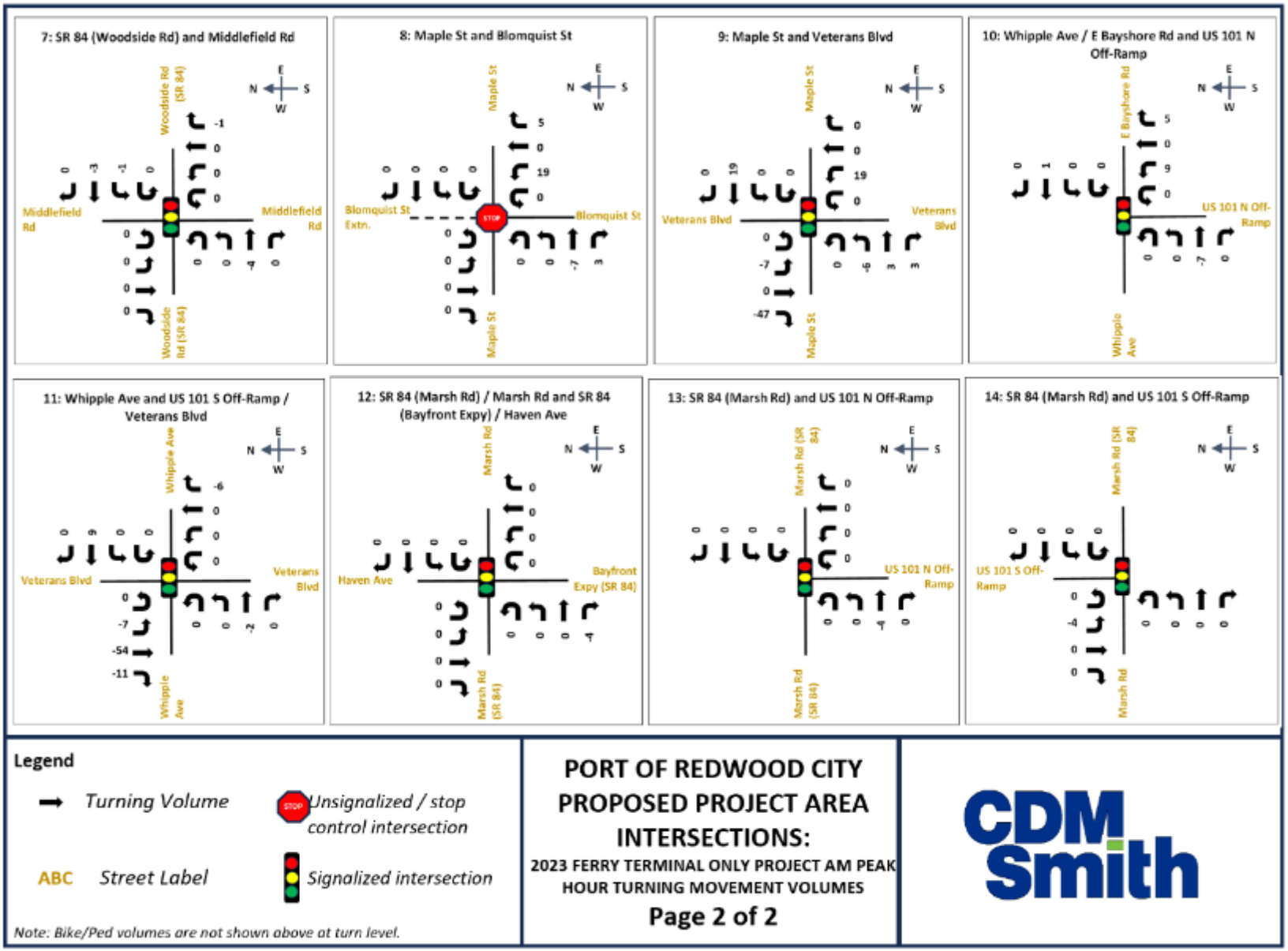


Figure A6.1 2023 Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

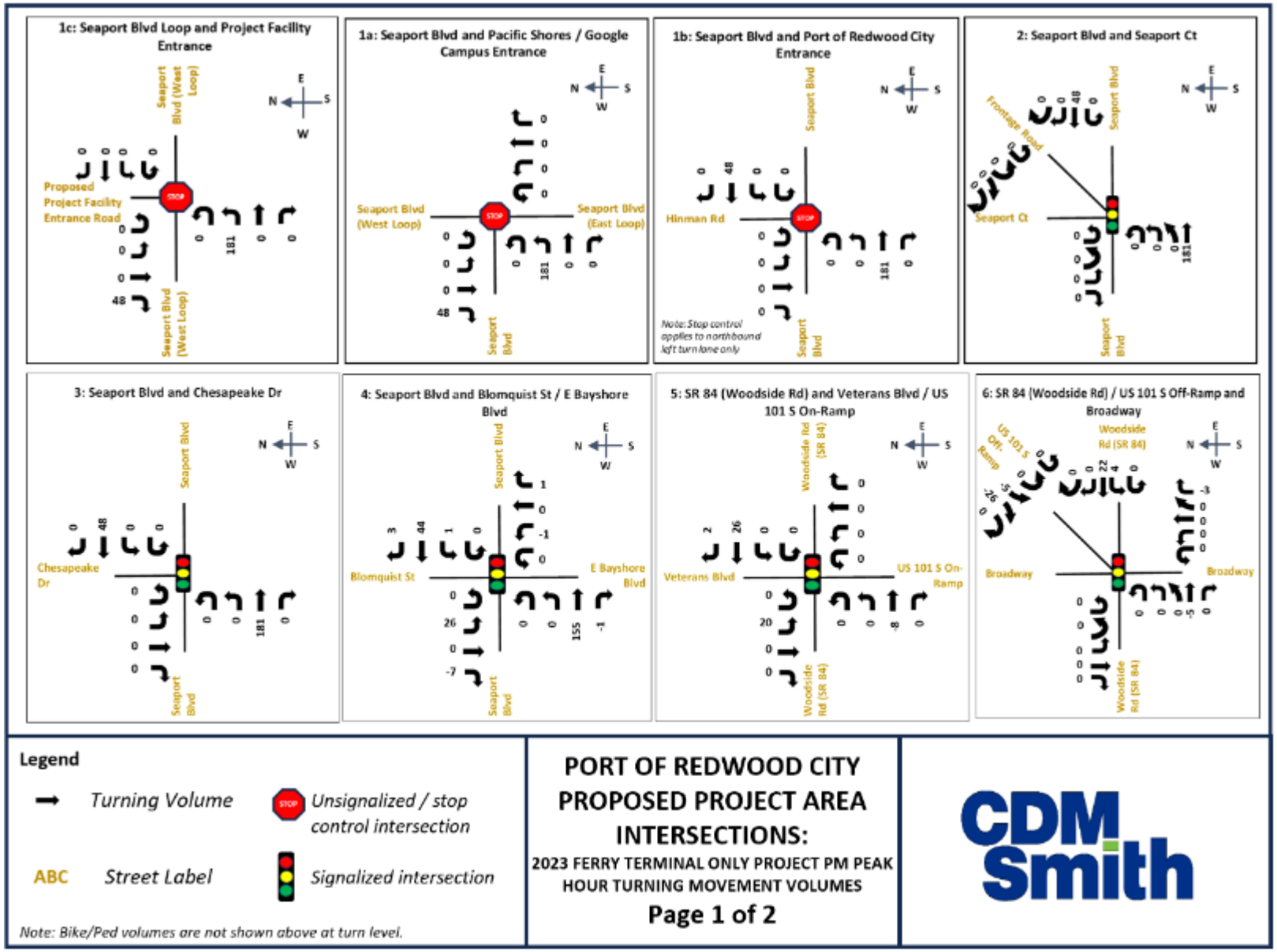


Figure A6.2 2023 Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections

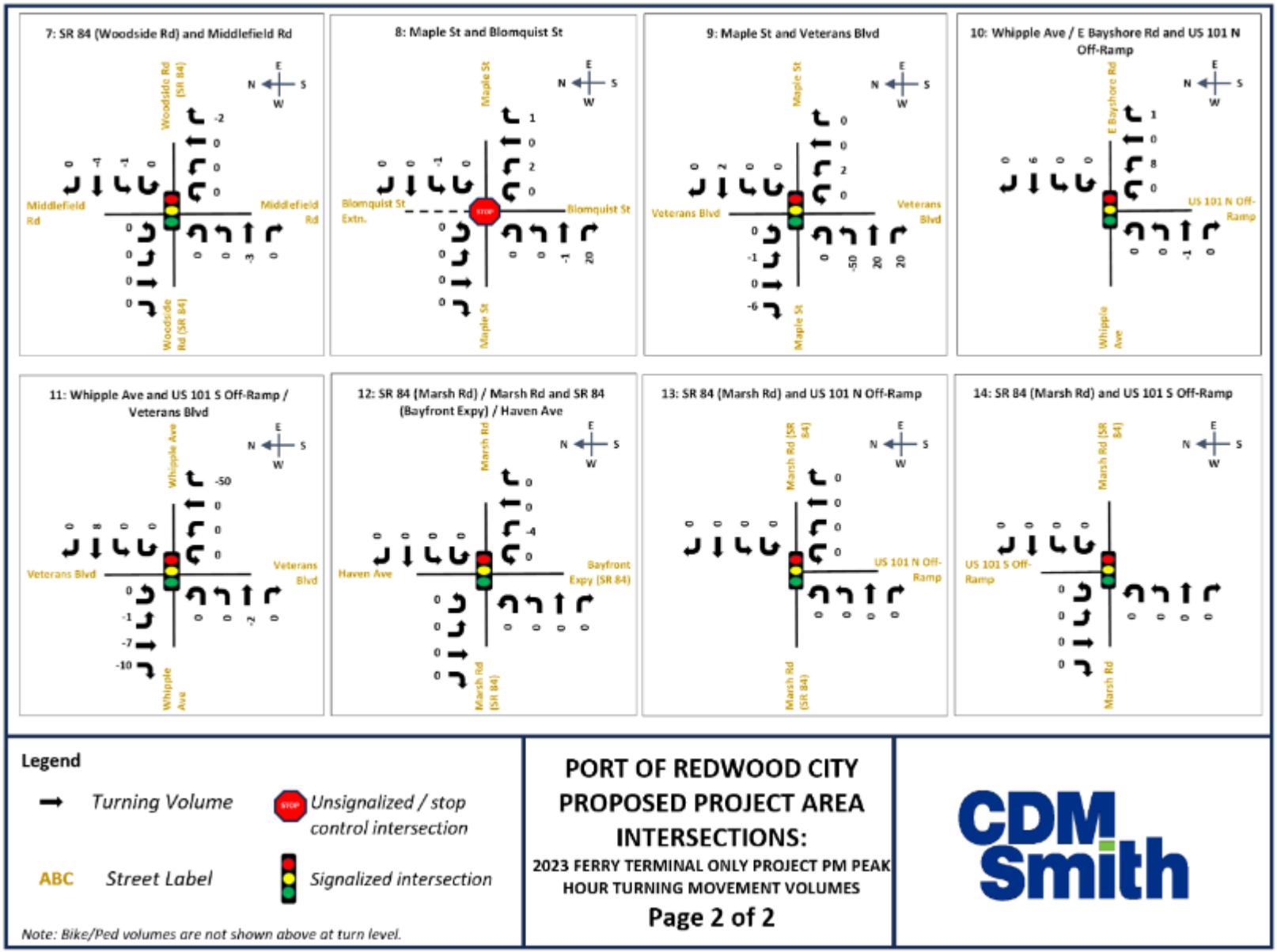


Figure A6.2 2023 Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

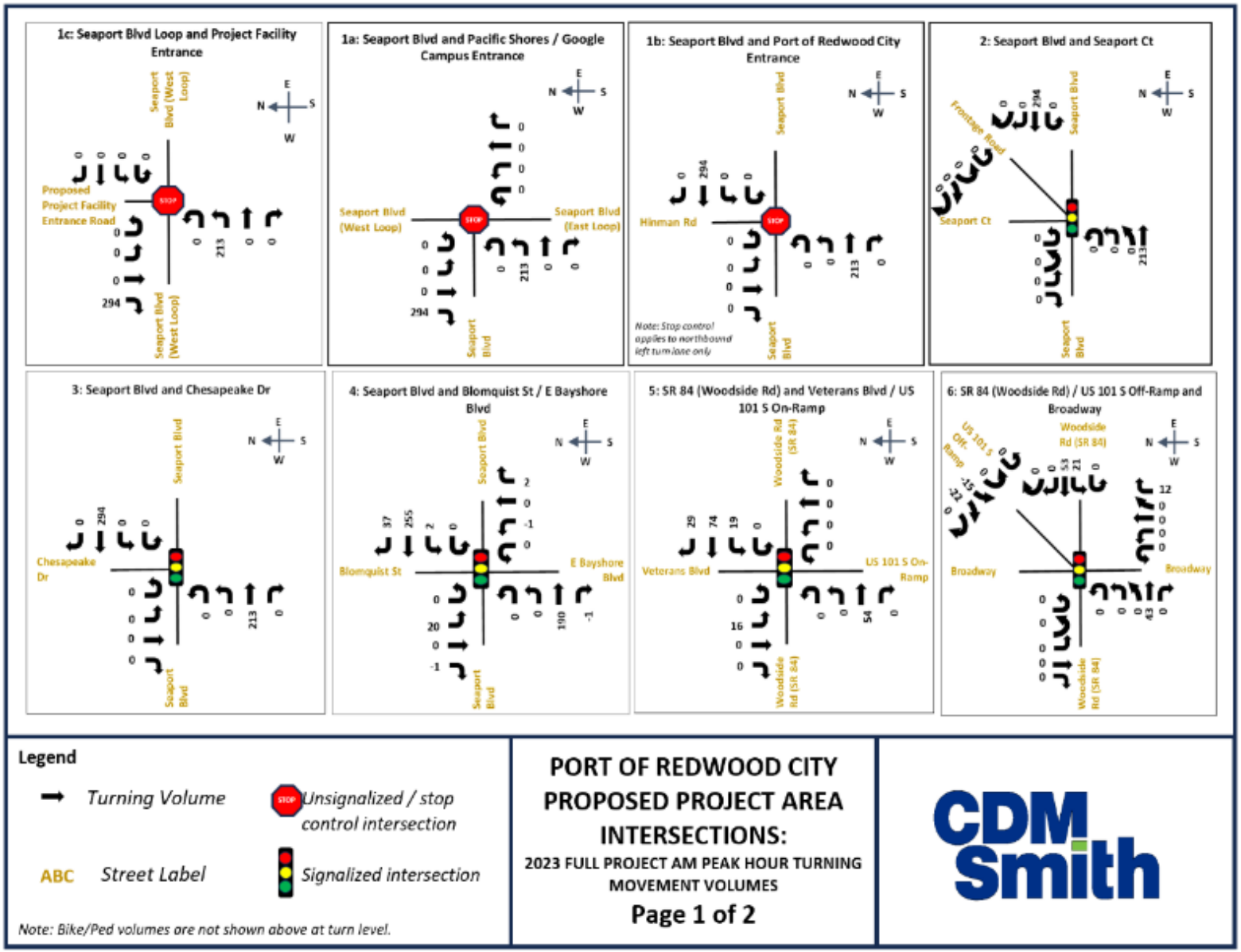


Figure A6.3 2023 Full Project AM Peak Hour Turning Volumes at Project Area Intersections

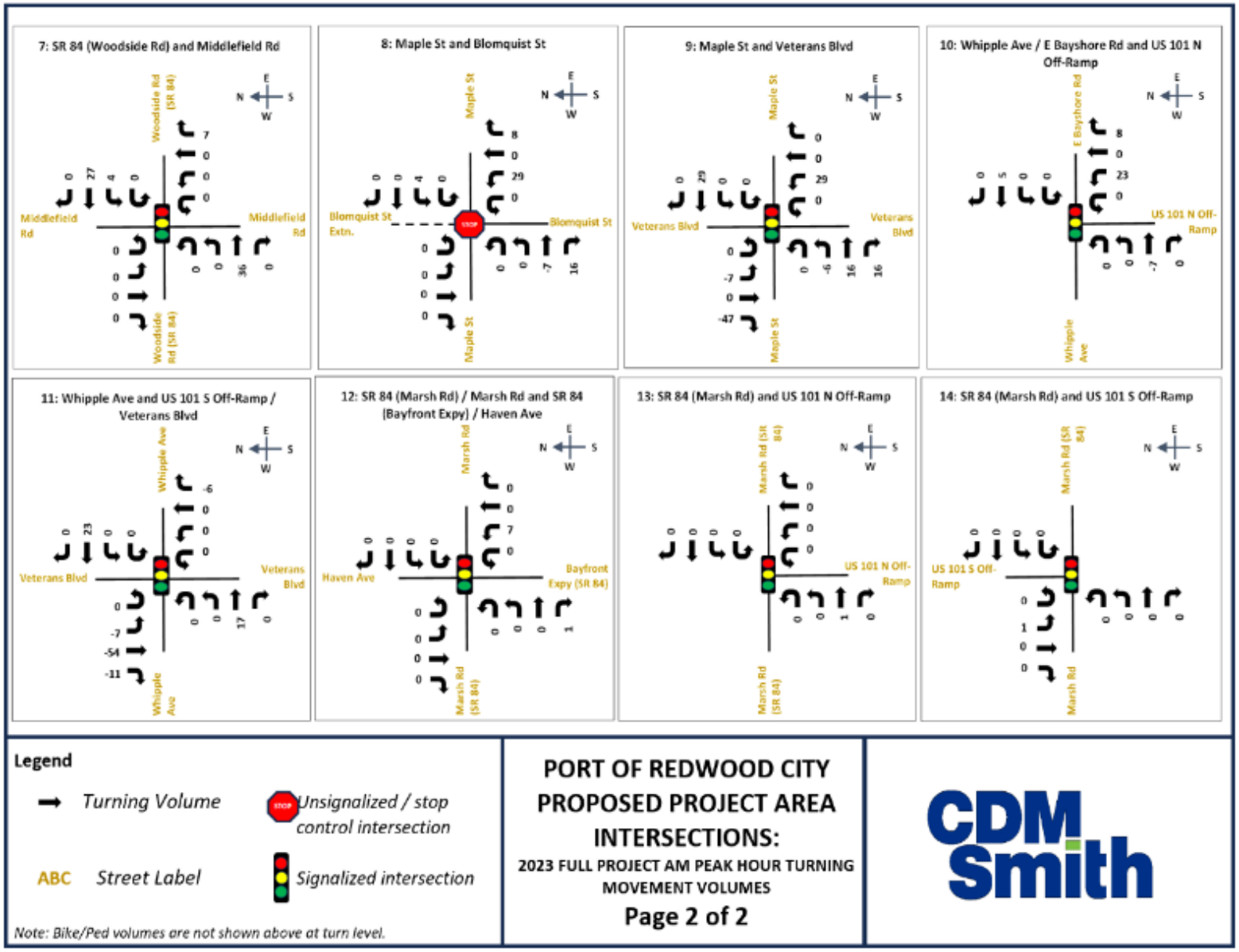


Figure A6.3 2023 Full Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

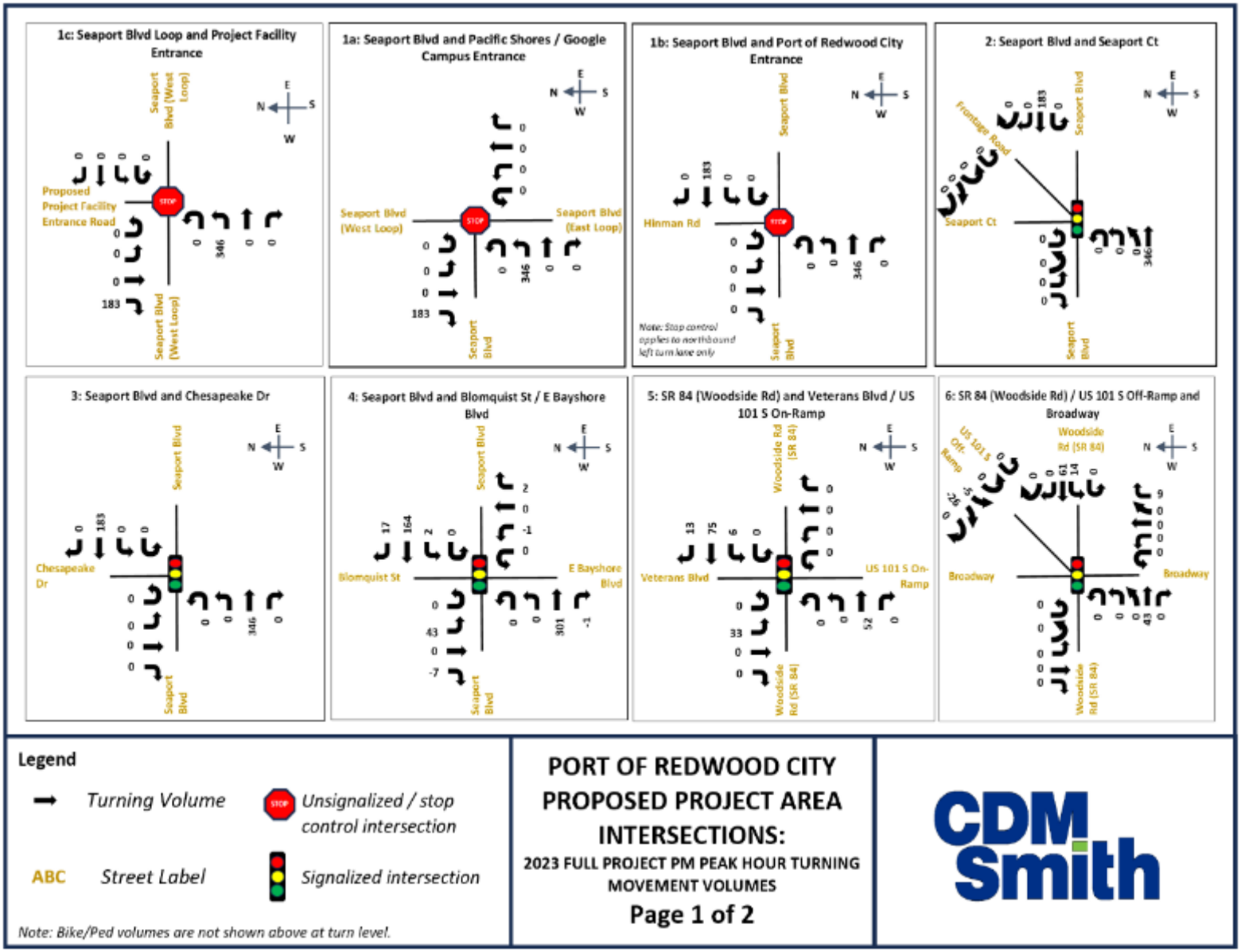


Figure A6.4 2023 Full Project PM Peak Hour Turning Volumes at Project Area Intersections

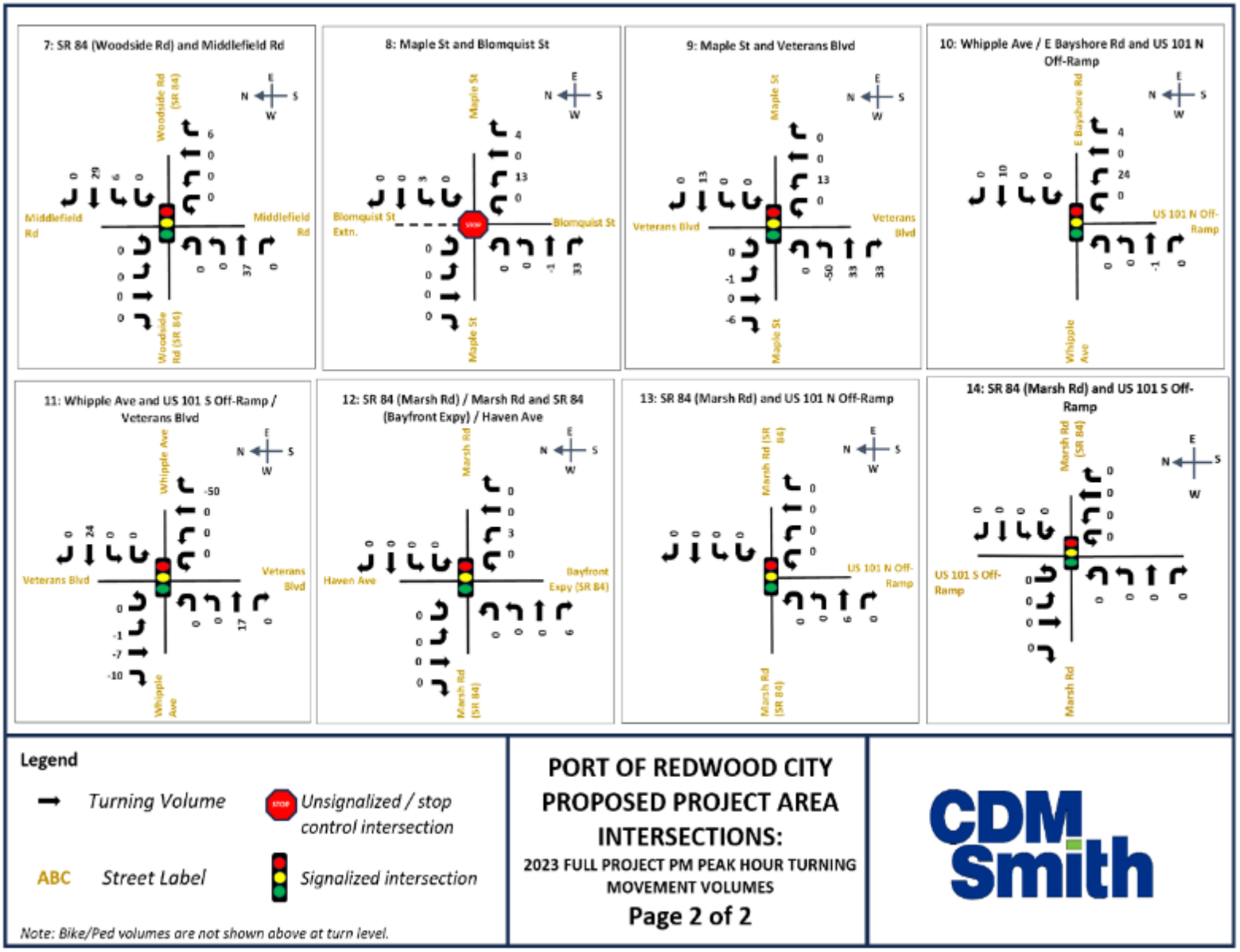


Figure A6.4 2023 Full Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

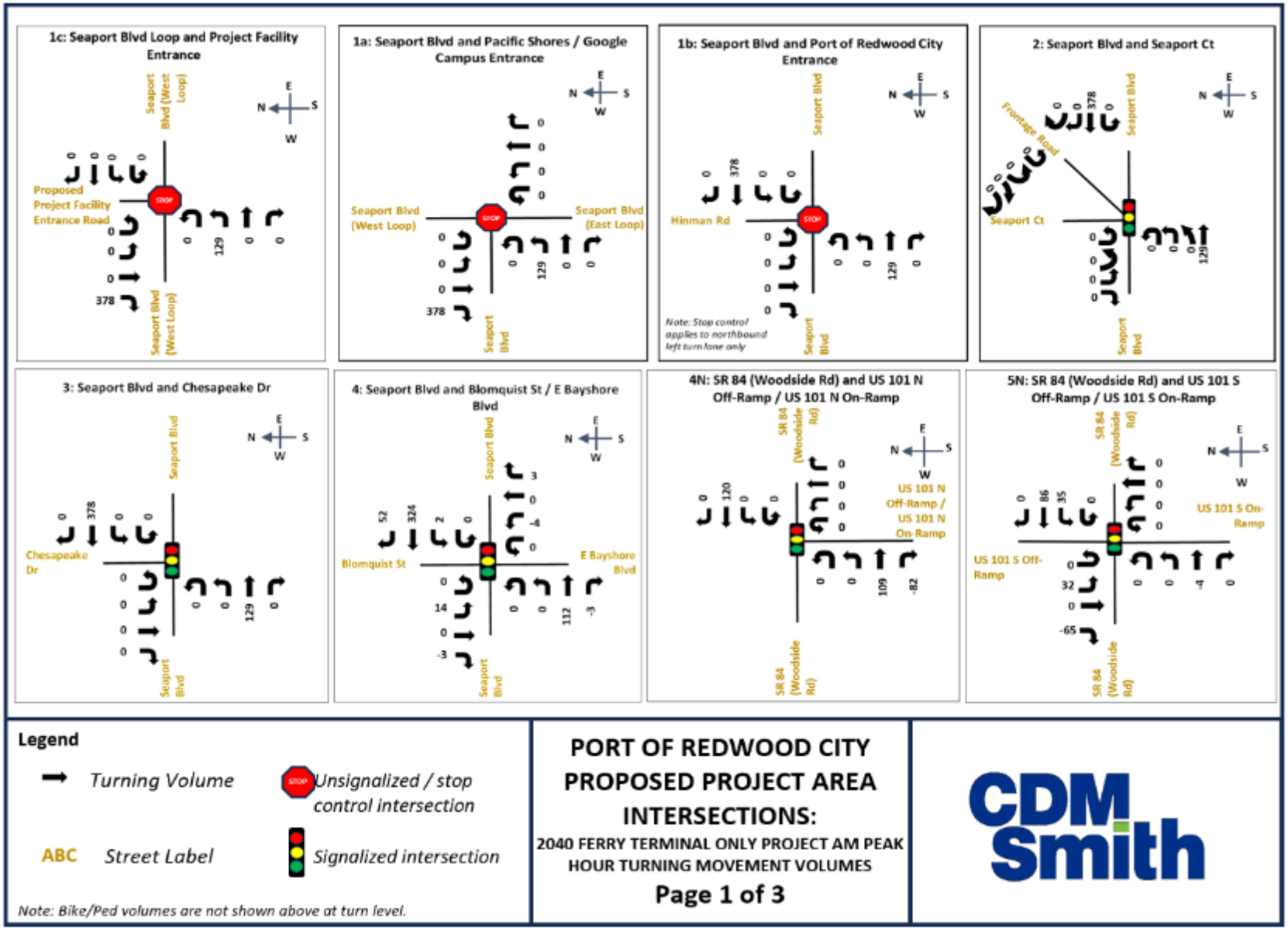


Figure A6.5 2040 Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections

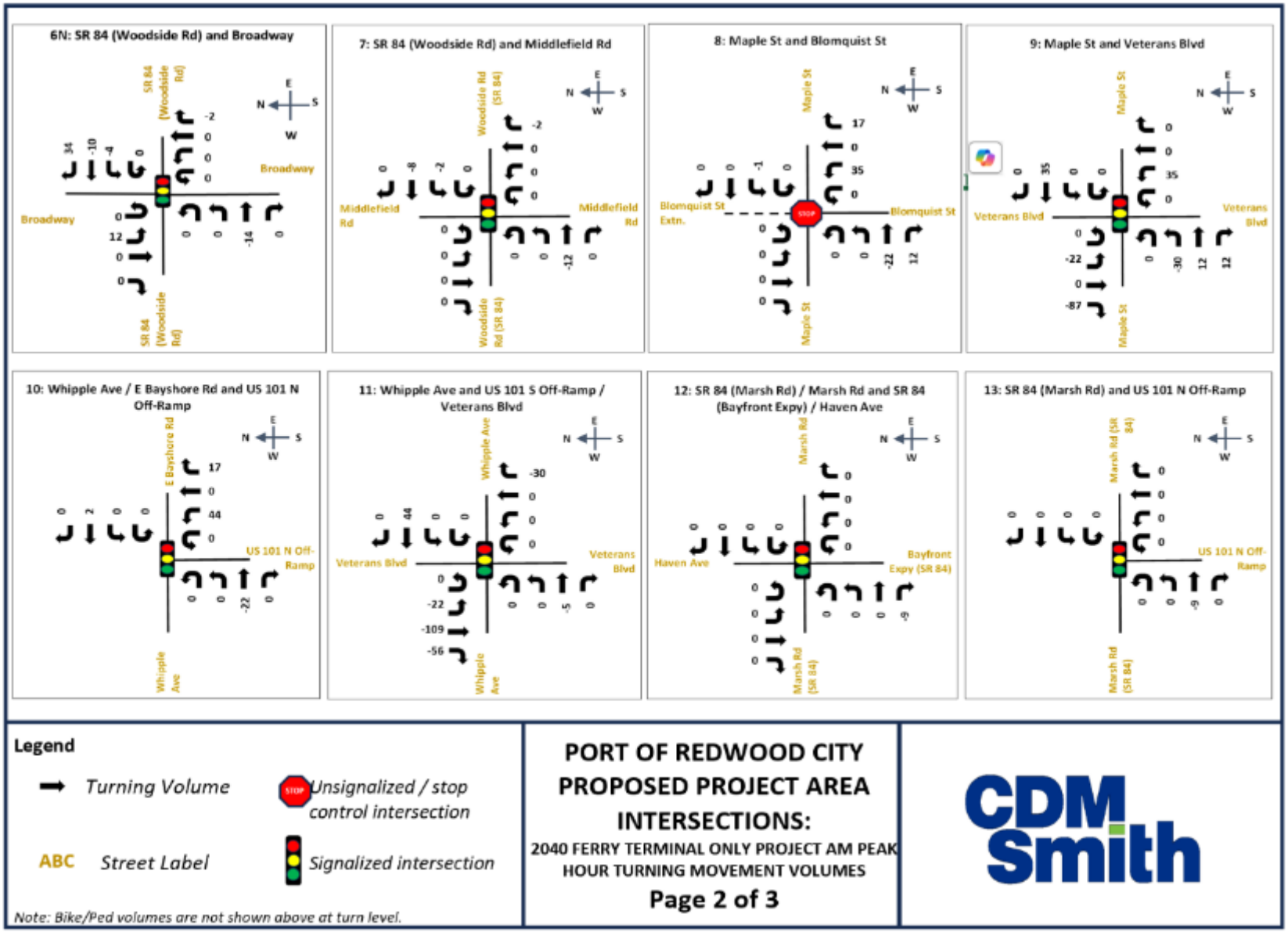


Figure A6.5 2040 Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

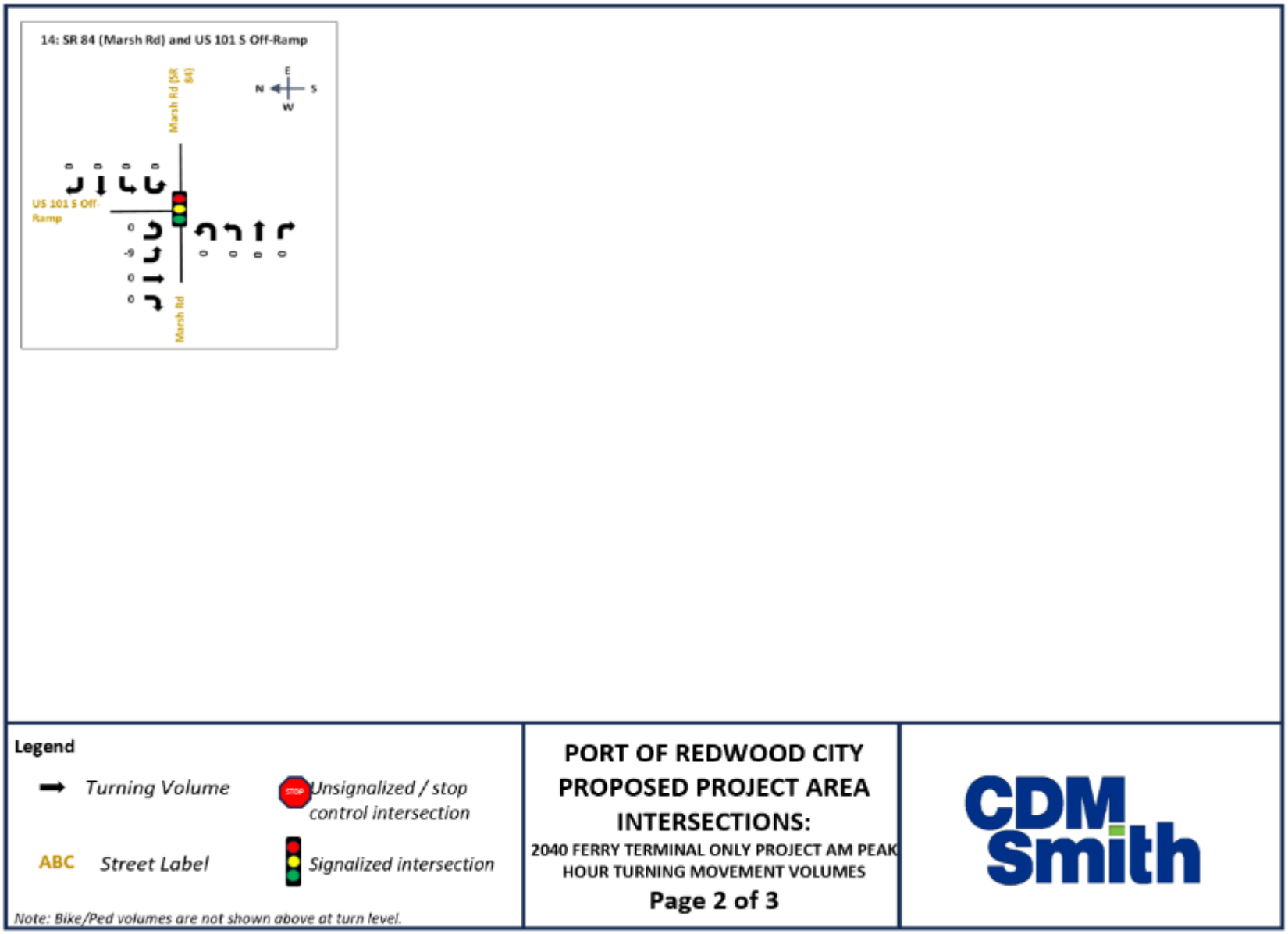


Figure A6.5 2040 Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

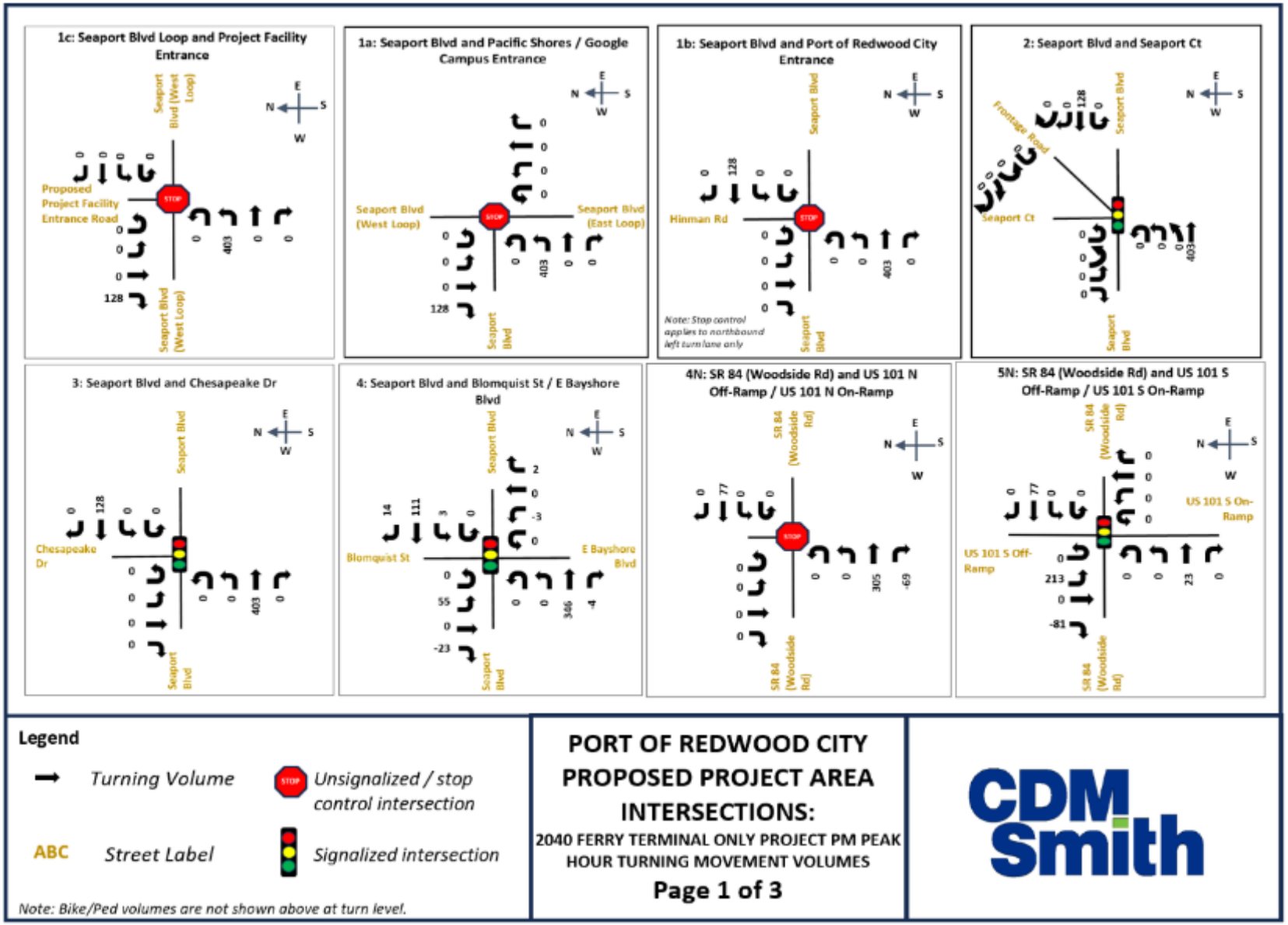


Figure A6.6 2040 Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections

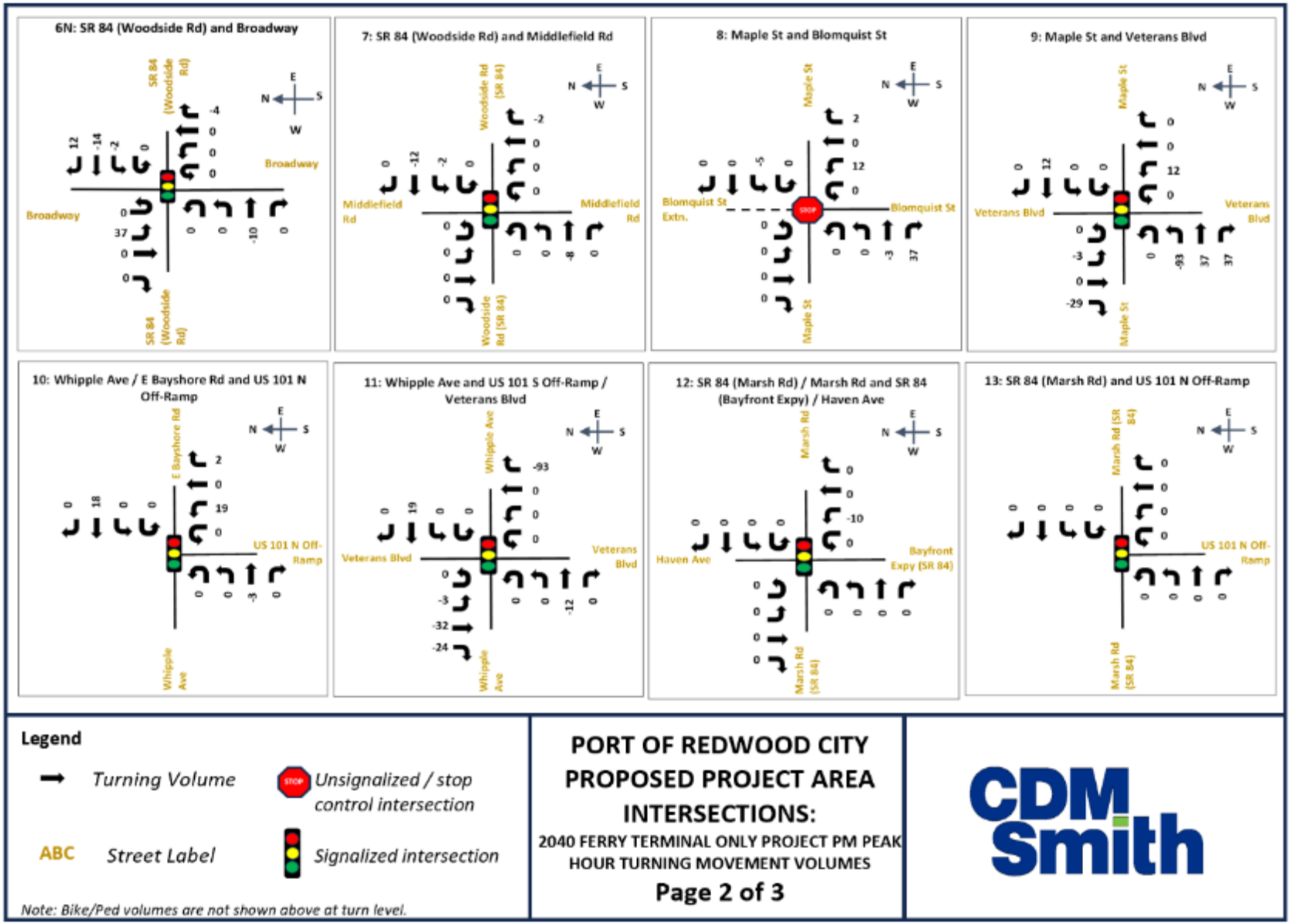


Figure A6.6 2040 Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

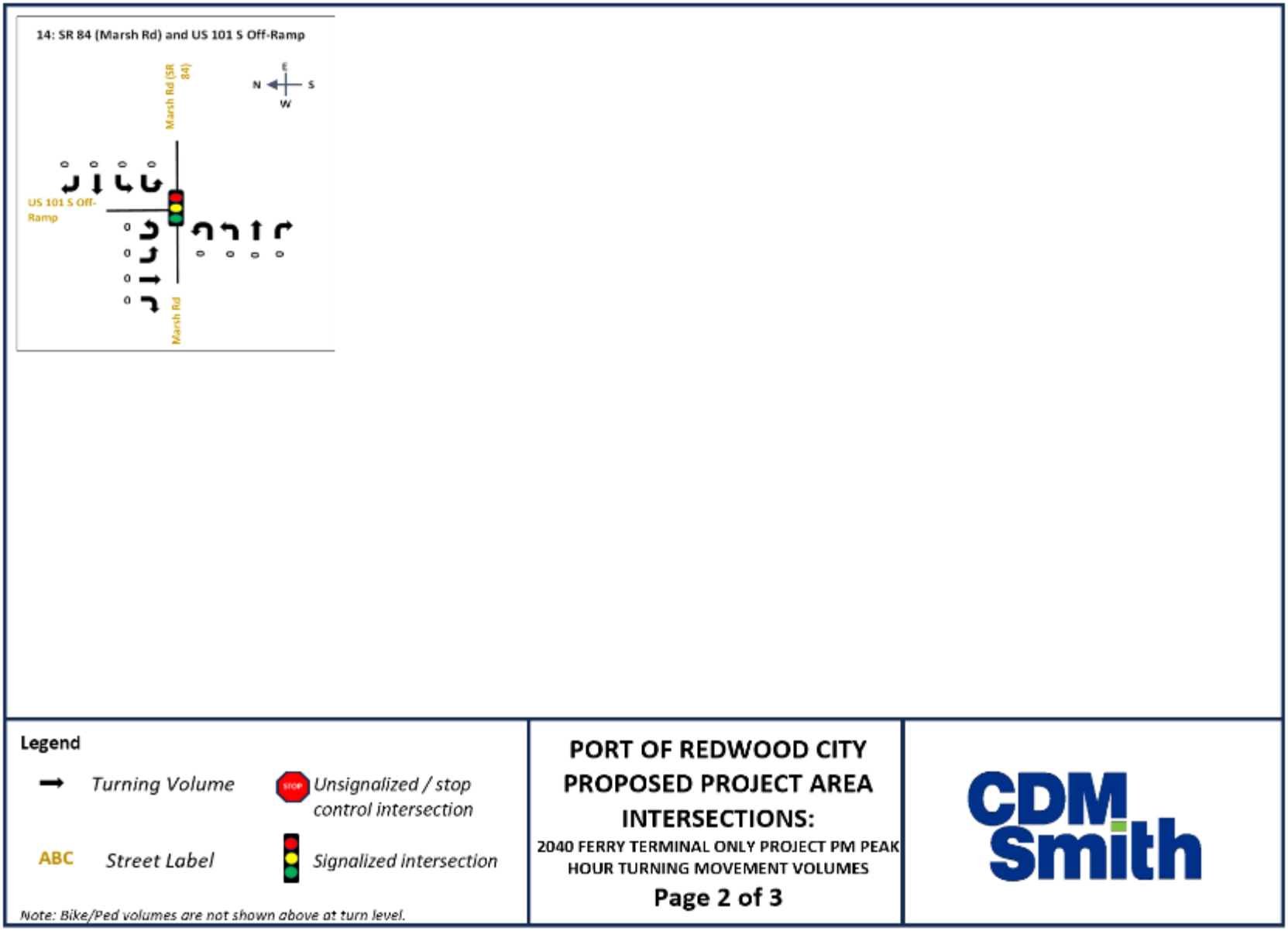


Figure A6.6 2040 Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

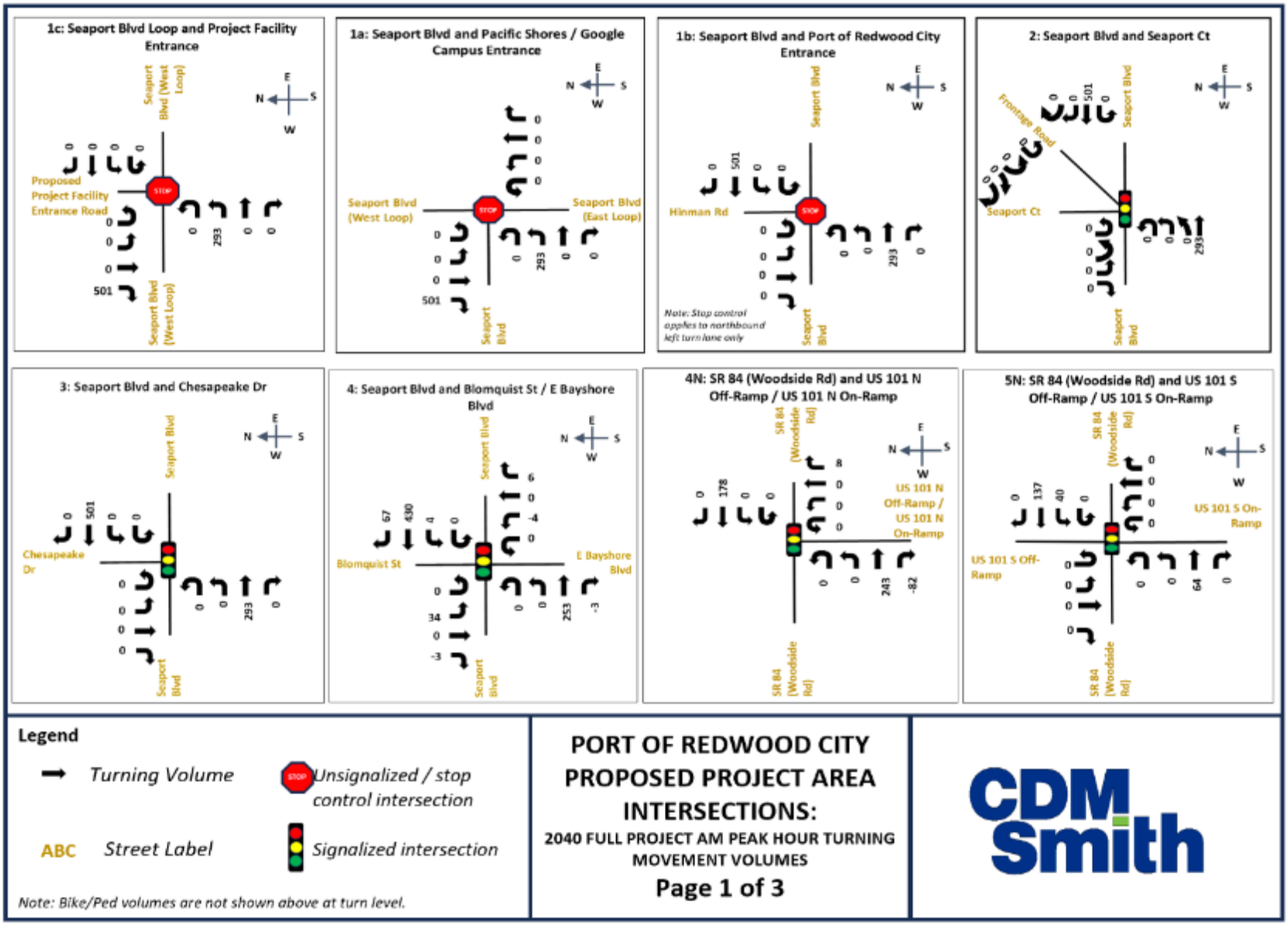


Figure A6.7 2040 Full Project AM Peak Hour Turning Volumes at Project Area Intersections

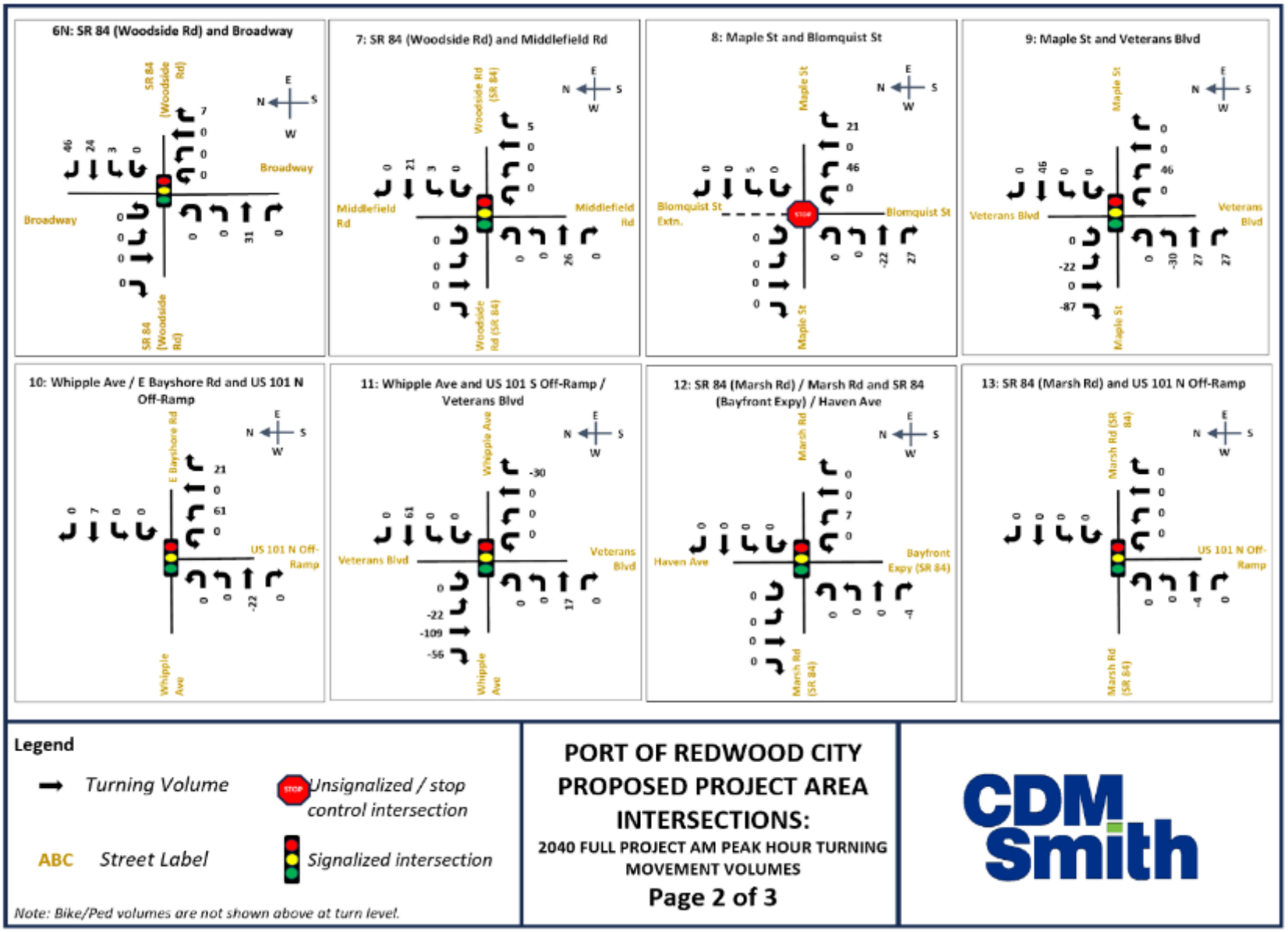


Figure A6.7 2040 Full Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

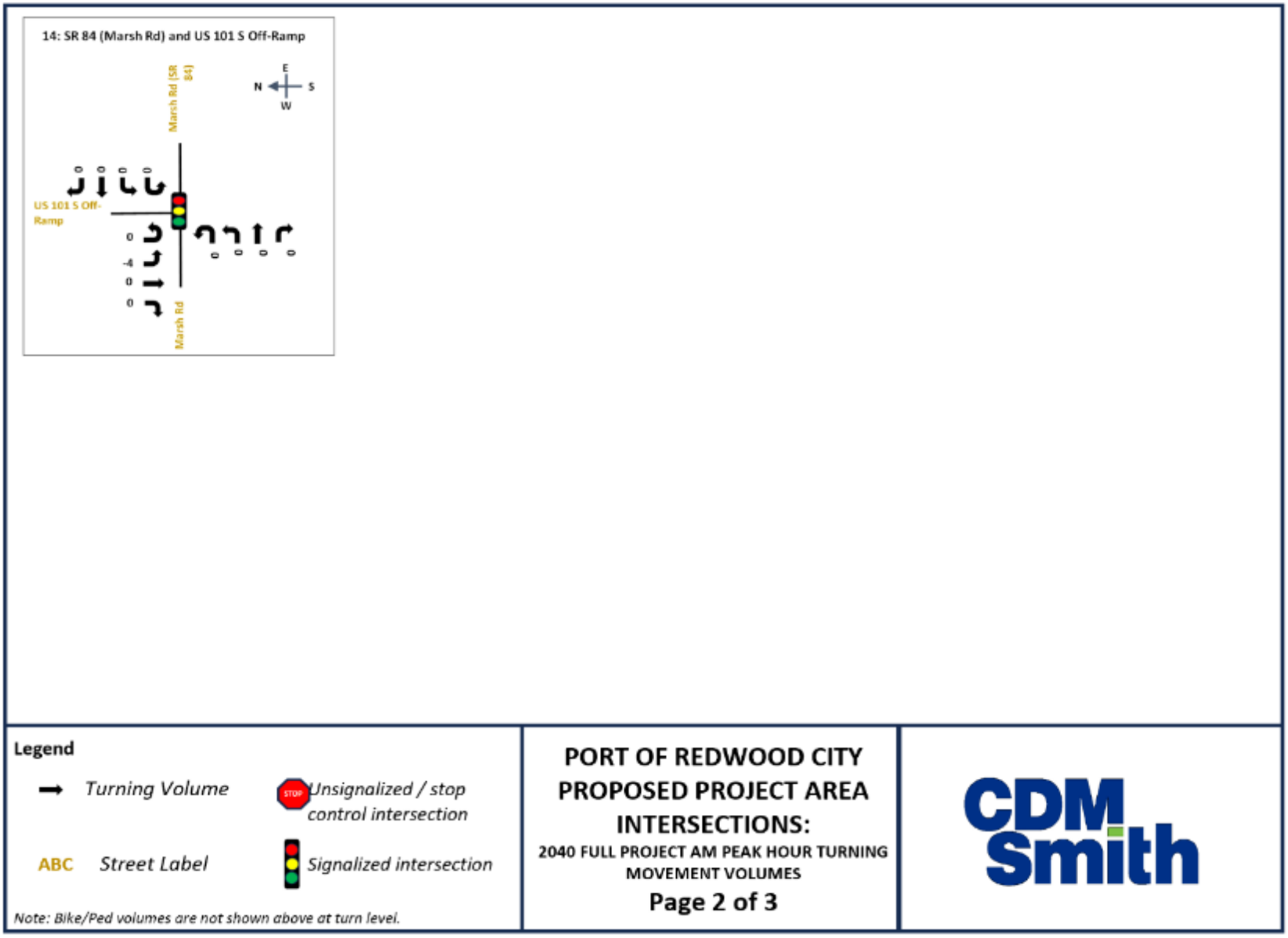


Figure A6.7 2040 Full Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

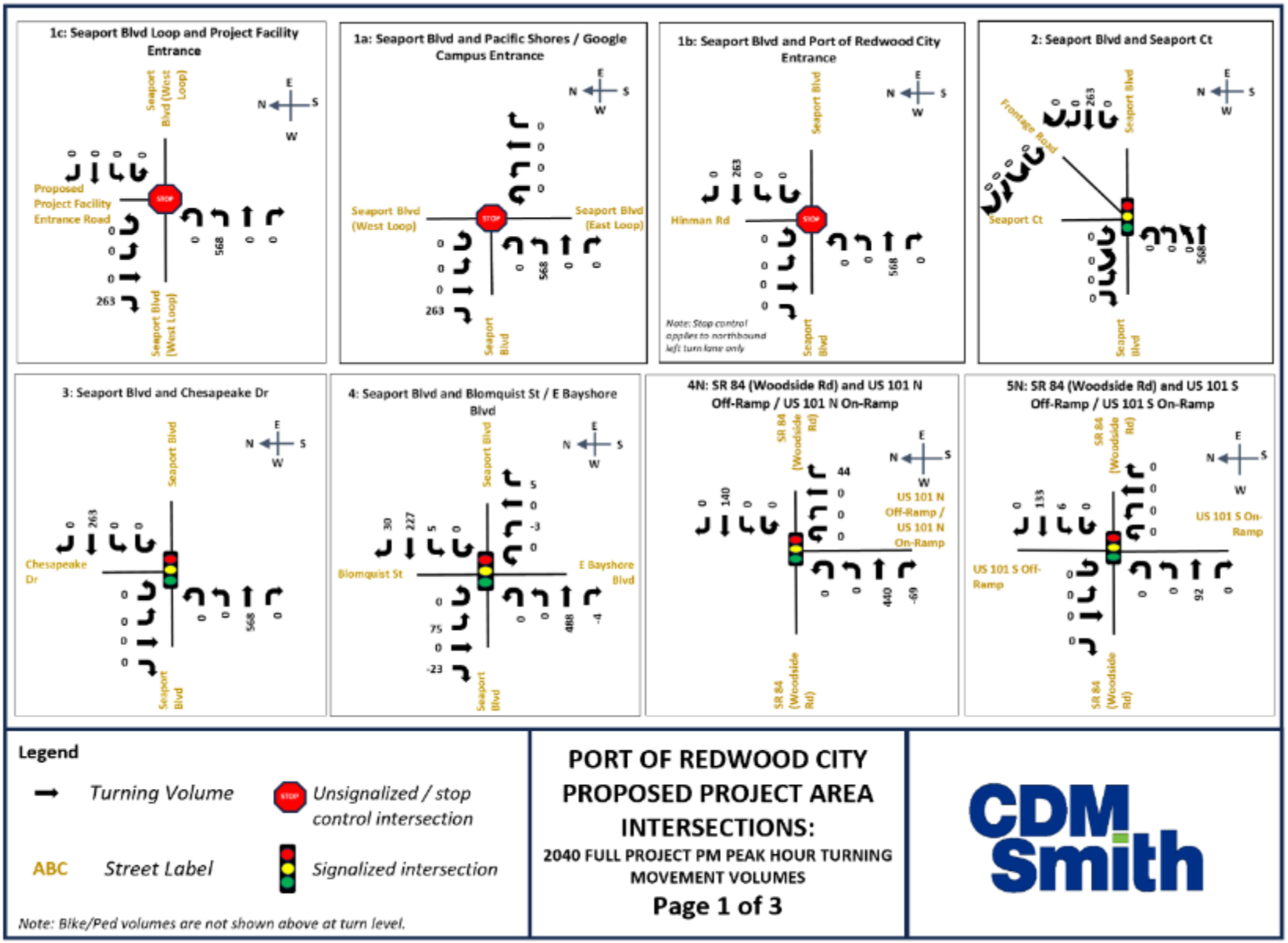


Figure A6.8 2040 Full Project PM Peak Hour Turning Volumes at Project Area Intersections

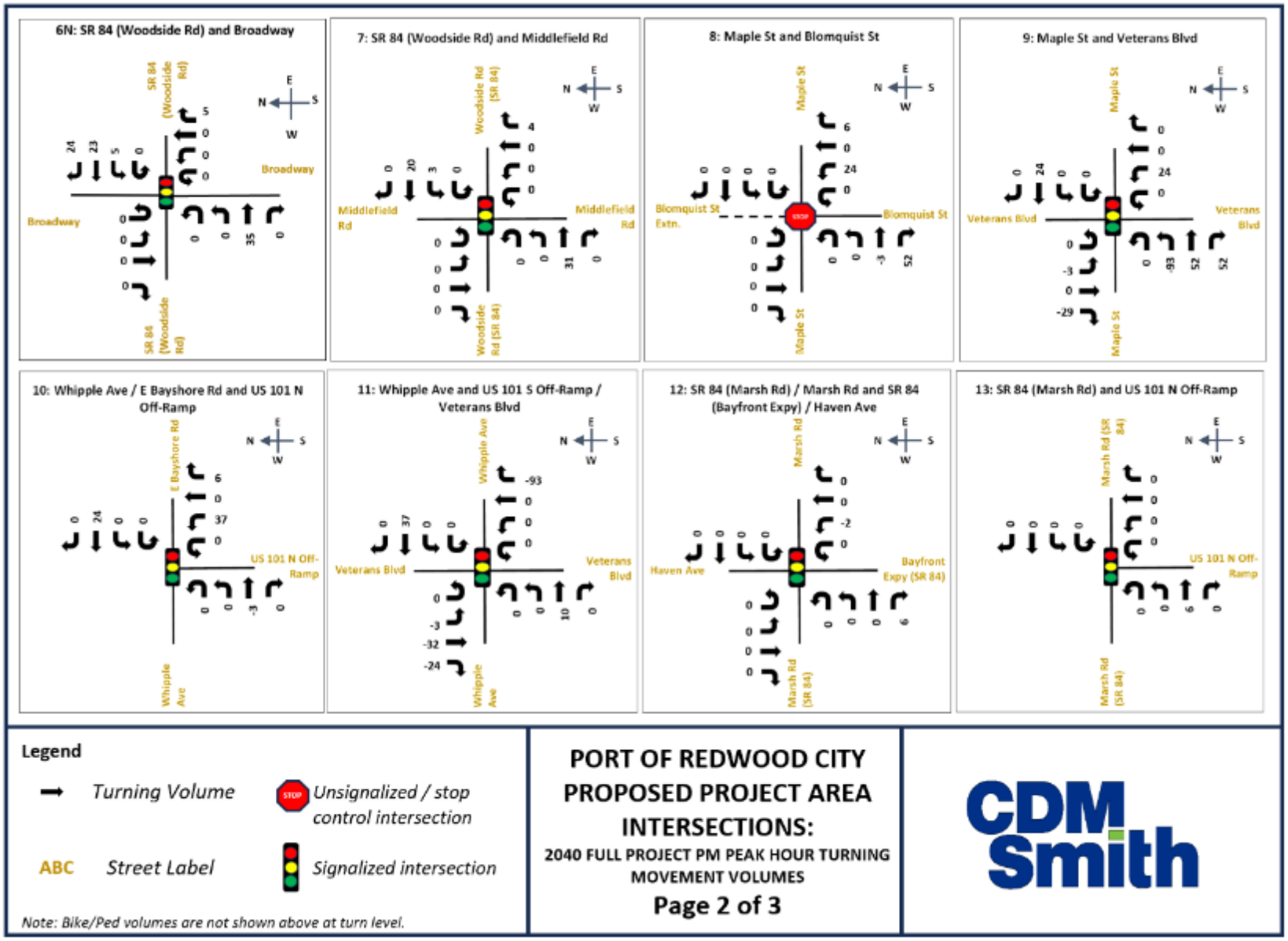


Figure A6.8 2040 Full Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

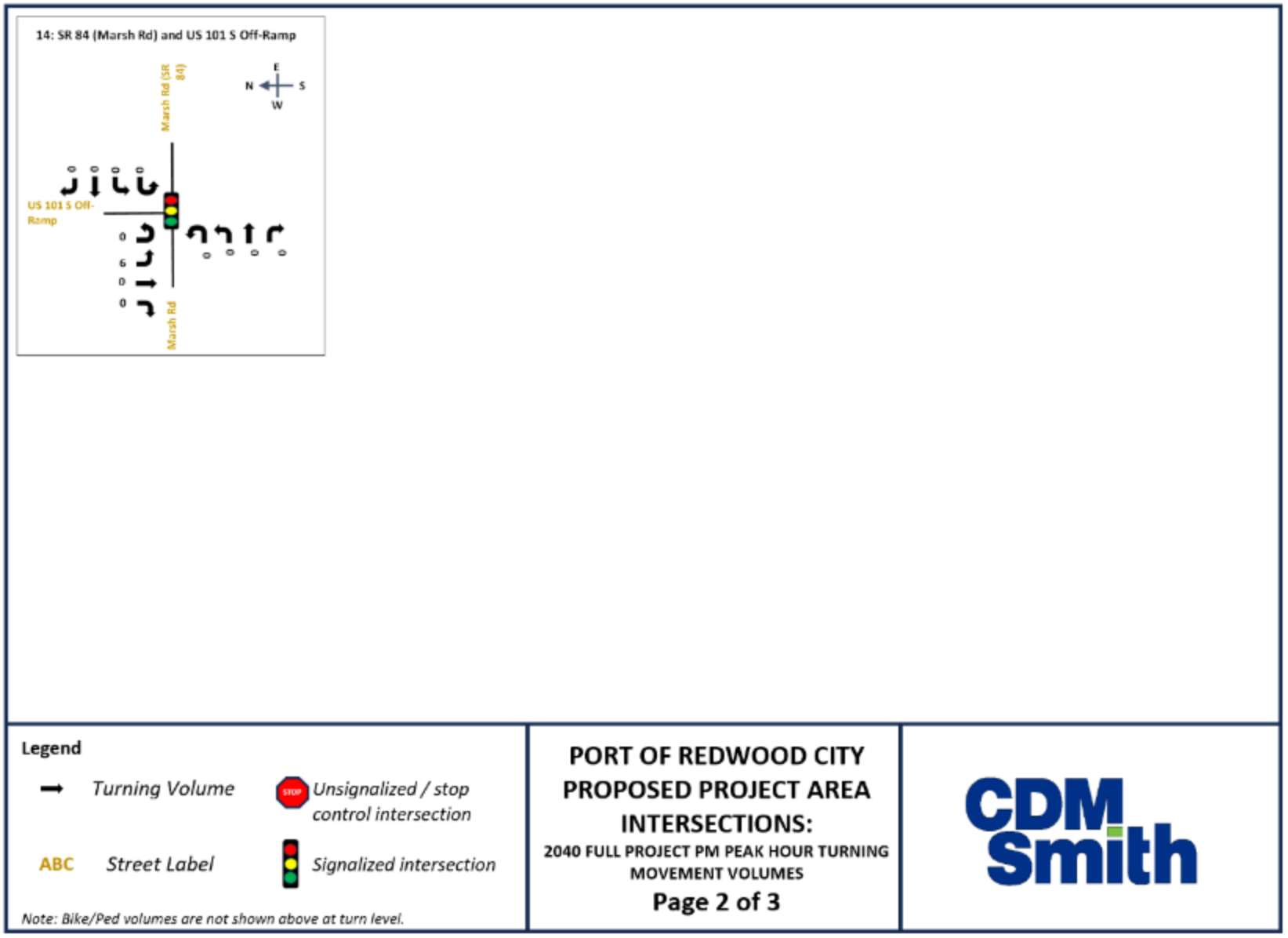


Figure A6.8 2040 Full Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

Attachment 7 – Background plus Project Traffic Volume Diagrams

Attachment 7 has diagrams showing a.m. and p.m. peak hour turning volumes including background plus project traffic volumes for both the ferry terminal component and the full project at project area intersections under existing (2023) and cumulative (2040) conditions that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

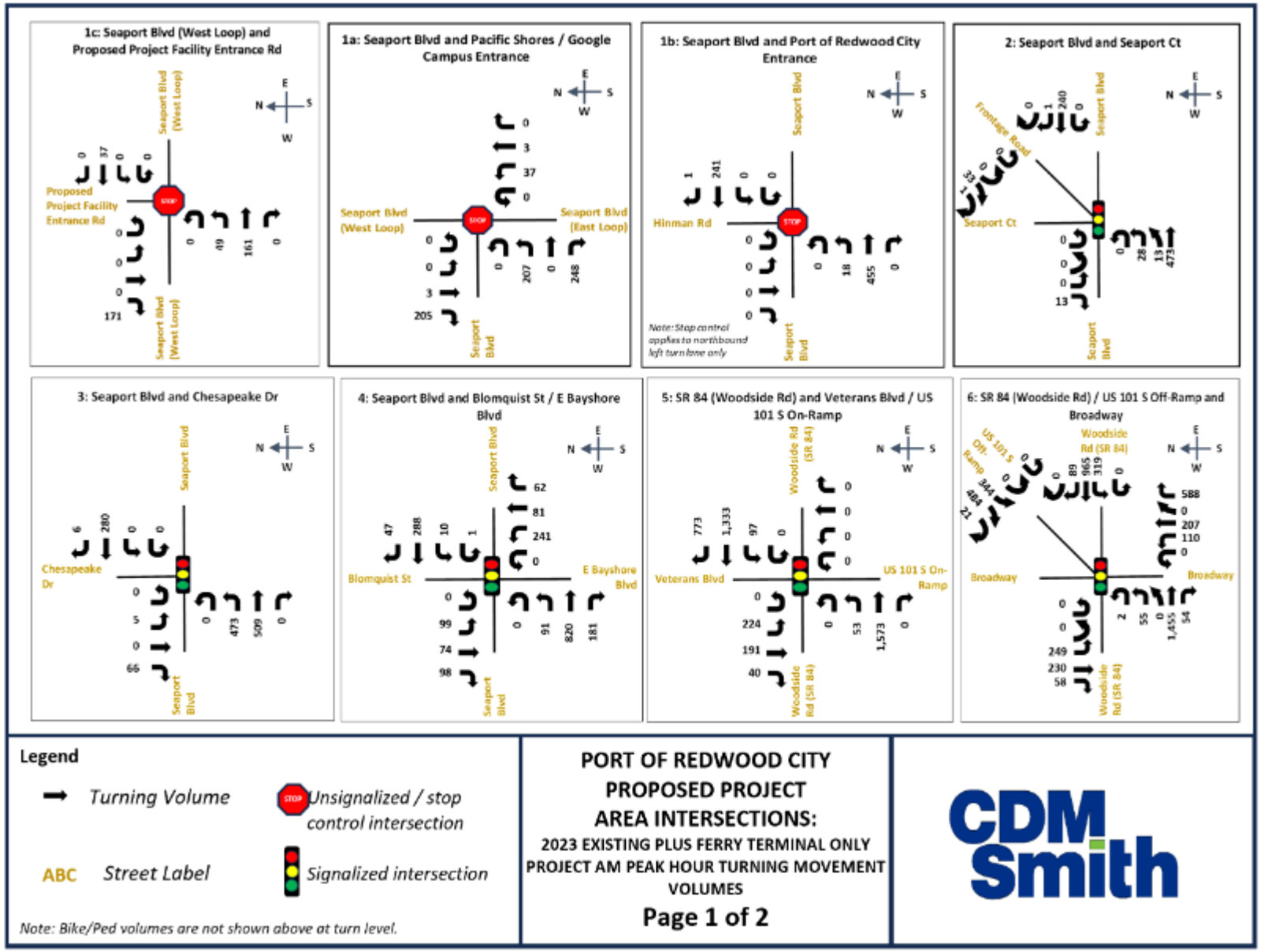


Figure A7.1 Existing (2023) plus Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections

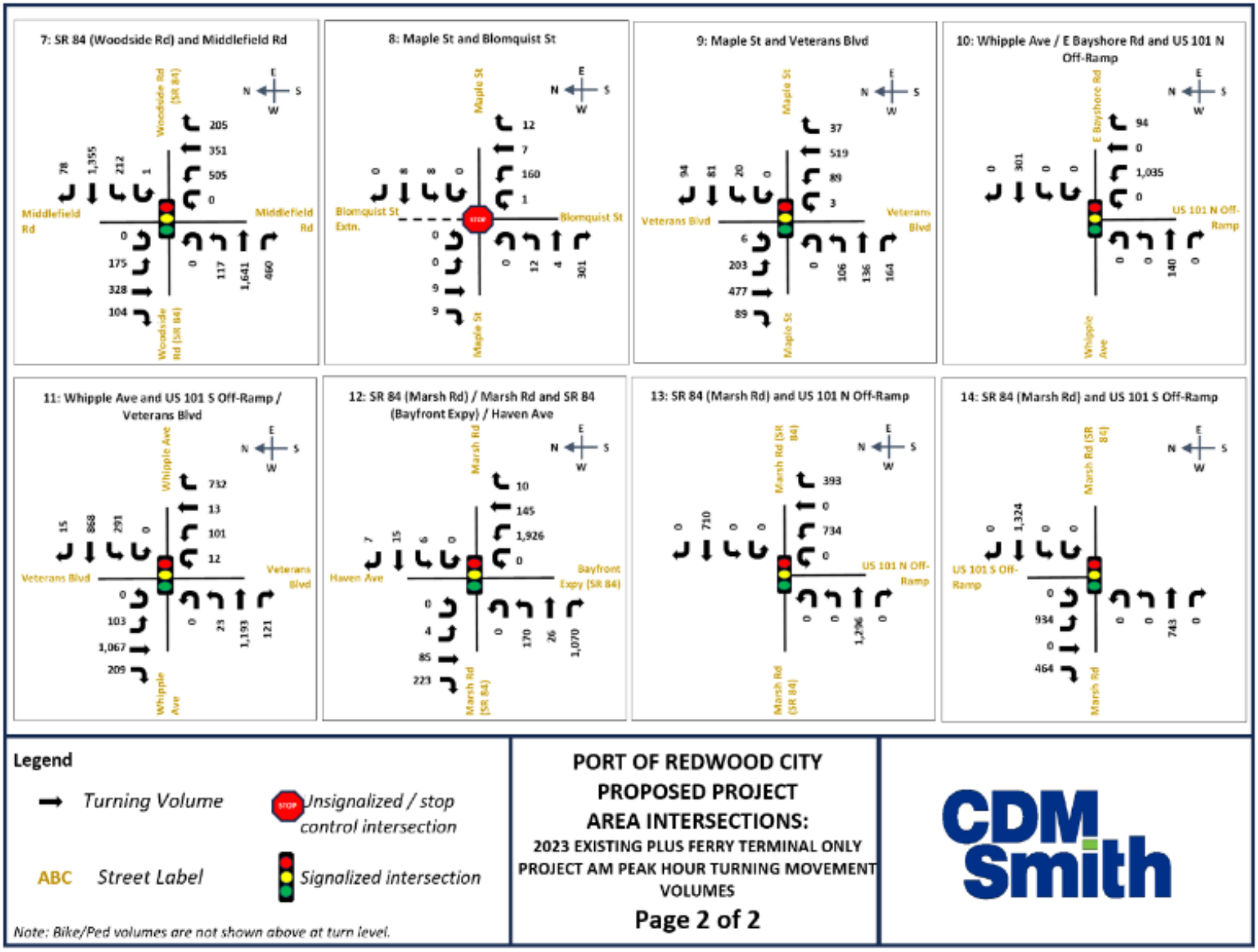


Figure A7.1 Existing (2023) plus Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

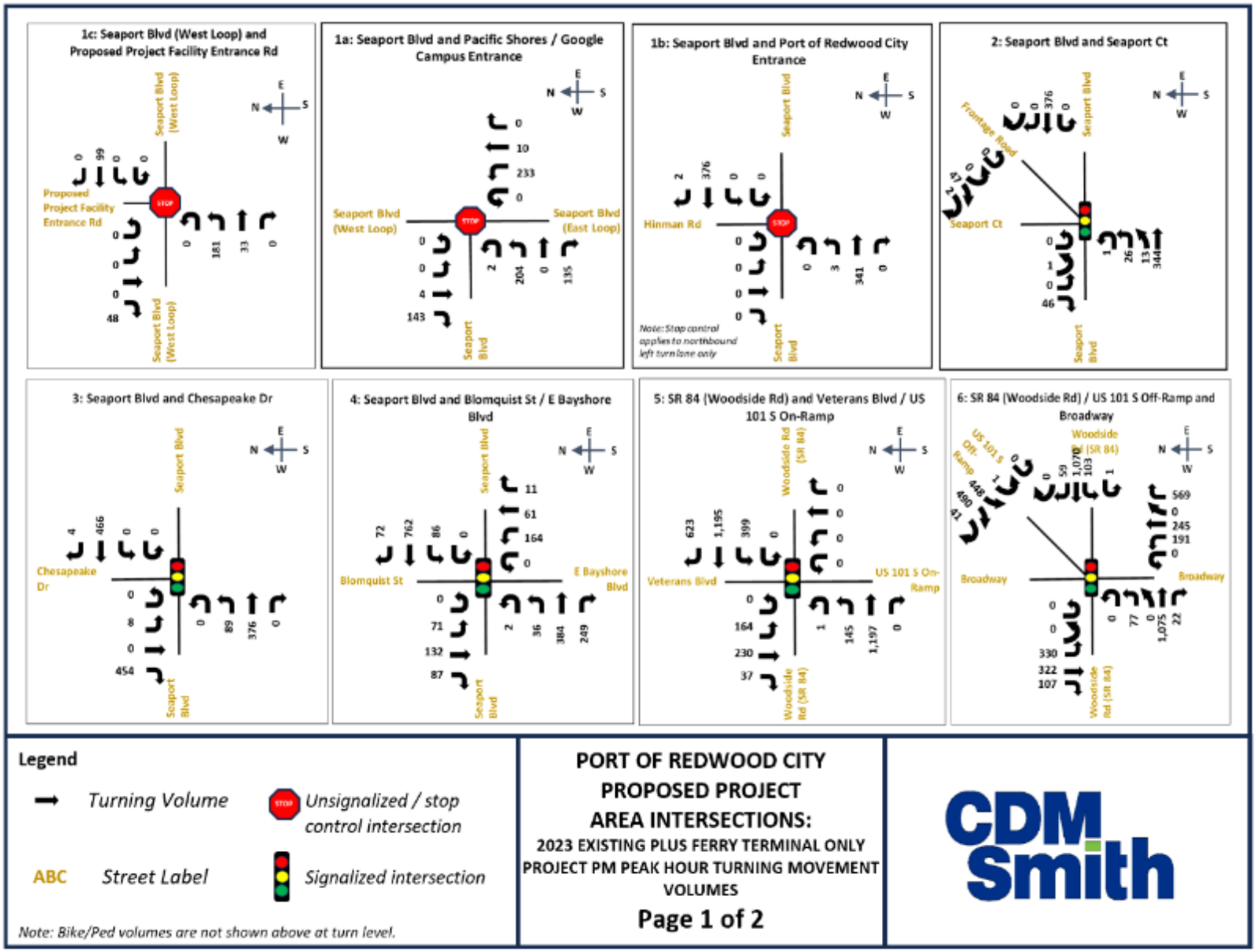


Figure A7.2 Existing (2023) plus Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections

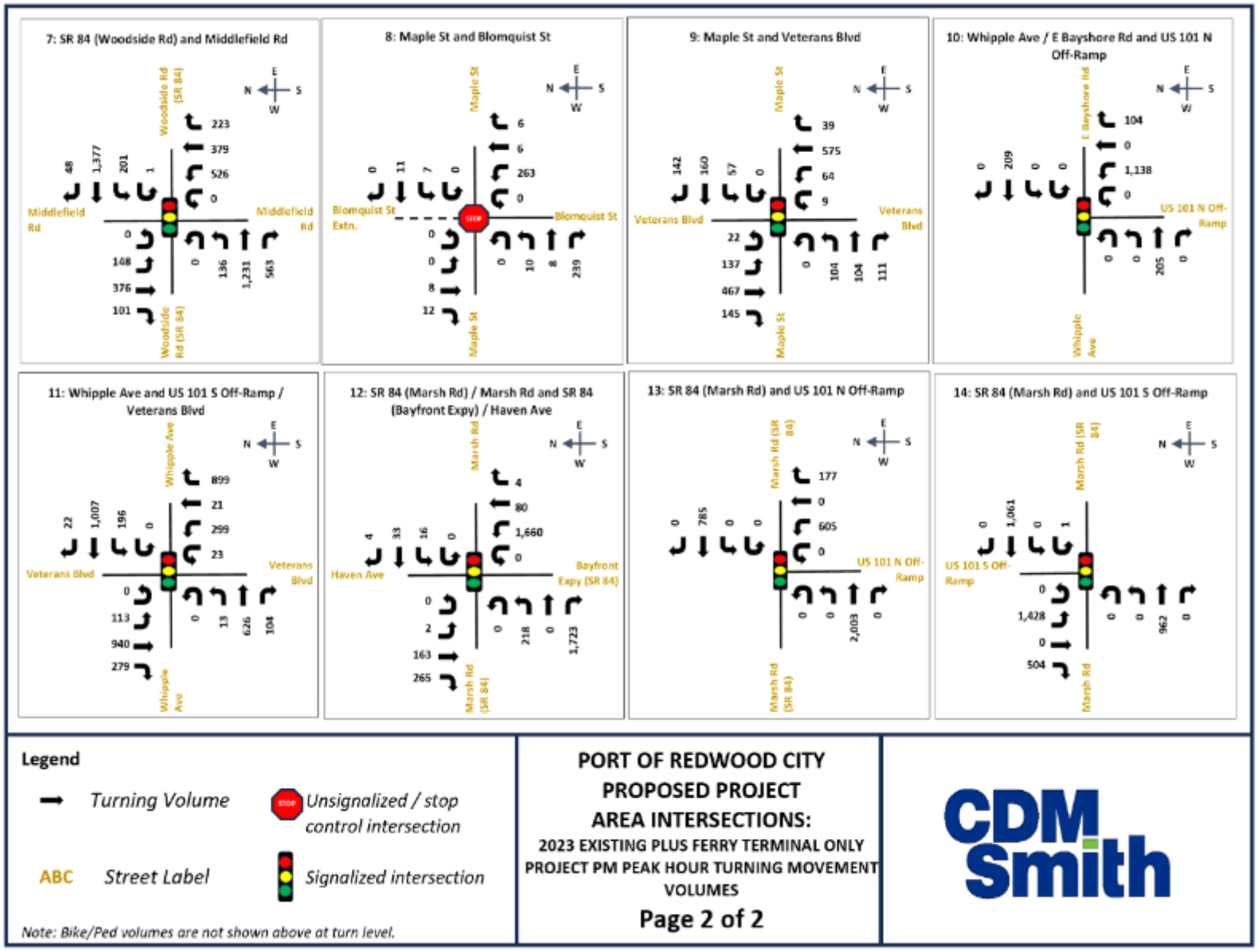


Figure A7.2 Existing (2023) plus Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

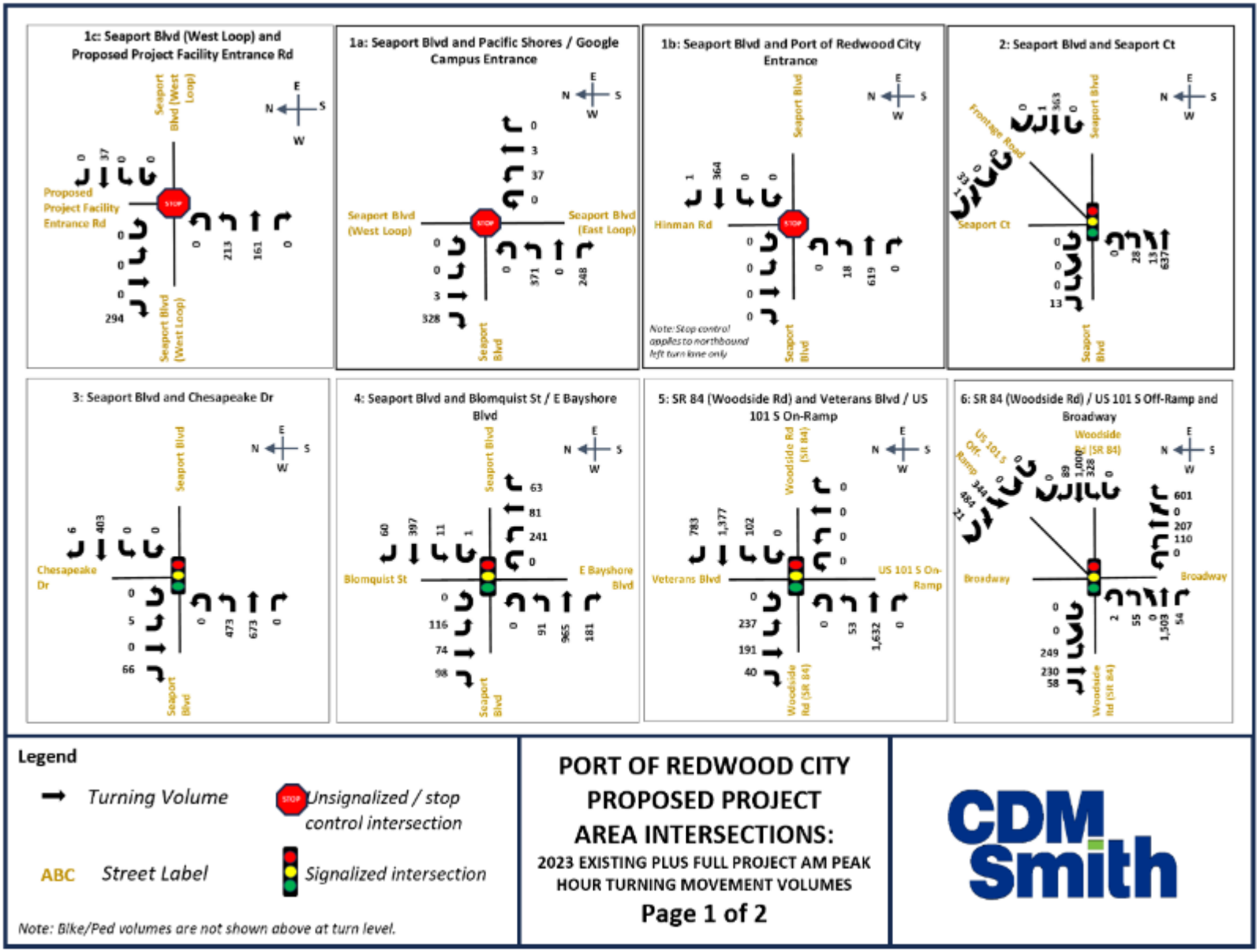


Figure A7.3 Existing (2023) plus Full Project AM Peak Hour Turning Volumes at Project Area Intersections

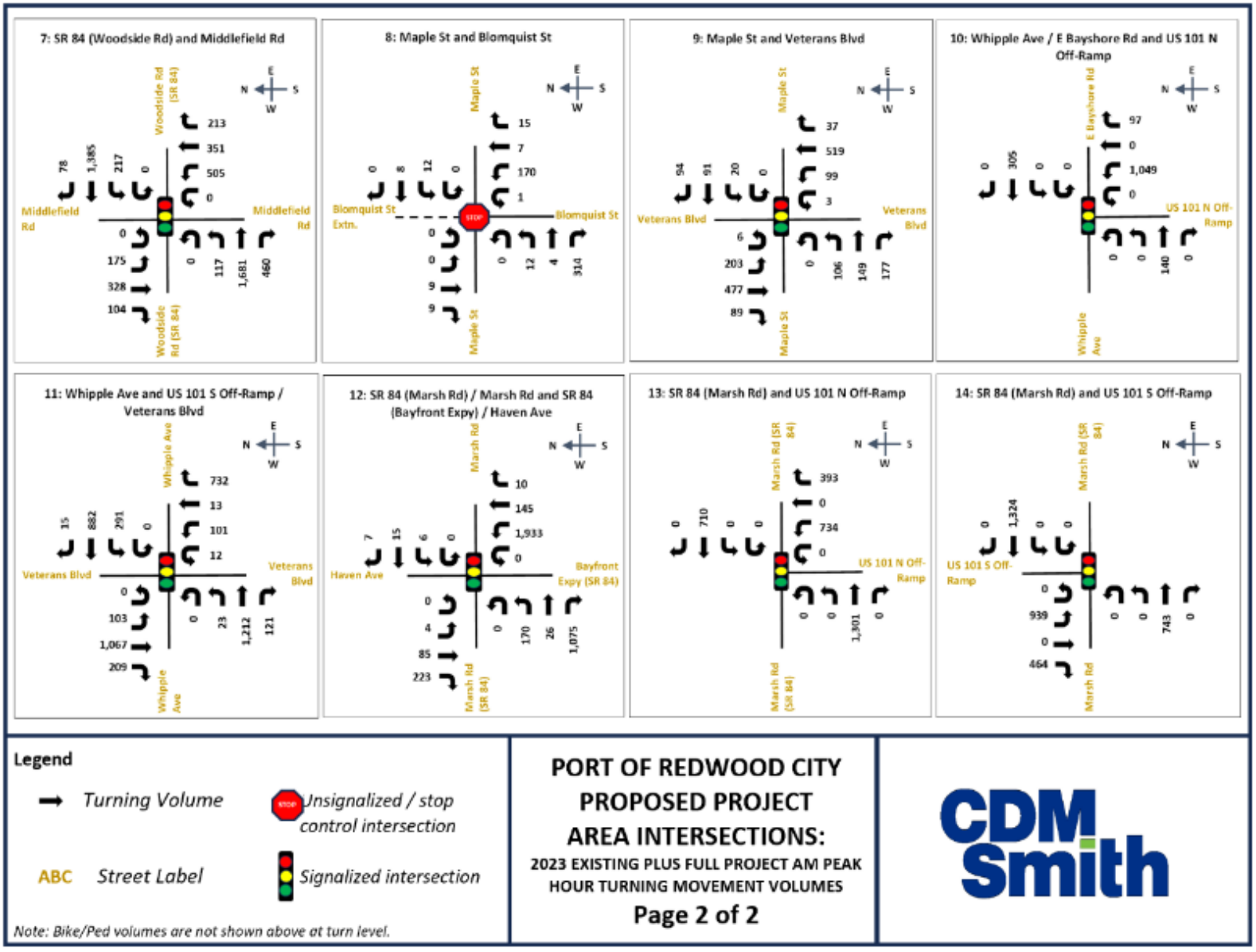


Figure A7.3 Existing (2023) plus Full Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

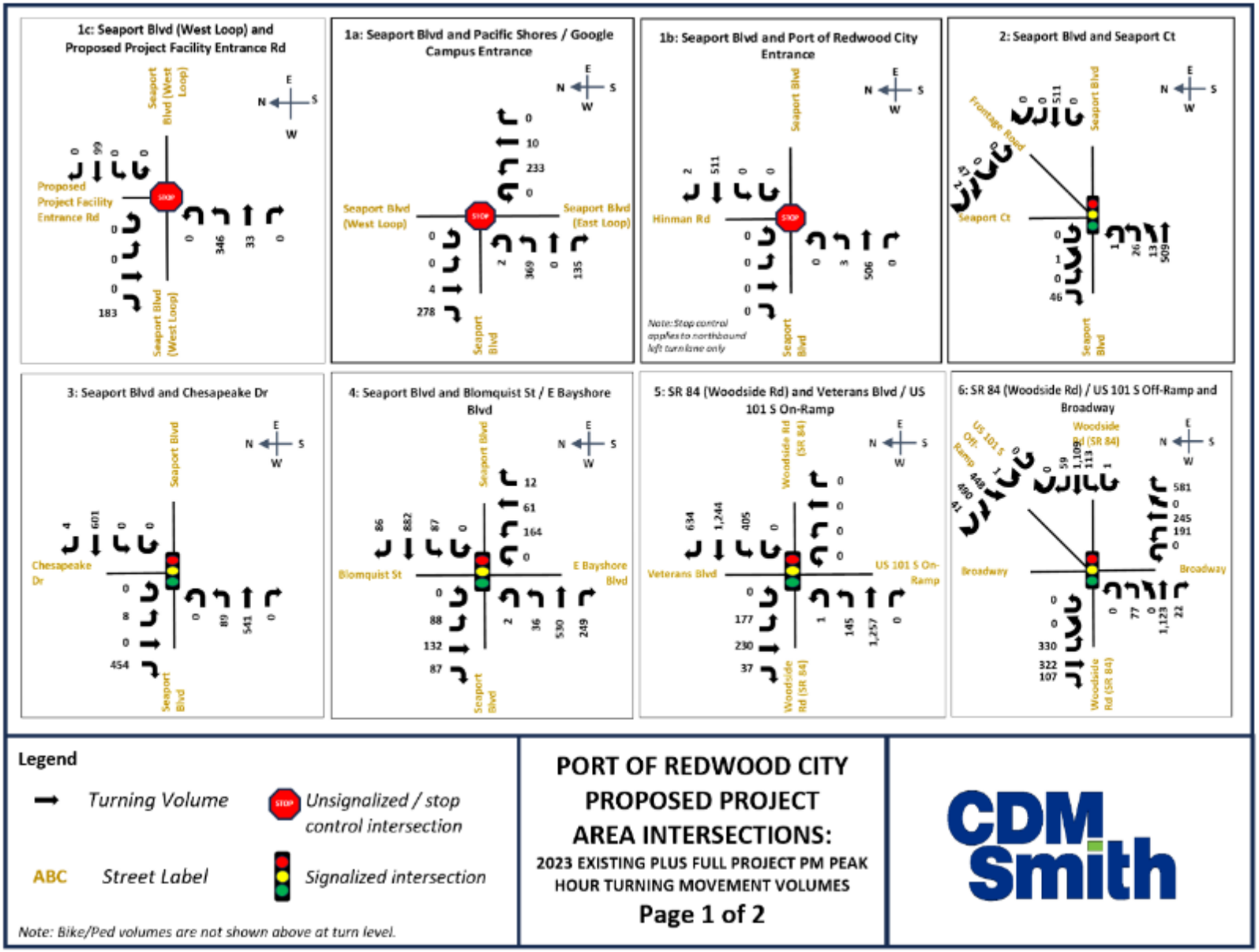


Figure A7.4 Existing (2023) plus Full Project PM Peak Hour Turning Volumes at Project Area Intersections

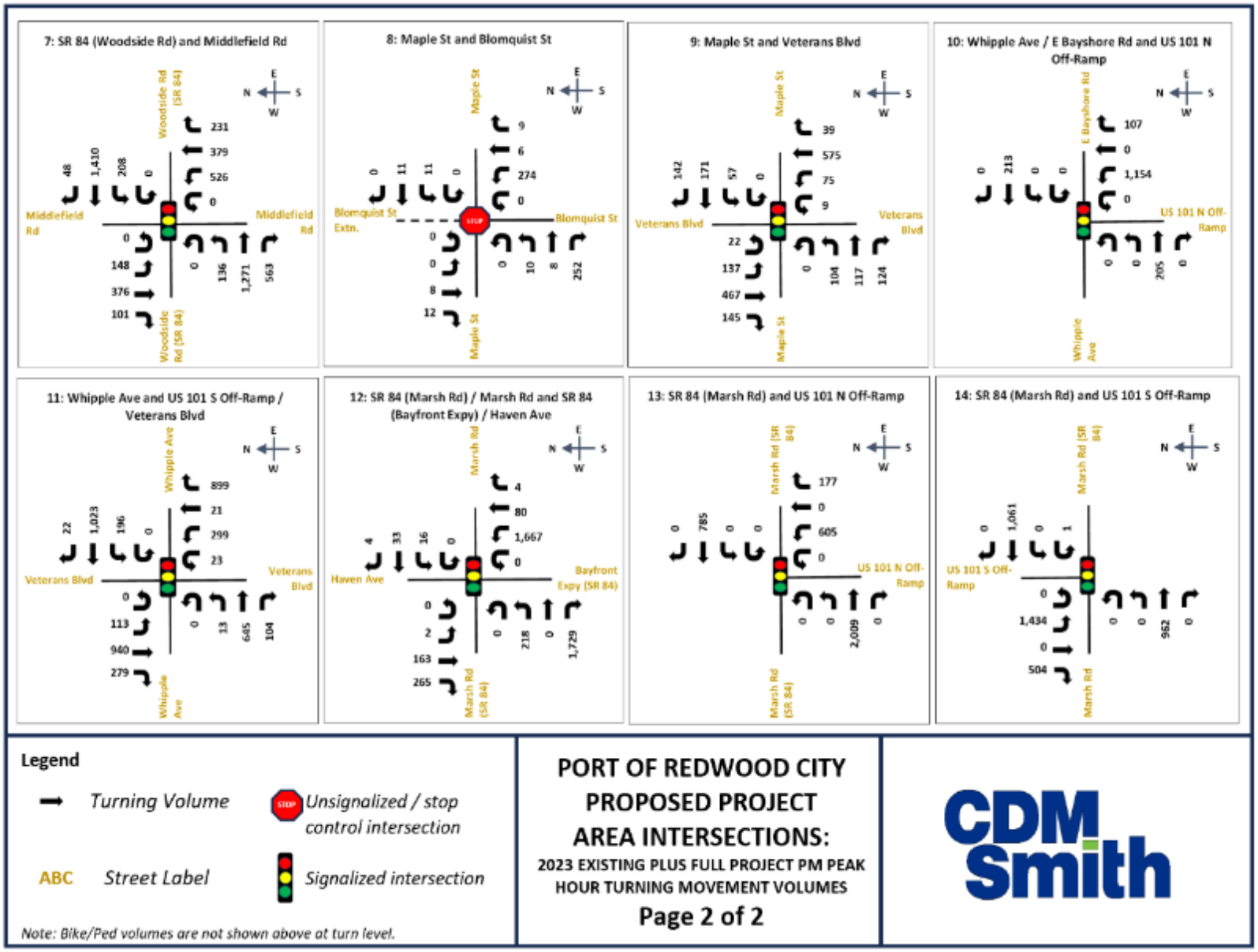


Figure A7.4 Existing (2023) plus Full Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

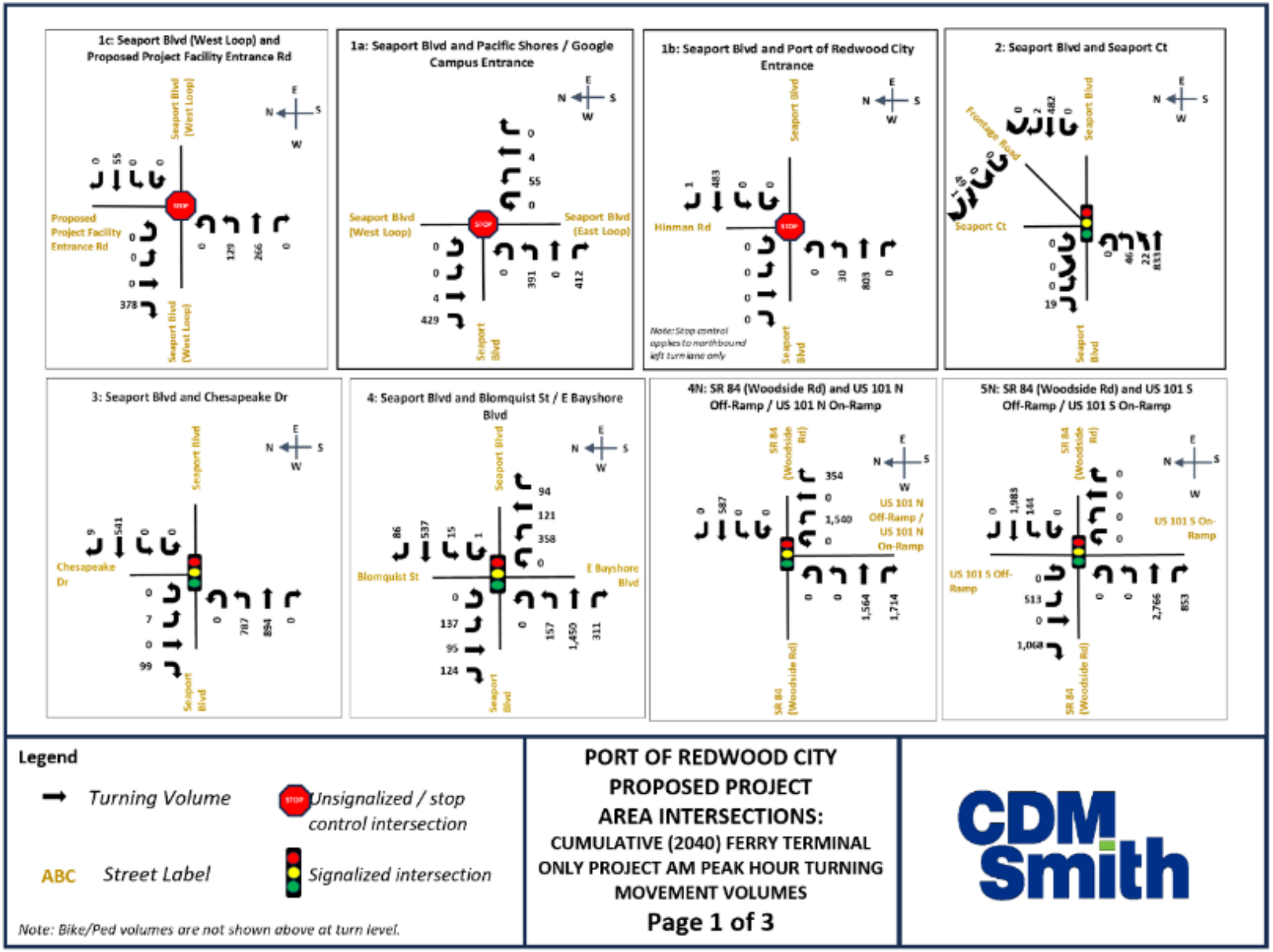


Figure A7.5 Cumulative (2040) Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections

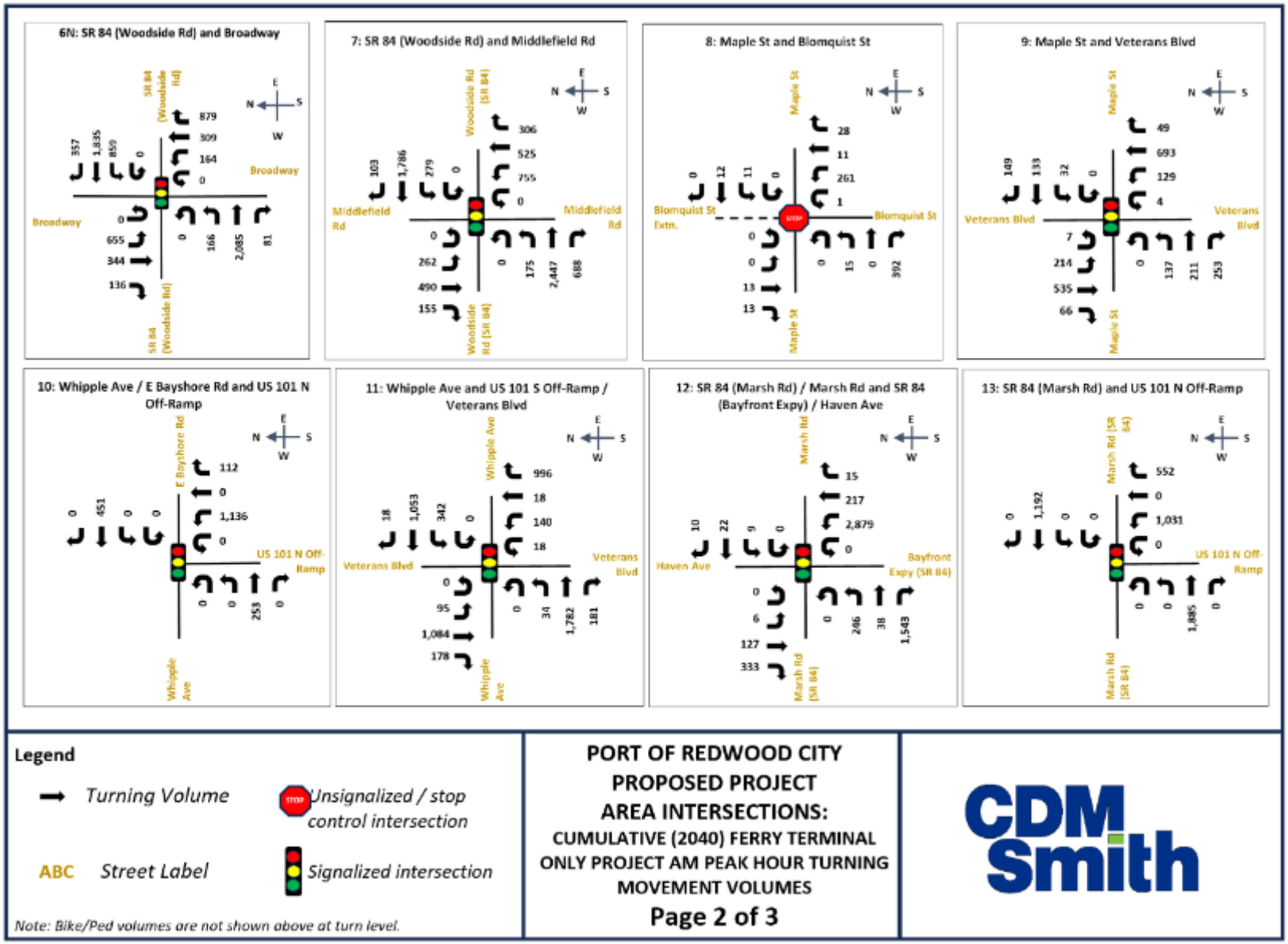


Figure A7.5 Cumulative (2040) Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

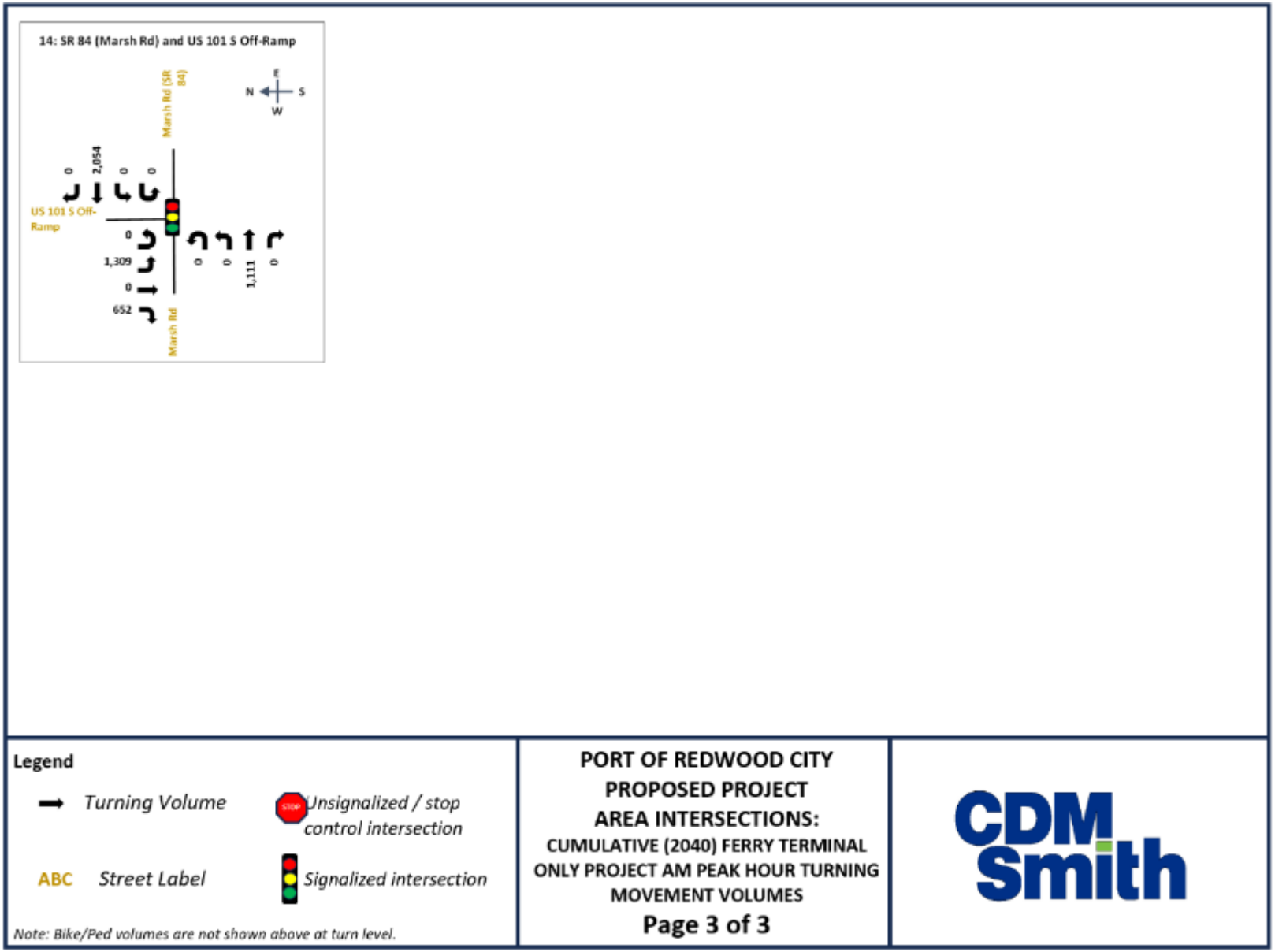


Figure A7.5 Cumulative (2040) Ferry Terminal Component AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

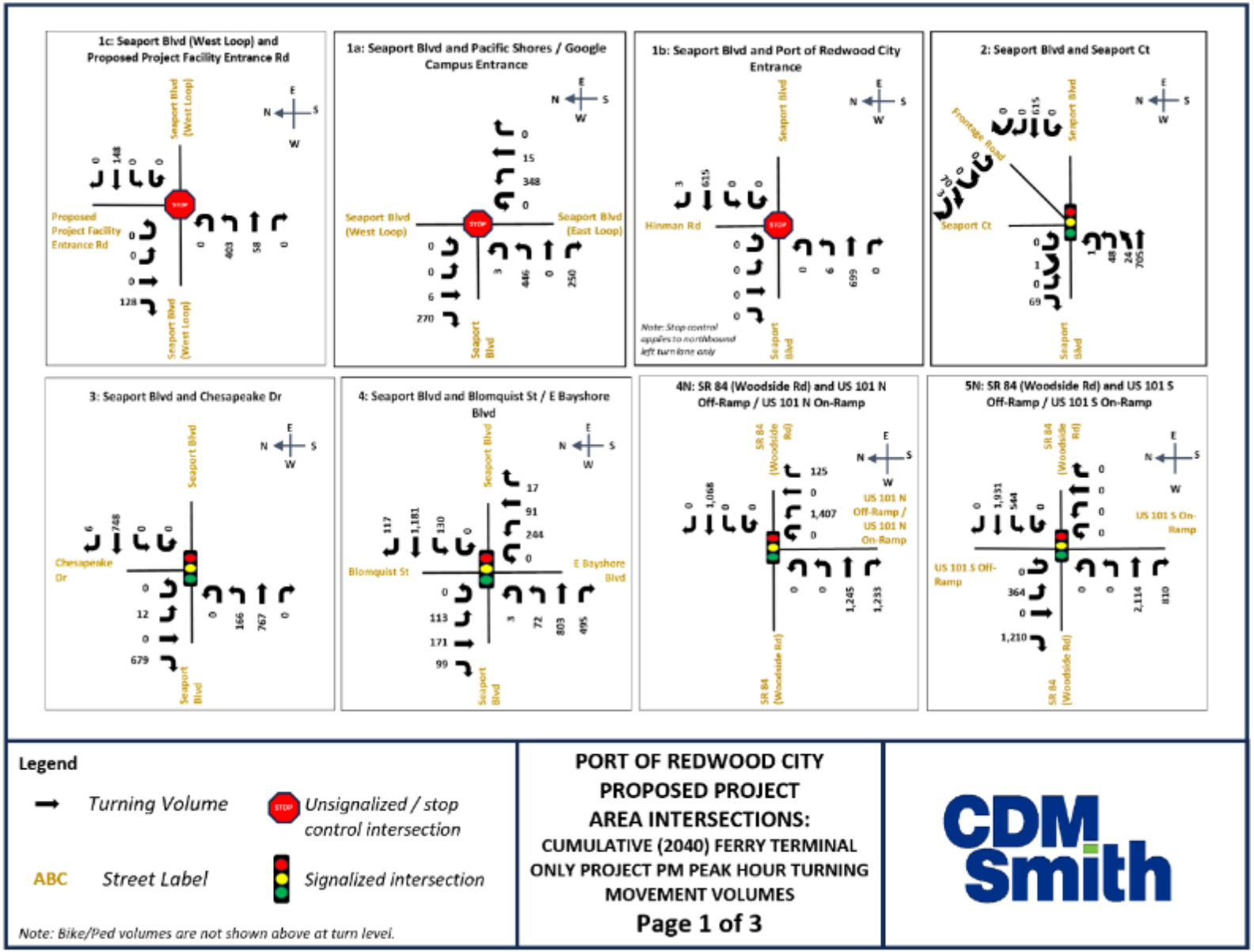


Figure A7.6 Cumulative (2040) Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections

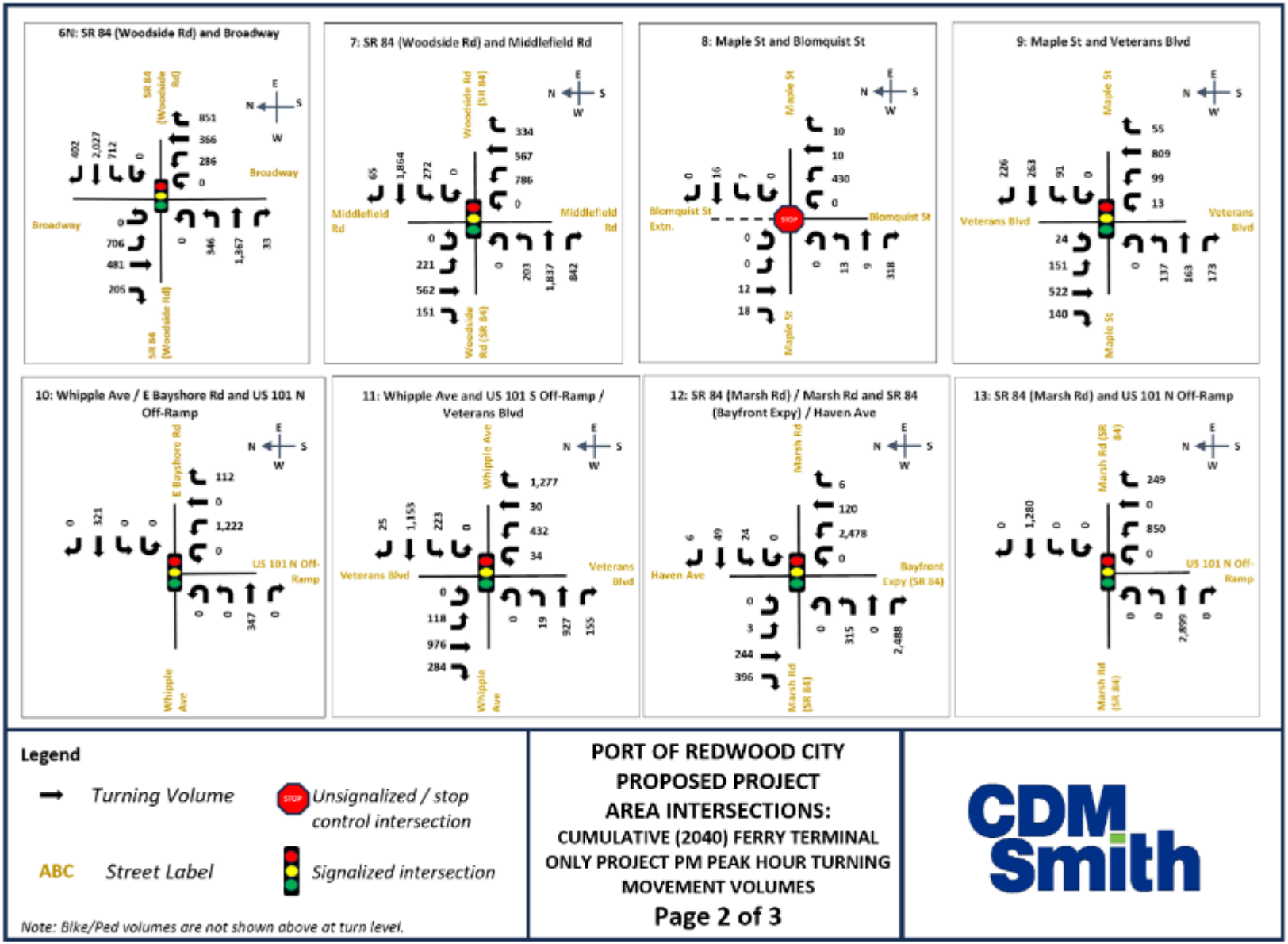


Figure A7.6 Cumulative (2040) Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

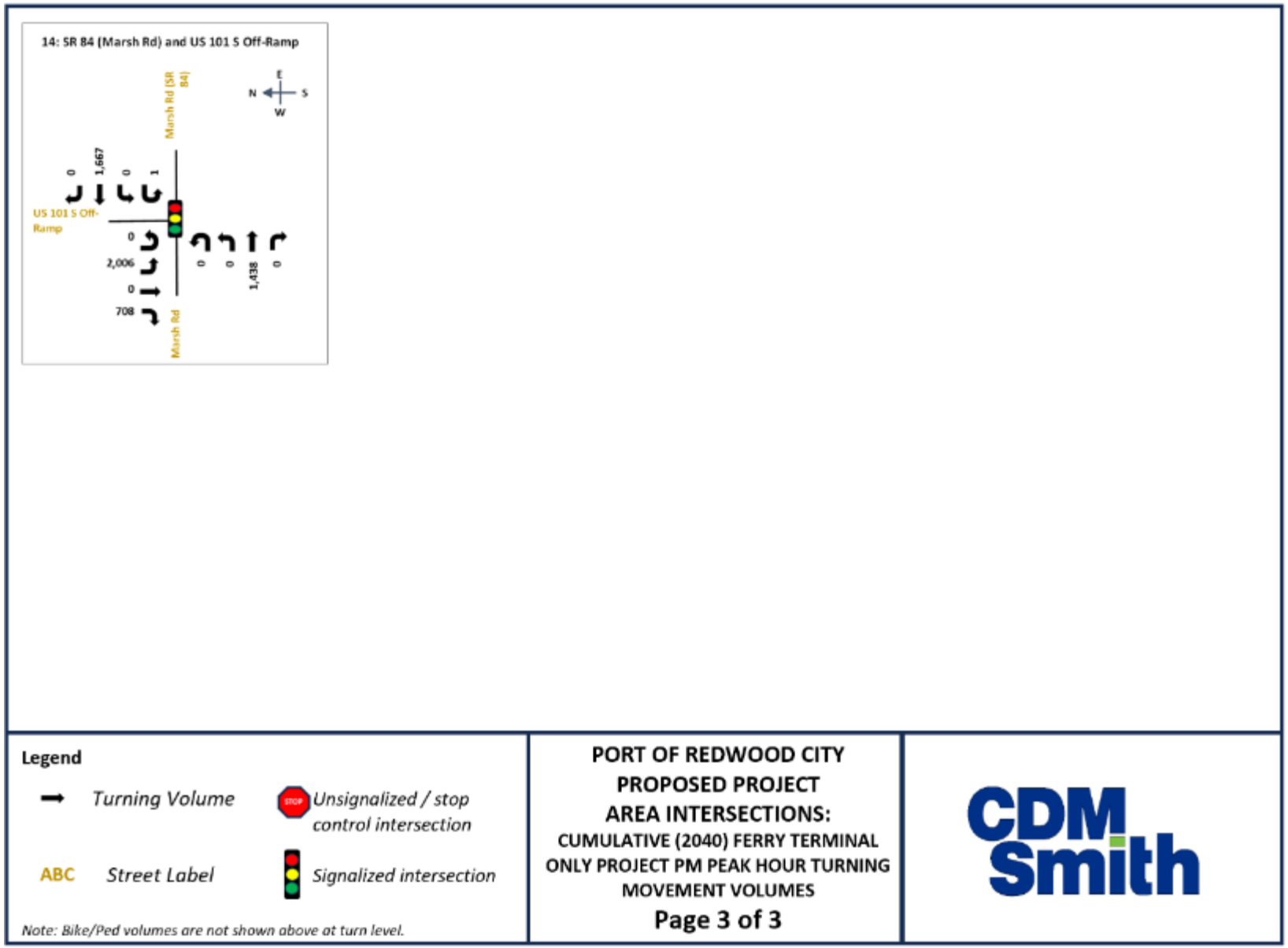


Figure A7.6 Cumulative (2040) Ferry Terminal Component PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

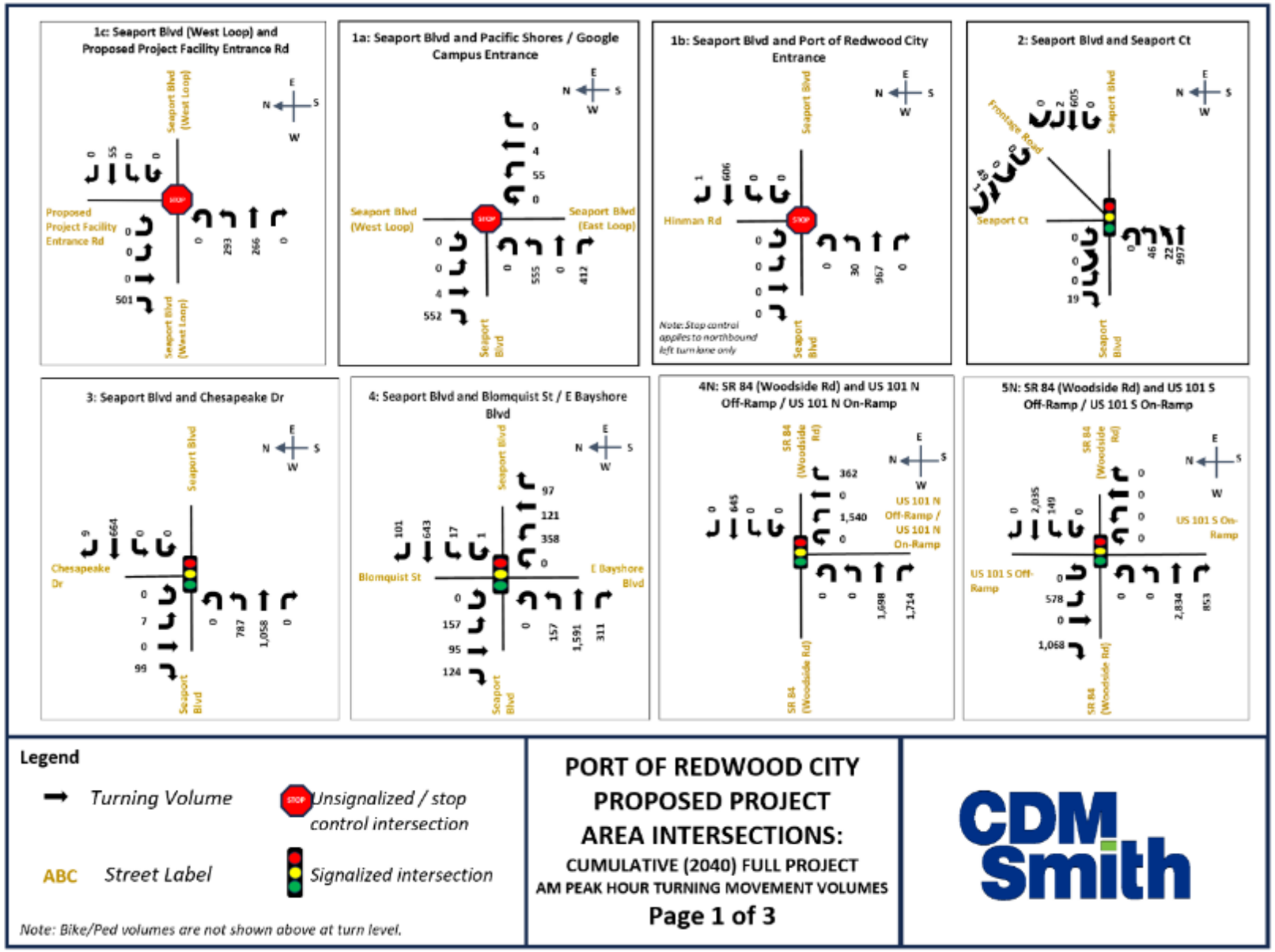


Figure A7.7 Cumulative (2040) Full Project AM Peak Hour Turning Volumes at Project Area Intersections

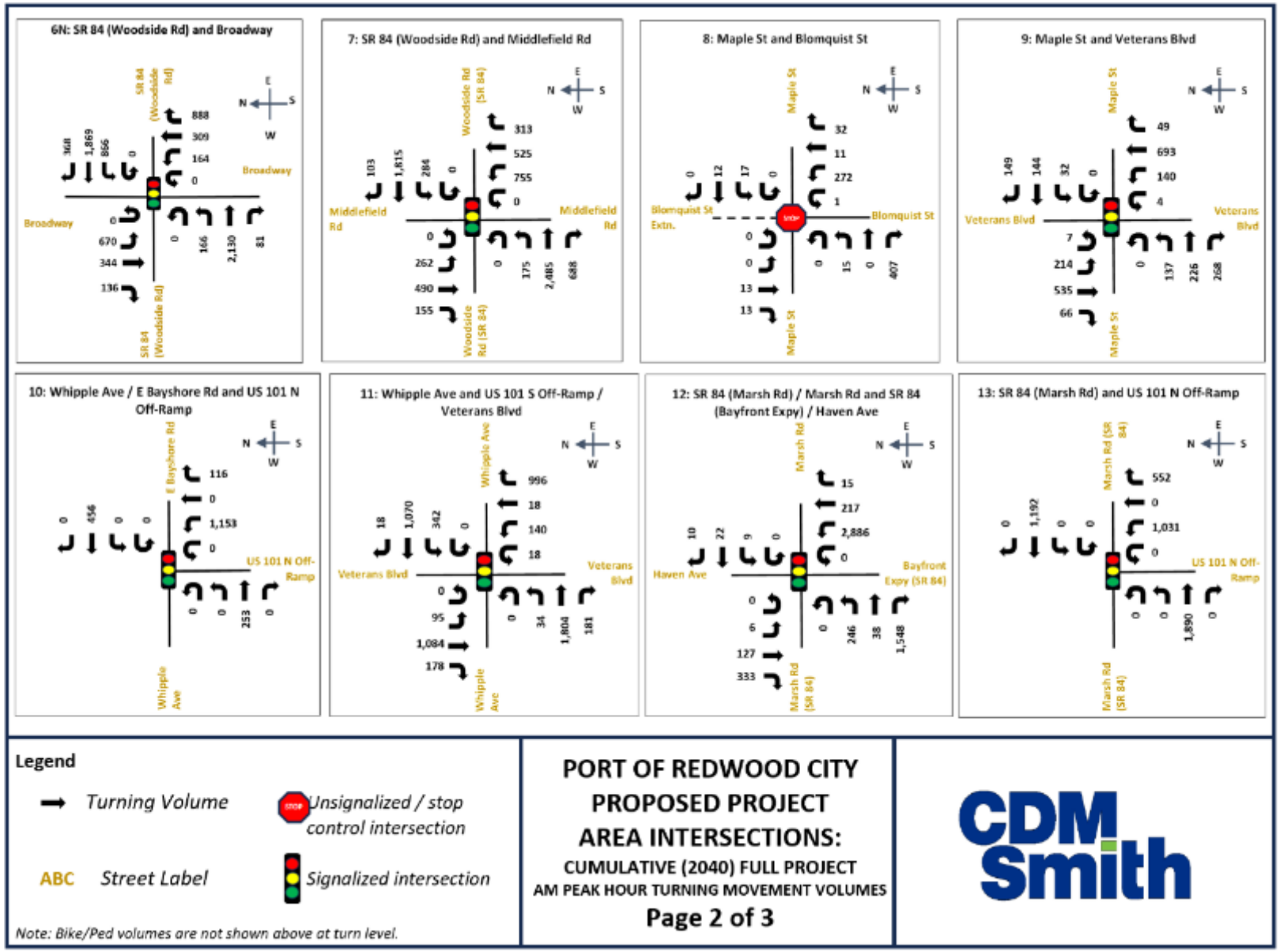


Figure A7.7 Cumulative (2040) Full Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)



Figure A7.7 Cumulative (2040) Full Project AM Peak Hour Turning Volumes at Project Area Intersections (Continued)

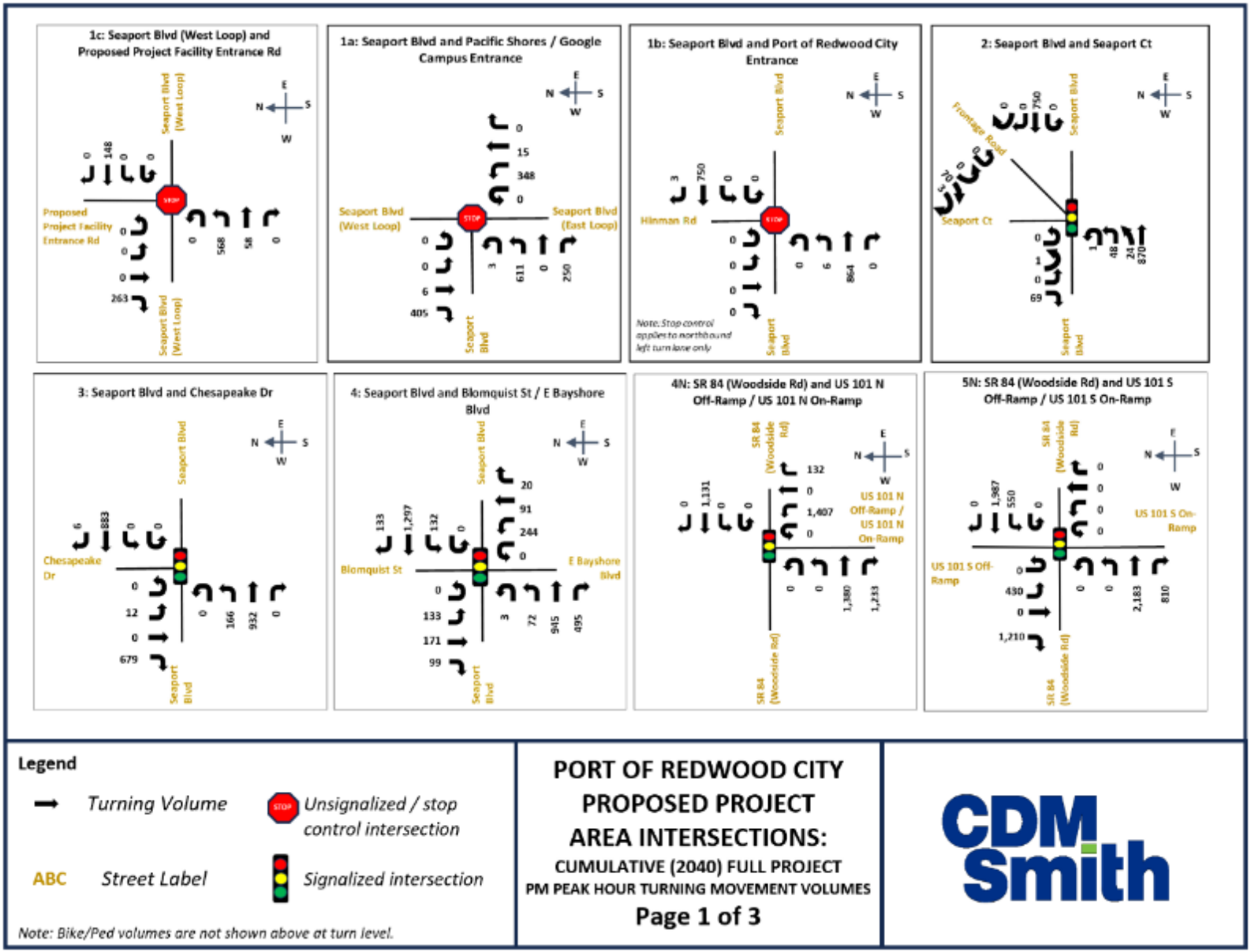


Figure A7.8 Cumulative (2040) Full Project PM Peak Hour Turning Volumes at Project Area Intersections

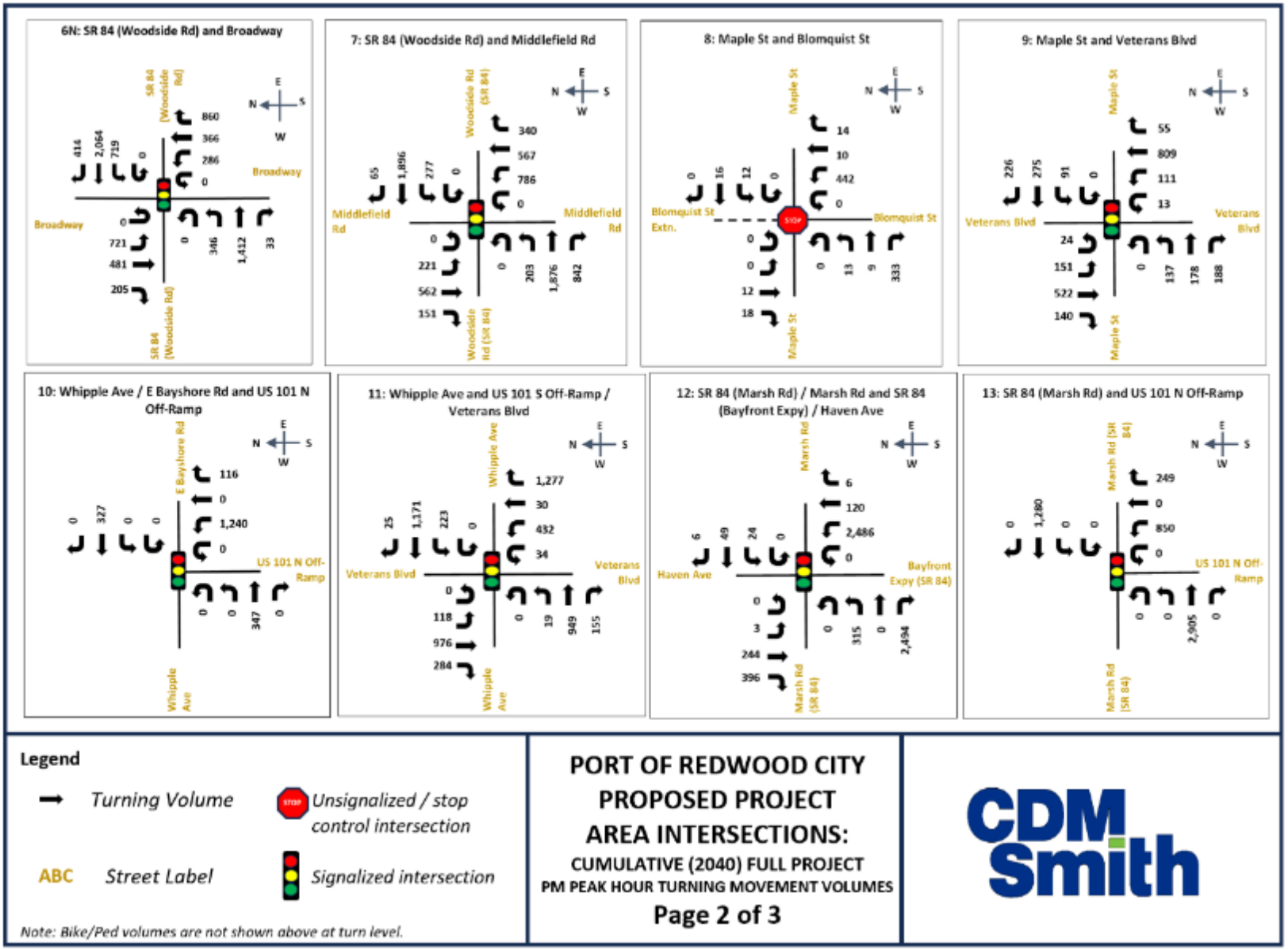


Figure A7.8 Cumulative (2040) Full Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

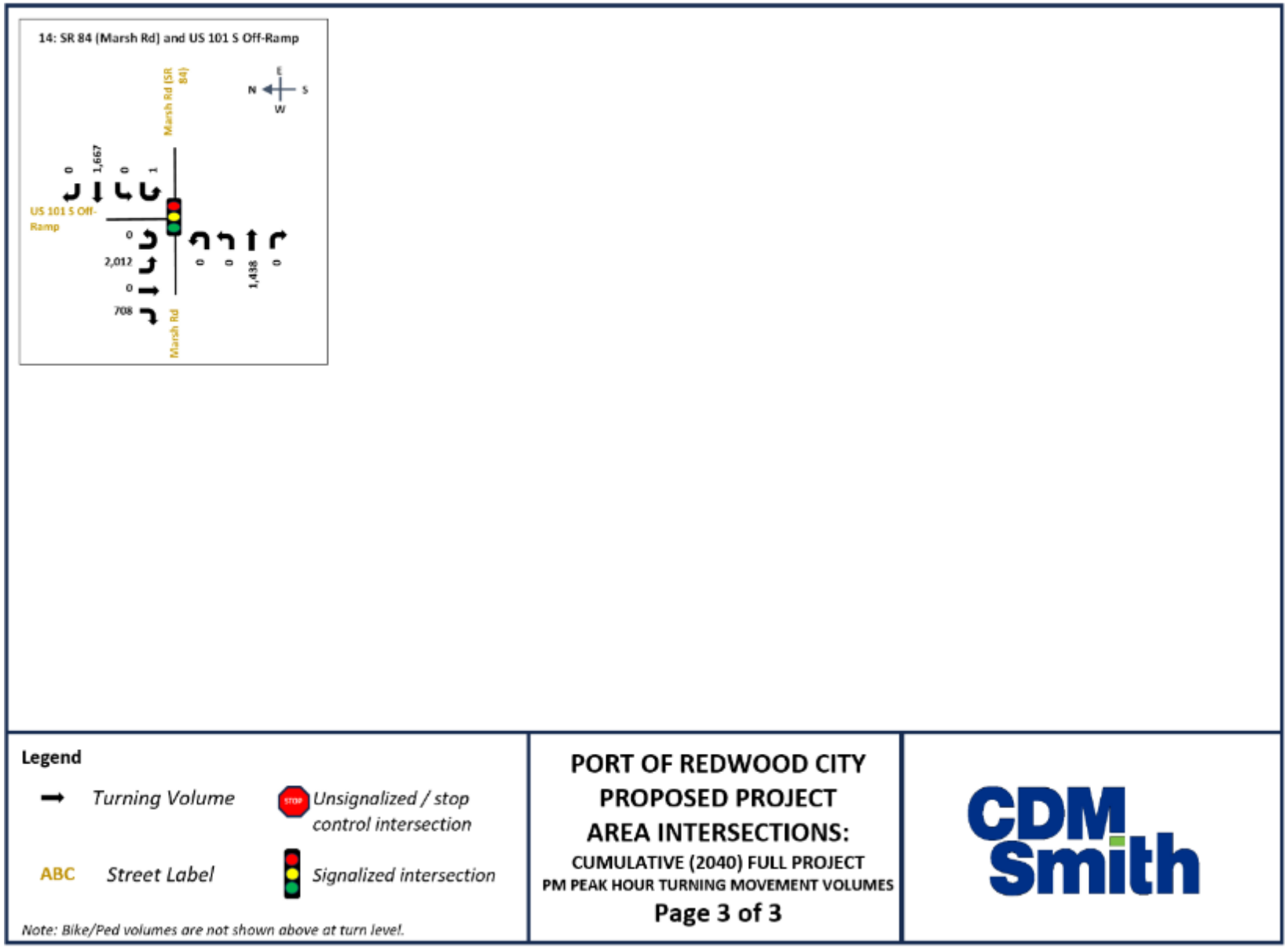


Figure A7.8 Cumulative (2040) Full Project PM Peak Hour Turning Volumes at Project Area Intersections (Continued)

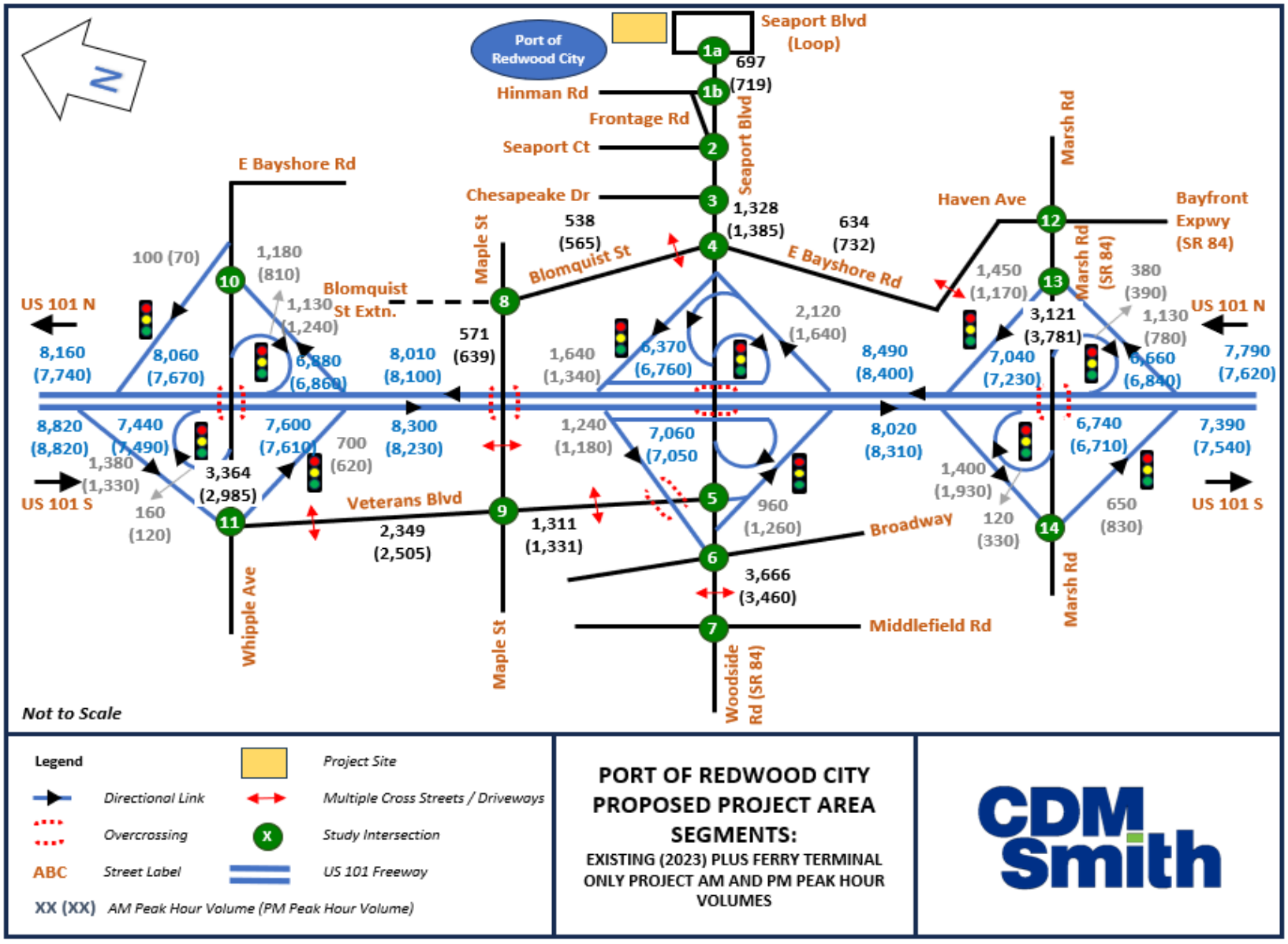


Figure A7.9 Existing (2023) plus Ferry Terminal Component AM and PM Peak Hour Volumes on Project Area Segments

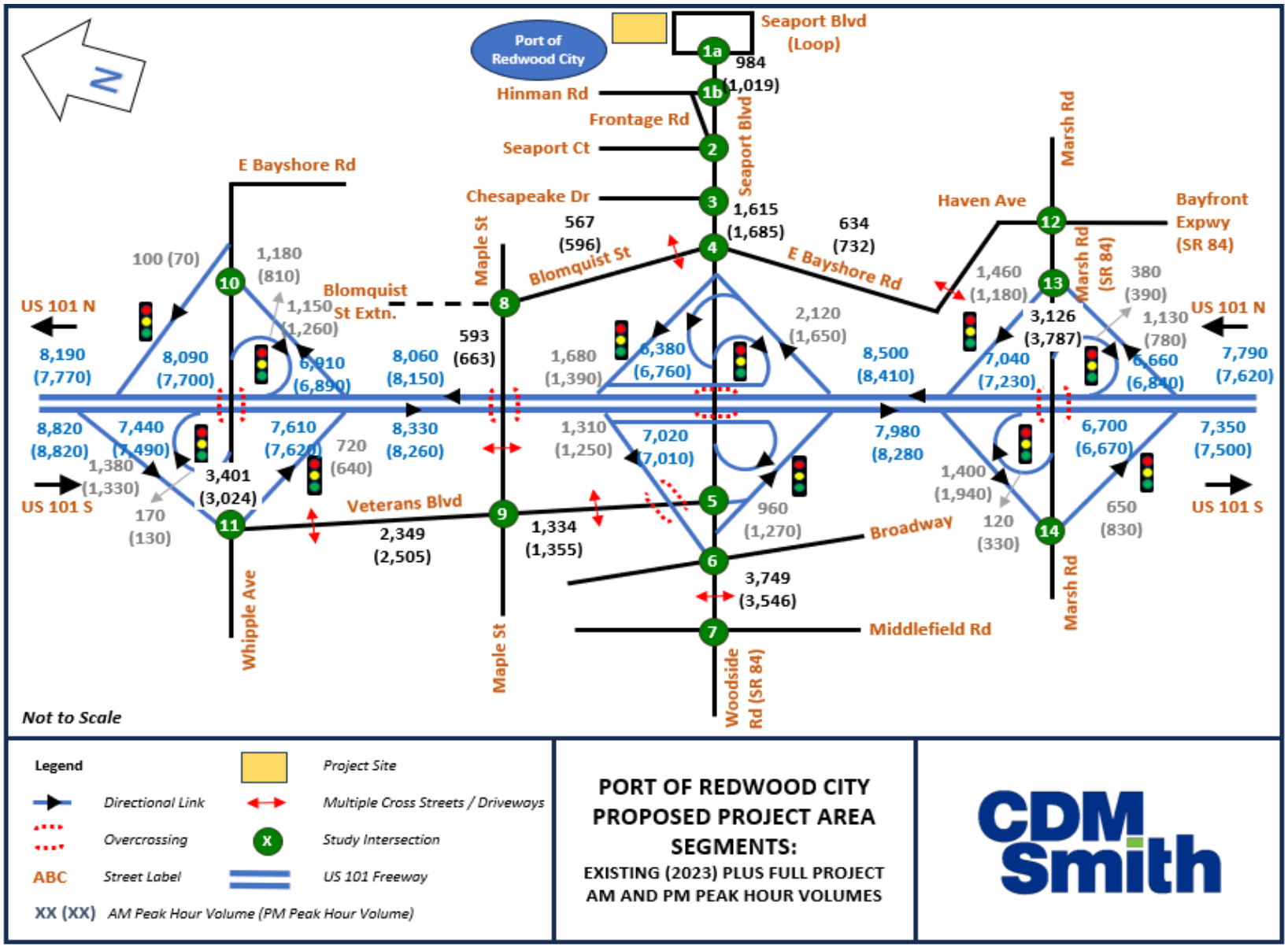


Figure A7.10 Existing (2023) plus Full Project AM and PM Peak Hour Volumes on Project Area Segments

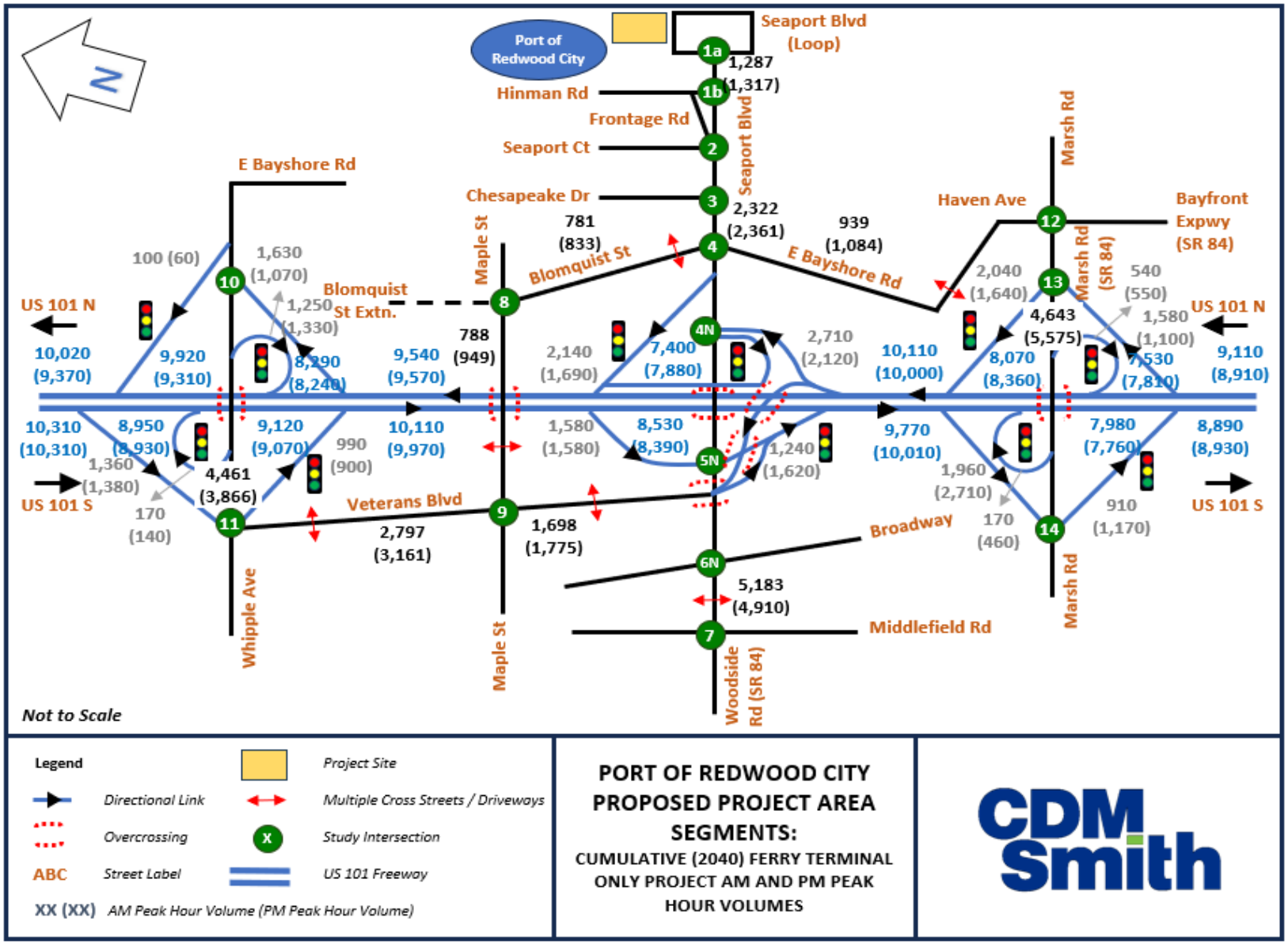


Figure A7.11 Cumulative (2040) Ferry Terminal Component AM and PM Peak Hour Volumes on Project Area Segments

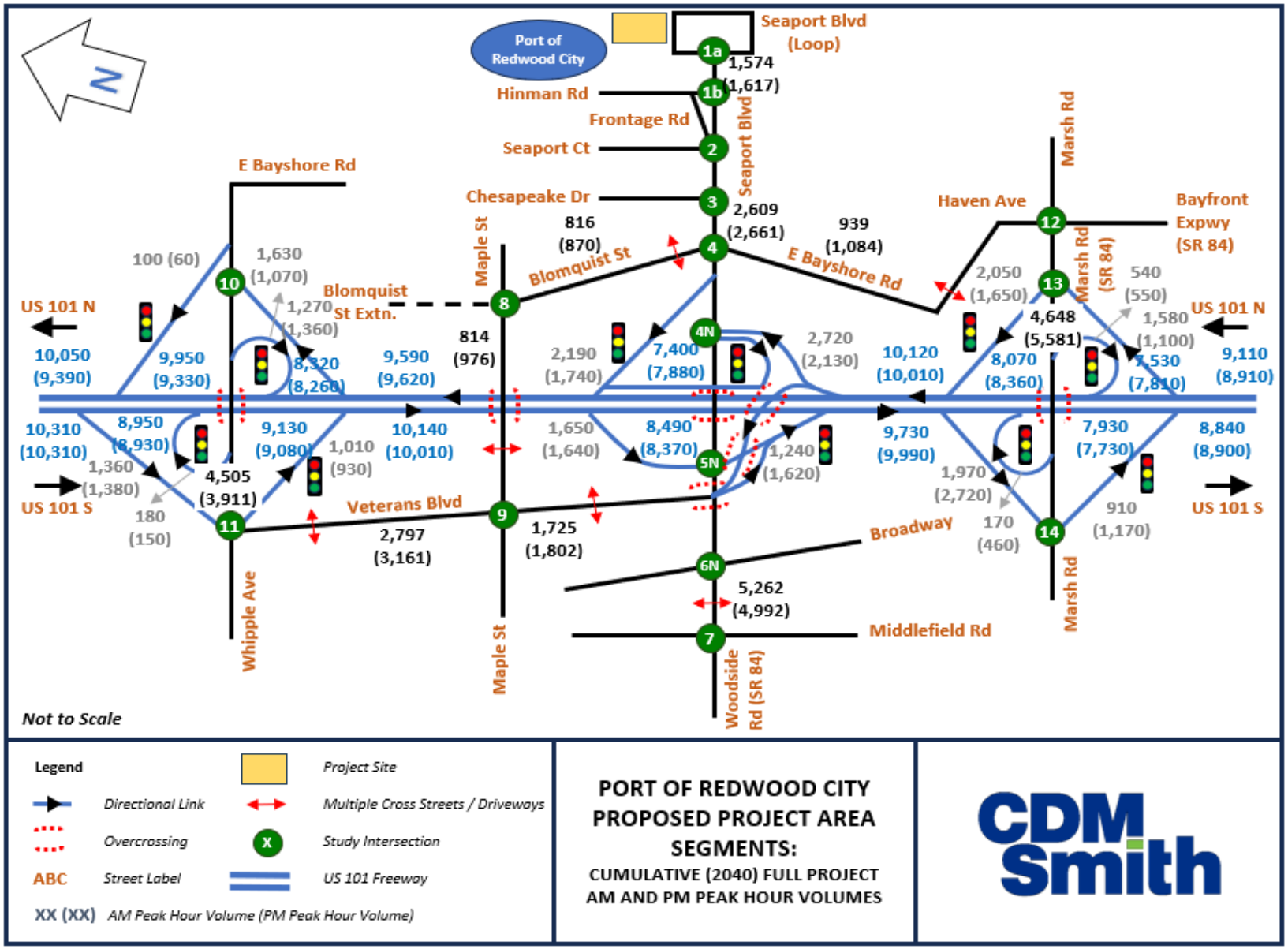


Figure A7.12 Cumulative (2040) Full Project AM and PM Peak Hour Volumes on Project Area Segments

Attachment 8 – Signal Timing Data

Attachment 8 provides signal timing data and diagrams that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION Seaport Blvd/Seaport Ct

CONTROLLER NUMBER 11-03 ENTERED BY: PD DATE 9/15/20

BOOT _____ VER. _____ MAIN _____ VER. _____ HELP _____ VER _____ CONFIG _____ _____

1. CONFIGURATION SUBMENU

1. CONTROLLER SEQUENCE

PRIORITY	1	2	3	4	5	6	7	8	9	10	11	12
RING 1	1	2	3	4								
RING 2	5	6	7	8								
CG	^											

PHASE NUMBER

	1	2	3	4	5	6	7	8	9	10	11	12
PHASES IN USE	X	X	X	X		X						
EXCLUSIVE PED												

3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP		LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP	
CHANNEL	PH/OLAP	PED	CHANNEL	PH/OLAP	PED
1	1		9	2	X
2	2		10	4	X
3	3		11	6	X
4	4		12	8	X
5	5		13	13	
6	6		14	14	
7	7		15	15	
8	8		16	16	

4. SDLC OPTIONS/ENABLES (BIU Number)

	1	2	3	4	5	6	7	8
TERM & FACIL								
DETECTOR RACK								
TYPE 2 RUNS AS TYPE 1								
MMU DISABLE								x
DIAGNOSTIC ENABLE (TEST FIXTURE)								
PEER TO PEER ENABLE								

PEER TO PEER ADDRESS:

1)		2)		3)		4)		5)	
6)		7)		8)		9)		10)	

5. PORT2 CONFIGURATION

PORT2 PROTOCOL	
PORT2 ENABLE	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
DATA RATE (BPS)	
DATA, PARITY, STOP	

6. PORT3 CONFIGURATION

PORT 3 PROTOCOL	NTCIP
PORT 3 ENABLE	YES
TELEMETRY ADDRESS	3
SYSTEM DETECTOR 9-16 ADDRESS	
TELEMETRY RESPONSE DELAY	800
AB3418 ADDRESS	1
AB3418 GROUP ADDRESS	0
AB3418 RESPONSE DELAY	16
AB3418 SINGLE FLAG ENABLE	NO
AB3418 DROP-OUT TIME	60
AB3418 TOD SF SELECT	
ADDITIONAL SCREEN(S)	
DUPLEX -- HALF OR FULL	FULL
MODEM DATA RATE (BPS)	9600
DATA, PARITY, STOP	8,N,1

7. ENABLE EVENT LOGS

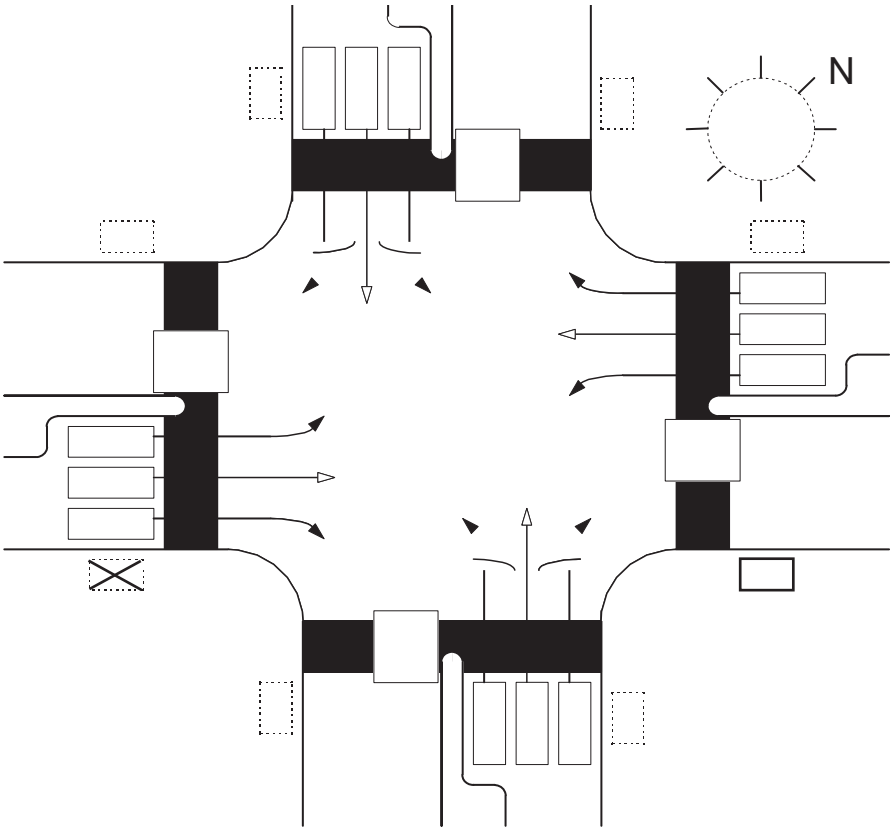
CRITICAL RFE'S (MMU/TE)	X
NON-CRITICAL RFE'S (DET/TEST)	X
DETECTOR ERRORS	X
COORDINATION ERRORS	X
MMU FLASH FAULTS	X
LOCAL FLASH FAULTS	X
PREEMPT	X
POWER ON/OFF	X
LOW BATTERY	X
SPARE	X
ALARM 1	X
ALARM 2	X
ALARM 3	X
ALARM 4	X
ALARM 5	X
ALARM 6	X
ALARM 7	X
ALARM 8	X
ALARM 9	X
ALARM 10	X
ALARM 11	X
ALARM 12	X
ALARM 13	X
ALARM 14	X
ALARM 15	X
ALARM 16	X

8. OPTIONS

SUPERVISOR ACCESS CODE	
DATA CHANGE ACCESS CODE	
KEY CLICK ENABLE	YES
BACKLIGHT ENABLE	YES

9. MMU PROGRAM
CAN SERVE WITH

1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															



2. CONTROLLER SUBMENU

1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GRN	9	10	10	10		9						
BIKE GRN	9	10	10	10		9						
CS MGRN												
WALK				7								
PED CLR				24								
VEH EXT	4	4	4	3		4						
VEH EXT 2												
MAX EXT												
MAX1	15	35	35	15		35						
MAX2	40	40	40	40		40						
MAX3												
DET MAX												
YELLOW	4.2	4.2	4.2	4.0		4.2						
RED CLR	1	1	1	1		1						
RED RVT	2	2	2	2		2						
ACT B4												
SEC/ACT												
MAX INI	30	30	30	30		30						
TIME B4												
CARS WT												
TTREDUC												
MIN GAP												

2. PHASE OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9									X			
10										X		
11											X	
12												X

3. PED TIMING CARRYOVER

PHASE	CARRYOVER PHASE	PHASE	CARRYOVER PHASE
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. CONTROLLER RECALL DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
LOCKING MEMORY				X								
VEHICLE RECALL		X				X						
PED RECALL												
RECALL TO MAX												
SOFT RECALL												
DON'T REST HERE												
PED DARK N/CALL												

5. CONTROLLER OVERLAP DATA

OVERLAP A	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD	X	X	X			X						
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP B	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP C	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP D	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

PED OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

6. CONTROLLER START/FLASH DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
POWER START		X				X						
EXTERNAL START		X				X						
ENTRY REM FLASH		X				X						
EXIT REM FLASH		X				X						
REM FLASH YEL												
FL TOGETHER PHS		X		X		X						

FL TOGETHER OVLPS	A:		B:	X	C:		D:	
POWER START								
EXTERNAL START								
POWER START ALL RED ME								
POWER START FLASH ME								

REMOTE FLASH OPTIONS:	
OUT OF FLASH YELLOW	
OUT OF FLASH ALL RED	
MINIMUM RECALL	
SPARE	
FLASH THRU LOAD SWITCHES	
CYCLE THROUGH PHASES	

7. NO SERVE PHASES

	CANNOT SERVE WITH:										
PHASE	12	11	10	9	8	7	6	5	4	3	2
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

8. DIMMING

LOAD SWITCH	1	2	3	4	5	6	7	8
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								
LOAD SWITCH	9	10	11	12	13	14	15	16
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								

9. CONTROLLER OPTION DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
GUAR PASSAGE												
NONACTUATED I		X										X
NONACTUATED II				X				X				
DUAL ENTRY		X		X		X		X				
COND SERVICE												
COND RESERVICE												
REST IN WALK												
FLASHING WALK												

FIVE SECTION LEFT TURN HEADS					
5-2		7-4		1-6	
3-8		11-10		9-12	

DUAL ENTRY	OFF	RESERVED	OFF
COND SERVICE ENABLE	OFF	BACKUP PROTECTION GROUP 1	OFF
COND SERVICE DET X SWITCHING	OFF	BACKUP PROTECTION GROUP 2	OFF
PED CLR PROTECT	OFF	BACKUP PROTECTION GROUP 3	OFF
SPEC PREEMPT OVLP FLASH	OFF	SIMULTANEOUS GAP GROUP 1	OFF
LOCK DETECTORS IN RED ONLY	OFF	SIMULTANEOUS GAP GROUP 2	OFF
RESERVED	OFF	SIMULTANEOUS GAP GROUP 3	OFF

3. COORDINATOR SUBMENU

1. COORDINATOR OPTIONS

SPLIT UNITS	SEC	ACT CRD PHASE	X
OFFSET UNITS	SEC	ACT WALK/REST	X
INTERCNT FMT	STANDARD	INHIBIT MAX	X
INTERCNT SRC	NIC	MAX2 SELECT	
RESYNC COUNT	0	MULTISYNC	
TRANSITION	SMOOTH	FLOAT FORCE OFF	
DWELL PERIOD	0		

FREE ALTERNATE SEQUENCE	A	B	C	D	E	F

2. COORD MANUAL AND SPLIT DEMAND

MANUAL ENABLE					MANUAL PATTERN							
SPLIT DEMAND:					DEMAND 1				DEMAND 2			
DEMAND CALL TIME												
DEMAND CYCLE COUNT												
DEMAND PHASE	1	2	3	4	5	6	7	8	9	10	11	12
DEMAND 1 PHASE												
DEMAND 2 PHASE												

3. COORD AUTO PERM MIN GREEN

PHASE	AUTO PERM MIN GRN	PHASE	AUTO PERM MIN GRN
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. **PATTERN DATA STD FORMAT**

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
??		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

SPLITS:	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

4. PREEMPTOR SUBMENU

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12
				X								
		X	X			X						
			X					X				
				X								
				Yes		No						
				Yes		No						
				Yes		Yes						
				No		No						
				No		No						

			Green

			10
	10		
	5		
	17		

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12

5. PRIORITY PREEMPTOR 5

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

6. PRIORITY PREEMPTOR 6

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

7. BUS PREEMPTORS

	BUS PREEMPTOR			
	1	2	3	4
PREEMPTOR ACTIVE				
DETECTOR LOCK				
MAXIMUM TIME				
RESERVICE TIME				
DELAY TIME				
INHIBIT TIME				
ENTRANCE GREEN				
ENTRANCE PED CLR				
ENTRANCE YELLOW				
ENTRANCE RED				
MIN HOLD TIME				

	HOLD PHASE											
	1	2	3	4	5	6	7	8	9	10	11	12
PREEMPTOR 1												
PREEMPTOR 2												
PREEMPTOR 3												
PREEMPTOR 4												

5. NIC/TOD SUBMENU

1. NIC/TOD CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL NIC PROGRAM STEP	
MANUAL TOD PROGRAM STEP	
SYNC REFERENCE TIME	0:00
SYNC REFERENCE	REFERENCE TIME
WEEK 1 BEGINS ON 1ST SUNDAY	
DISABLE DAYLIGHT SAVINGS	
DST BEGINS LAST SUNDAY	

2. NIC/TOD WEEKLY PROGRAMS

WEEK	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	1	1	1	1	1	2
2							
3							
4							
5							
6							
7							
8							
9							
10							

3. NIC/TOD YEARLY PROGRAMS

WEEK OF YEAR	1	2	3	4	5	6	7	8
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	9	10	11	12	13	14	15	16
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	17	18	19	20	21	22	23	24
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	25	26	27	28	29	30	31	32
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	33	34	35	36	37	38	39	40
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	41	42	43	44	45	46	47	48
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR				49	50	51	52	53
WEEKLY PROGRAM				1	1	1	1	1

4. NIC/TOD HOLIDAY PROGRAM

HOLIDAY	FLOAT/FIXED	MON/MON	DOW/DOM	WOM/YEAR	PROG
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

5. NIC PROGRAM STEP

STEP	PGM	TIME	PATTERN	OVERRIDE

STEP	PGM	TIME	PATTERN	OVERRIDE

TOD PROGRAM STEP	1											
DAY PGM NUM	1											
STEP BEGINS	00:00											
FLASH						DIM ENABLE						
RED REST						ALT VEH EXTSN						
SPARE 5						DET LOG ENABLE						
SPARE 3						SPARE 4						
TYPE 0 DELAY EN						SPARE 2						
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	2											
DAY PGM NUM	1											
STEP BEGINS												
FLASH						DIM ENABLE						
RED REST						ALT VEH EXTSN						
SPARE 5						DET LOG ENABLE						
SPARE 3						SPARE 4						
TYPE 0 DELAY EN						SPARE 2						
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	3											
DAY PGM NUM	1											
STEP BEGINS												
FLASH						DIM ENABLE						
RED REST						ALT VEH EXTSN						
SPARE 5						DET LOG ENABLE						
SPARE 3						SPARE 4						
TYPE 0 DELAY EN						SPARE 2						
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	4											
DAY PGM NUM	1											
STEP BEGINS												
FLASH						DIM ENABLE						
RED REST						ALT VEH EXTSN						
SPARE 5						DET LOG ENABLE						
SPARE 3						SPARE 4						
TYPE 0 DELAY EN						SPARE 2						
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	5											
DAY PGM NUM	1											
STEP BEGINS												
FLASH						DIM ENABLE						
RED REST						ALT VEH EXTSN						
SPARE 5						DET LOG ENABLE						
SPARE 3						SPARE 4						
TYPE 0 DELAY EN						SPARE 2						
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUM												
STEP BEGINS												
FLASH						DIM ENABLE						
RED REST						ALT VEH EXTSN						
SPARE 5						DET LOG ENABLE						
SPARE 3						SPARE 4						
TYPE 0 DELAY EN						SPARE 2						
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

6. DETECTORS

1. DETECTOR TYPE/TIMERS

DET	TYPE	LOCK	EXTEND	DELAY	NO RESET	LOG ENABLE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

2. DETECTOR PHASE ASSIGNMENT

	PHASE ASSIGNMENT											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2												
3												
4			X									
5				X								
6				X								
7		X										
8		X										
9		X										
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

3. PED AND SYSTEM DETECTOR LOCAL ASSIGNMENT

DETECTOR LOG INTERVAL						MINUTES
LOCAL PED DET NUMBER	PHASE PED DETECTOR					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						
LOCAL DETECTOR NUMBER	LOCAL SYSTEM DET NUMBER					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						

4. CROSS SWITCHING

	PHASES											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

5. SPEED DETECTORS

SPEED DET NUMBER	1	2	3	4	5	6	7	8
ONE DETECTOR SPEED:								
LOCAL DET NUMBER								
VEHICLE LENGTH								
LOOP LENGTH								
TWO DETECTOR SPEED:								
LOCAL DET NUMBER								
SPEED TRAP LENGTH								
ENABLE LOG								
UNITS:								

6. VEHICLE DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	DIAG NO.																
	SCALING																
2	DIAG NO.																
	SCALING																
3	DIAG NO.																
	SCALING																
4	DIAG NO.																
	SCALING																
5	DIAG NO.																
	SCALING																
6	DIAG NO.																
	SCALING																
7	DIAG NO.																
	SCALING																
8	DIAG NO.																
	SCALING																
FINAL ACTION																	

PLAN	DET NO.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	DIAG NO.																
	SCALING																
2	DIAG NO.																
	SCALING																
3	DIAG NO.																
	SCALING																
4	DIAG NO.																
	SCALING																
5	DIAG NO.																
	SCALING																
6	DIAG NO.																
	SCALING																
7	DIAG NO.																
	SCALING																
8	DIAG NO.																
	SCALING																
FINAL ACTION																	

7. PED DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12
1	DIAG NO.												
	SCALING												
2	DIAG NO.												
	SCALING												
3	DIAG NO.												
	SCALING												
4	DIAG NO.												
	SCALING												
5	DIAG NO.												
	SCALING												
6	DIAG NO.												
	SCALING												
7	DIAG NO.												
	SCALING												
8	DIAG NO.												
	SCALING												

8. DETECTOR DIAGNOSTIC INTERVAL

DETECTOR DIAGNOSTIC INTERVAL			
DIAGNOSTIC NUMBER	NO ACTIVITY	MAX PRESENCE	ERRATIC COUNTS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION Seaport Blvd./Chesapeake Dr.

CONTROLLER NUMBER 11-02 ENTERED BY: PD DATE 3/3/23

BOOT _____ VER. _____ MAIN _____ VER. _____ HELP _____ VER _____ CONFIG _____ _____

1. CONFIGURATION SUBMENU

1. CONTROLLER SEQUENCE

PRIORITY	1	2	3	4	5	6	7	8	9	10	11	12
RING 1	1	2	3	4								
RING 2	5	6	7	8								
CG			^	^								

PHASE NUMBER

	1	2	3	4	5	6	7	8	9	10	11	12
PHASES IN USE	X	X		X		X						
EXCLUSIVE PED												

3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP		LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP	
CHANNEL	PH/OLAP	PED	CHANNEL	PH/OLAP	PED
1	1		9	2	X
2	2		10	4	X
3	3		11	6	X
4	4		12	8	X
5	5		13	13	
6	6		14	14	
7	7		15	15	
8	8		16	16	

4. SDLC OPTIONS/ENABLES (BIU Number)

	1	2	3	4	5	6	7	8
TERM & FACIL								
DETECTOR RACK								
TYPE 2 RUNS AS TYPE 1								
MMU DISABLE								x
DIAGNOSTIC ENABLE (TEST FIXTURE)								
PEER TO PEER ENABLE								

PEER TO PEER ADDRESS:

1)		2)		3)		4)		5)	
6)		7)		8)		9)		10)	

5. PORT2 CONFIGURATION

PORT2 PROTOCOL	
PORT2 ENABLE	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
DATA RATE (BPS)	
DATA, PARITY, STOP	

6. PORT3 CONFIGURATION

PORT 3 PROTOCOL	NTCIP
PORT 3 ENABLE	YES
TELEMETRY ADDRESS	2
SYSTEM DETECTOR 9-16 ADDRESS	
TELEMETRY RESPONSE DELAY	8000
AB3418 ADDRESS	1
AB3418 GROUP ADDRESS	0
AB3418 RESPONSE DELAY	16
AB3418 SINGLE FLAG ENABLE	NO
AB3418 DROP-OUT TIME	60
AB3418 TOD SF SELECT	
ADDITIONAL SCREEN(S)	

DUPLEX -- HALF OR FULL	FULL
MODEM DATA RATE (BPS)	1200
DATA, PARITY, STOP	8,0,1

7. ENABLE EVENT LOGS

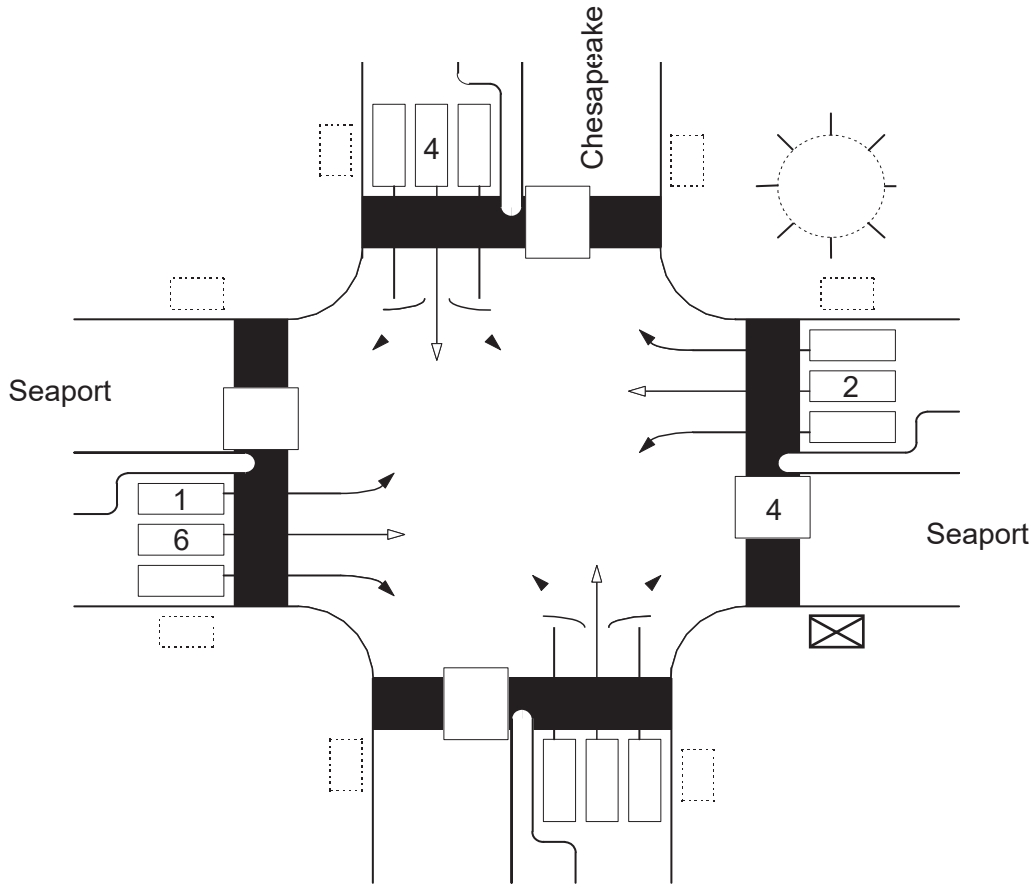
CRITICAL RFE'S (MMU/TE)	X
NON-CRITICAL RFE'S (DET/TEST)	X
DETECTOR ERRORS	X
COORDINATION ERRORS	X
MMU FLASH FAULTS	X
LOCAL FLASH FAULTS	X
PREEMPT	X
POWER ON/OFF	X
LOW BATTERY	X
SPARE	x
ALARM 1	X
ALARM 2	X
ALARM 3	X
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

8. OPTIONS

SUPERVISOR ACCESS CODE	
DATA CHANGE ACCESS CODE	
KEY CLICK ENABLE	YES
BACKLIGHT ENABLE	YES

9. MMU PROGRAM
CAN SERVE WITH

1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														



2. CONTROLLER SUBMENU

1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GRN	10	10		10		10						
BIKE GRN	10	10		10		10						
CS MGRN												
WALK				7								
PED CLR				24								
VEH EXT												
VEH EXT 2	3	3		2.5		3						
MAX EXT												
MAX1	32	32		20		32						
MAX2	32	32		20		32						
MAX3												
DET MAX												
YELLOW	4.2	4.2		4.0		4.2						
RED CLR	1.0	1.0		1.0		1.0						
RED RVT	2	2		2		2						
ACT B4												
SEC/ACT												
MAX INI												
TIME B4												
CARS WT												
TTREDUC												
MIN GAP												

2. PHASE OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9									X			
10										X		
11											X	
12												X

3. PED TIMING CARRYOVER

PHASE	CARRYOVER PHASE	PHASE	CARRYOVER PHASE
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. CONTROLLER RECALL DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
LOCKING MEMORY												
VEHICLE RECALL		x				x						
PED RECALL												
RECALL TO MAX												
SOFT RECALL												
DON'T REST HERE												
PED DARK N/CALL												

5. CONTROLLER OVERLAP DATA

OVERLAP A	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP B	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP C	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP D	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

PED OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

6. CONTROLLER START/FLASH DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
POWER START		X				X						
EXTERNAL START												
ENTRY REM FLASH		X				X						
EXIT REM FLASH		X				X						
REM FLASH YEL												
FL TOGETHER PHS		X		X		X		X				

FL TOGETHER OVLPS	A:		B:		C:		D:	
POWER START	RED							
EXTERNAL START	RED							
POWER START ALL RED ME								
POWER START FLASH ME								

REMOTE FLASH OPTIONS:	
OUT OF FLASH YELLOW	
OUT OF FLASH ALL RED	
MINIMUM RECALL	
SPARE	
FLASH THRU LOAD SWITCHES	
CYCLE THROUGH PHASES	

7. NO SERVE PHASES

	CANNOT SERVE WITH:										
PHASE	12	11	10	9	8	7	6	5	4	3	2
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

8. DIMMING

LOAD SWITCH	1	2	3	4	5	6	7	8
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								
LOAD SWITCH	9	10	11	12	13	14	15	16
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								

9. CONTROLLER OPTION DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
GUAR PASSAGE		X				X		X				
NONACTUATED I		X				X						X
NONACTUATED II												
DUAL ENTRY		X				X						
COND SERVICE												
COND RESERVICE												
REST IN WALK												
FLASHING WALK												

FIVE SECTION LEFT TURN HEADS					
5-2		7-4		1-6	
3-8		11-10		9-12	

DUAL ENTRY	ON	RESERVED	
COND SERVICE ENABLE		BACKUP PROTECTION GROUP 1	
COND SERVICE DET X SWITCHING		BACKUP PROTECTION GROUP 2	
PED CLR PROTECT		BACKUP PROTECTION GROUP 3	
SPEC PREEMPT OVLP FLASH		SIMULTANEOUS GAP GROUP 1	OFF
LOCK DETECTORS IN RED ONLY		SIMULTANEOUS GAP GROUP 2	OFF
RESERVED		SIMULTANEOUS GAP GROUP 3	

3. COORDINATOR SUBMENU

1. COORDINATOR OPTIONS

SPLIT UNITS	SEC	ACT CRD PHASE	
OFFSET UNITS	SEC	ACT WALK/REST	
INTERCNT FMT	STANDARD	INHIBIT MAX	
INTERCNT SRC	NIC	MAX2 SELECT	
RESYNC COUNT	0	MULTISYNC	
TRANSITION	SMOOTH	FLOAT FORCE OFF	
DWELL PERIOD	0		

FREE ALTERNATE SEQUENCE	A	B	C	D	E	F

2. COORD MANUAL AND SPLIT DEMAND

MANUAL ENABLE					MANUAL PATTERN							
SPLIT DEMAND:					DEMAND 1				DEMAND 2			
DEMAND CALL TIME												
DEMAND CYCLE COUNT												
DEMAND PHASE	1	2	3	4	5	6	7	8	9	10	11	12
DEMAND 1 PHASE												
DEMAND 2 PHASE												

3. COORD AUTO PERM MIN GREEN

PHASE	AUTO PERM MIN GRN	PHASE	AUTO PERM MIN GRN
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. **PATTERN DATA STD FORMAT**

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
??		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

SPLITS:	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

ST ORMAT

P AN ORMAT

TS ORMAT

			1		2		3		

1		2		3		4						
5		6		7		8						
9		10		11		12						
				1		2						
2												
				1		2						
				1		2						
	1	2	3	4	5	6	7	8	9	10	11	12

4. PREEMPTOR SUBMENU

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12
				X								
		X				X						

	Yes	No
	Yes	No
	No	Yes
	No	No
	No	No

			Green

	0		

	0		
	17	4	

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12

. PRIORIT PREEMPTOR

	1	2	3	4	5	6	7	8	9	10	11	12

5. PRIORITY PREEMPTOR 5

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME	5	DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

6. PRIORITY PREEMPTOR 6

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

7. BUS PREEMPTORS

	BUS PREEMPTOR			
	1	2	3	4
PREEMPTOR ACTIVE				
DETECTOR LOCK				
MAXIMUM TIME				
RESERVICE TIME				
DELAY TIME				
INHIBIT TIME				
ENTRANCE GREEN				
ENTRANCE PED CLR				
ENTRANCE YELLOW				
ENTRANCE RED				
MIN HOLD TIME				

	HOLD PHASE											
	1	2	3	4	5	6	7	8	9	10	11	12
PREEMPTOR 1												
PREEMPTOR 2												
PREEMPTOR 3												
PREEMPTOR 4												

5. NIC/TOD SUBMENU

1. NIC/TOD CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL NIC PROGRAM STEP	
MANUAL TOD PROGRAM STEP	
SYNC REFERENCE TIME	0:00
SYNC REFERENCE	REFERENCE TIME
WEEK 1 BEGINS ON 1ST SUNDAY	
DISABLE DAYLIGHT SAVINGS	
DST BEGINS LAST SUNDAY	

2. NIC/TOD WEEKLY PROGRAMS

WEEK	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	1	1	1	1	1	2
2							
3							
4							
5							
6							
7							
8							
9							
10							

3. NIC/TOD YEARLY PROGRAMS

WEEK OF YEAR	1	2	3	4	5	6	7	8
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	9	10	11	12	13	14	15	16
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	17	18	19	20	21	22	23	24
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	25	26	27	28	29	30	31	32
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	33	34	35	36	37	38	39	40
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	41	42	43	44	45	46	47	48
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR				49	50	51	52	53
WEEKLY PROGRAM				1	1	1	1	1

4. NIC/TOD HOLIDAY PROGRAM

HOLIDAY	FLOAT/FIXED	MON/MON	DOW/DOM	WOM/YEAR	PROG
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

5. NIC PROGRAM STEP

STEP	PGM	TIME	PATTERN	OVERRIDE

STEP	PGM	TIME	PATTERN	OVERRIDE

TOD PROGRAM STEP	1											
DAY PGM NUM	1											
STEP BEGINS	00:00											
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY EN					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	2											
DAY PGM NUM	1											
STEP BEGINS	6:00											
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY EN					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	3											
DAY PGM NUM	1											
STEP BEGINS	22:00											
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY EN					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	4											
DAY PGM NUM	1											
STEP BEGINS	0:00											
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY EN					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	5											
DAY PGM NUM	1											
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY EN					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUM												
STEP BEGINS												
FLASH					DIM ENABLE							
RED REST					ALT VEH EXTSN							
SPARE 5					DET LOG ENABLE							
SPARE 3					SPARE 4							
TYPE 0 DELAY EN					SPARE 2							
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

6. DETECTORS

1. DETECTOR TYPE/TIMERS

DET	TYPE	LOCK	EXTEND	DELAY	NO RESET	LOG ENABLE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

2. DETECTOR PHASE ASSIGNMENT

	PHASE ASSIGNMENT											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3		X										
4		X										
5		X										
6				X								
7				X								
8						X						
9						X						
10						X						
11						X						
12												
13				X								
14				X								
15								X				
16								X				
17							X					
18		X										
19												
20												
21												
22						X						
23												
24												
25						X						
26		X										
27												
28												
29												
30						X						
31												
32												

3. PED AND SYSTEM DETECTOR LOCAL ASSIGNMENT

DETECTOR LOG INTERVAL						MINUTES
LOCAL PED DET NUMBER	PHASE PED DETECTOR					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						
LOCAL DETECTOR NUMBER	LOCAL SYSTEM DET NUMBER					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						

4. CROSS SWITCHING

	PHASES											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
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22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

5. SPEED DETECTORS

SPEED DET NUMBER	1	2	3	4	5	6	7	8
ONE DETECTOR SPEED:								
LOCAL DET NUMBER								
VEHICLE LENGTH								
LOOP LENGTH								
TWO DETECTOR SPEED:								
LOCAL DET NUMBER								
SPEED TRAP LENGTH								
ENABLE LOG								
UNITS:								

6. VEHICLE DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	DIAG NO.																
	SCALING																
2	DIAG NO.																
	SCALING																
3	DIAG NO.																
	SCALING																
4	DIAG NO.																
	SCALING																
5	DIAG NO.																
	SCALING																
6	DIAG NO.																
	SCALING																
7	DIAG NO.																
	SCALING																
8	DIAG NO.																
	SCALING																
FINAL ACTION																	

PLAN	DET NO.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	DIAG NO.																
	SCALING																
2	DIAG NO.																
	SCALING																
3	DIAG NO.																
	SCALING																
4	DIAG NO.																
	SCALING																
5	DIAG NO.																
	SCALING																
6	DIAG NO.																
	SCALING																
7	DIAG NO.																
	SCALING																
8	DIAG NO.																
	SCALING																
FINAL ACTION																	

7. PED DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12
1	DIAG NO.												
	SCALING												
2	DIAG NO.												
	SCALING												
3	DIAG NO.												
	SCALING												
4	DIAG NO.												
	SCALING												
5	DIAG NO.												
	SCALING												
6	DIAG NO.												
	SCALING												
7	DIAG NO.												
	SCALING												
8	DIAG NO.												
	SCALING												

8. DETECTOR DIAGNOSTIC INTERVAL

DETECTOR DIAGNOSTIC INTERVAL			
DIAGNOSTIC NUMBER	NO ACTIVITY	MAX PRESENCE	ERRATIC COUNTS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
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24			
25			
26			
27			
28			
29			
30			
31			
32			

ASC/2

PROGRAM REFERENCE CARD

INTERSECTION Seaport Blvd/Blomquist St/E. Bayshore Rd

CONTROLLER NUMBER 11-01 ENTERED BY: PD DATE 9/26/19

BOOT _____ VER. _____ MAIN _____ VER. _____ HELP _____ VER _____ CONFIG _____ _____

1. CONFIGURATION SUBMENU

1. CONTROLLER SEQUENCE

PRIORITY	1	2	3	4	5	6	7	8	9	10	11	12
RING 1	1	2	4	3								
RING 2	5	6	7	8								
CG			^	^								

PHASE NUMBER

	1	2	3	4	5	6	7	8	9	10	11	12
PHASES IN USE	X	X	X	X	X	X	X	X				
EXCLUSIVE PED												

3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP		LOAD SWITCH (MMU)	SIGNAL DRIVER GROUP	
CHANNEL	PH/OLAP	PED	CHANNEL	PH/OLAP	PED
1	1		9	2	X
2	2		10	4	X
3	3		11	6	X
4	4		12	8	X
5	5		13	A	
6	6		14	B	
7	7		15	C	
8	8		16	D	

4. SDLC OPTIONS/ENABLES (BIU Number)

	1	2	3	4	5	6	7	8
TERM & FACIL								
DETECTOR RACK								
TYPE 2 RUNS AS TYPE 1								
MMU DISABLE								x
DIAGNOSTIC ENABLE (TEST FIXTURE)								
PEER TO PEER ENABLE								
PEER TO PEER ADDRESS:								

1)		2)		3)		4)		5)	
6)		7)		8)		9)		10)	

5. PORT2 CONFIGURATION

PORT2 PROTOCOL	
PORT2 ENABLE	
AB3418 ADDRESS	
AB3418 GROUP ADDRESS	
AB3418 RESPONSE DELAY	
AB3418 SINGLE FLAG ENABLE	
AB3418 DROP-OUT TIME	
AB3418 TOD SF SELECT	
DATA RATE (BPS)	
DATA, PARITY, STOP	

6. PORT3 CONFIGURATION

PORT 3 PROTOCOL	NTCIP
PORT 3 ENABLE	YES
TELEMETRY ADDRESS	1
SYSTEM DETECTOR 9-16 ADDRESS	
TELEMETRY RESPONSE DELAY	800
AB3418 ADDRESS	1
AB3418 GROUP ADDRESS	0
AB3418 RESPONSE DELAY	16
AB3418 SINGLE FLAG ENABLE	NO
AB3418 DROP-OUT TIME	60
AB3418 TOD SF SELECT	
ADDITIONAL SCREEN(S)	

DUPLEX -- HALF OR FULL	FULL
MODEM DATA RATE (BPS)	9600
DATA, PARITY, STOP	8,N,1

7. ENABLE EVENT LOGS

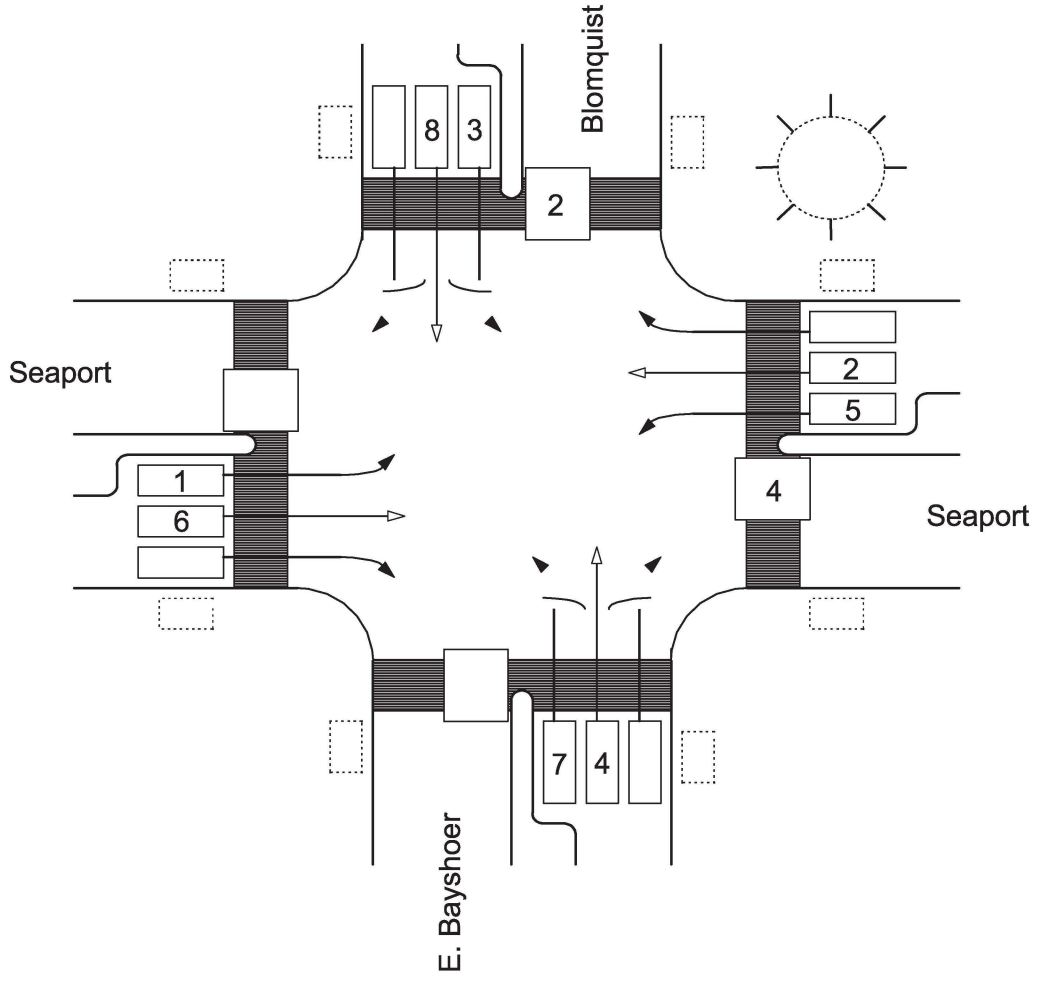
CRITICAL RFE'S (MMU/TF)	X
NON-CRITICAL RFE'S (DET/TEST)	X
DETECTOR ERRORS	X
COORDINATION ERRORS	X
MMU FLASH FAULTS	X
LOCAL FLASH FAULTS	X
PREEMPT	X
POWER ON/OFF	X
LOW BATTERY	X
SPARE	
ALARM 1	X
ALARM 2	
ALARM 3	
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

8. OPTIONS

SUPERVISOR ACCESS CODE	
DATA CHANGE ACCESS CODE	
KEY CLICK ENABLE	YES
BACKLIGHT ENABLE	YES

9. MMU PROGRAM CAN SERVE WITH

1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														



2. CONTROLLER SUBMENU

1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GRN	8	8	9	8	9	8	8	10				
BIKE GRN												
CS MGRN												
WALK		7		7								
PED CLR		20		18								
VEH EXT												
VEH EXT 2	3	3	3	3	3	3	3	3				
MAX EXT												
MAX1	24	44	22	24	20	44	24	22				
MAX2	16	40			12	40						
MAX3	36	54				54						
DET MAX												
YELLOW	4.1	4.1	4.0	4.1	4.1	4.1	4.1	4.0				
RED CLR	1	1	1	1	1	1	1	1				
RED RVT	2	2	2	2	2	2	2	2				
ACT B4												
SEC/ACT												
MAX INI												
TIME B4												
CARS WT												
TTREDUC												
MIN GAP												

2. PHASE OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9									X			
10										X		
11											X	
12												X

3. PED TIMING CARRYOVER

PHASE	CARRYOVER PHASE	PHASE	CARRYOVER PHASE
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. CONTROLLER RECALL DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
LOCKING MEMORY												
VEHICLE RECALL												
PED RECALL												
RECALL TO MAX												
SOFT RECALL		X				X						
DON'T REST HERE												
PED DARK N/CALL												

5. CONTROLLER OVERLAP DATA

OVERLAP A	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP B	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD	x	x	x	x	x	x	x	x				
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP C	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP D	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

PED OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

6. CONTROLLER START/FLASH DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
POWER START												
EXTERNAL START												
ENTRY REM FLASH												
EXIT REM FLASH												
REM FLASH YEL												
FL TOGETHER PHS		X		X		X		X				

FL TOGETHER OVLPS	A:		B:		C:		D:	
POWER START								
EXTERNAL START								
POWER START ALL RED ME								
POWER START FLASH ME								

REMOTE FLASH OPTIONS:	
OUT OF FLASH YELLOW	
OUT OF FLASH ALL RED	
MINIMUM RECALL	
SPARE	
FLASH THRU LOAD SWITCHES	
CYCLE THROUGH PHASES	

7. NO SERVE PHASES

	CANNOT SERVE WITH:										
PHASE	12	11	10	9	8	7	6	5	4	3	2
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

8. DIMMING

LOAD SWITCH	1	2	3	4	5	6	7	8
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								
LOAD SWITCH	9	10	11	12	13	14	15	16
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								

9. CONTROLLER OPTION DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
GUAR PASSAGE												
NONACTUATED I												
NONACTUATED II												
DUAL ENTRY	X	X	X	X	X	X	X	x				
COND SERVICE												
COND RESERVICE												
REST IN WALK												
FLASHING WALK												

FIVE SECTION LEFT TURN HEADS					
5-2		7-4		1-6	
3-8		11-10		9-12	

DUAL ENTRY	ON	RESERVED	
COND SERVICE ENABLE		BACKUP PROTECTION GROUP 1	
COND SERVICE DET X SWITCHING		BACKUP PROTECTION GROUP 2	
PED CLR PROTECT		BACKUP PROTECTION GROUP 3	
SPEC PREEMPT OVLP FLASH		SIMULTANEOUS GAP GROUP 1	ON
LOCK DETECTORS IN RED ONLY		SIMULTANEOUS GAP GROUP 2	ON
RESERVED		SIMULTANEOUS GAP GROUP 3	

3. COORDINATOR SUBMENU

1. COORDINATOR OPTIONS

SPLIT UNITS	SEC	ACT CRD PHASE	X
OFFSET UNITS	SEC	ACT WALK/REST	X
INTERCNT FMT	STANDARD	INHIBIT MAX	X
INTERCNT SRC	NIC	MAX2 SELECT	
RESYNC COUNT	0	MULTISYNC	
TRANSITION	SMOOTH	FLOAT FORCE OFF	
DWELL PERIOD	0		

FREE ALTERNATE SEQUENCE	A	B	C	D	E	F

2. COORD MANUAL AND SPLIT DEMAND

MANUAL ENABLE					MANUAL PATTERN							
SPLIT DEMAND:					DEMAND 1				DEMAND 2			
DEMAND CALL TIME												
DEMAND CYCLE COUNT												
DEMAND PHASE	1	2	3	4	5	6	7	8	9	10	11	12
DEMAND 1 PHASE												
DEMAND 2 PHASE												

3. COORD AUTO PERM MIN GREEN

PHASE	AUTO PERM MIN GRN	PHASE	AUTO PERM MIN GRN
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. **PATTERN DATA STD FORMAT**

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
??		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

SPLITS:	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN				
CYCLE LENGTH		OFFSTS	1	2	3	

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												

	A	B	C	D	E	F
ALT SEQUENCE						

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

STD FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		C/O/S	

PLAN FORMAT

COORD PATTERN		OFFSET	
CYCLE LENGTH		PLAN	

TS2 FORMAT

COORD PATTERN		TIMING PLAN							
CYCLE LENGTH		OFFSTS	1		2		3		

SPLITS:												
PHASE 1)		2)		3)		4)						
PHASE 5)		6)		7)		8)						
PHASE 9)		10)		11)		12)						
VEH PERMISSIVE				[1]		[2]						
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING				[1]		[2]						
SPL DMD PATTERN				[1]		[2]						
XARTERY PATTERN												
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES												
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												
SPARE												
	A	B	C	D	E	F						
ALT SEQUENCE												

4. PREEMPTOR SUBMENU

1. PRIORITY PREEMPTOR 1

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE			X					X				
HOLD PHASES		X			X	X						
EXIT PHASES			X					X				
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B: X	C:	D:
ACTIVE	Yes	PED DARK	No
PRIORITY	Yes	PED ACTIVE	No
DET LOCK	Yes	ZERO PC TIME	Yes
HOLD FLASH	No	PC THRU YELLOW	No
TERM OVLP ASAP	No	TERM PHASES	No

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	Green

MAX TIME		DURATION TIME	
MIN HOLD TIME	10	DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM	5		
TRACK CLEAR	24		
HOLD			

2. PRIORITY PREEMPTOR 2

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:
ACTIVE		PED DARK		
PRIORITY		PED ACTIVE		
DET LOCK		ZERO PC TIME		
HOLD FLASH		PC THRU YELLOW		
TERM OVLP ASAP		TERM PHASES		

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

3. PRIORITY PREEMPTOR 3

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES				x			x					
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:
ACTIVE	YES	PED DARK		
PRIORITY		PED ACTIVE		
DET LOCK		ZERO PC TIME		
HOLD FLASH		PC THRU YELLOW		
TERM OVLP ASAP		TERM PHASES		

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME	5	DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

4. PRIORITY PREEMPTOR 4

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES	x					x						
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:
ACTIVE	YES	PED DARK		
PRIORITY		PED ACTIVE		
DET LOCK		ZERO PC TIME		
HOLD FLASH		PC THRU YELLOW		
TERM OVLP ASAP		TERM PHASES		

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME	5	DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

5. PRIORITY PREEMPTOR 5

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES			X					X				
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE	YES	PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME	5	DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

6. PRIORITY PREEMPTOR 6

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES		X			X							
EXIT PHASES												
EXIT CALLS												
SPARE												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE	YES	PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	

DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	

MAX TIME		DURATION TIME	
MIN HOLD TIME	5	DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
EXIT MAX		HLD DELAY TIME	

	GRN	YEL	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

7. BUS PREEMPTORS

	BUS PREEMPTOR			
	1	2	3	4
PREEMPTOR ACTIVE				
DETECTOR LOCK				
MAXIMUM TIME				
RESERVICE TIME				
DELAY TIME				
INHIBIT TIME				
ENTRANCE GREEN				
ENTRANCE PED CLR				
ENTRANCE YELLOW				
ENTRANCE RED				
MIN HOLD TIME				

	HOLD PHASE											
	1	2	3	4	5	6	7	8	9	10	11	12
PREEMPTOR 1												
PREEMPTOR 2												
PREEMPTOR 3												
PREEMPTOR 4												

5. NIC/TOD SUBMENU

1. NIC/TOD CLOCK/CALENDAR DATA

DATE SET:		
TIME SET:		
MANUAL NIC PROGRAM STEP		
MANUAL TOD PROGRAM STEP		
SYNC REFERENCE TIME	0:00	
SYNC REFERENCE	REFERENCE TIME	
WEEK 1 BEGINS ON 1ST SUNDAY		
DISABLE DAYLIGHT SAVINGS		
DST BEGINS LAST SUNDAY		

2. NIC/TOD WEEKLY PROGRAMS

WEEK	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	1	1	1	1	1	2
2							
3							
4							
5							
6							
7							
8							
9							
10							

3. NIC/TOD YEARLY PROGRAMS

WEEK OF YEAR	1	2	3	4	5	6	7	8
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	9	10	11	12	13	14	15	16
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	17	18	19	20	21	22	23	24
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	25	26	27	28	29	30	31	32
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	33	34	35	36	37	38	39	40
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR	41	42	43	44	45	46	47	48
WEEKLY PROGRAM	1	1	1	1	1	1	1	1
WEEK OF YEAR				49	50	51	52	53
WEEKLY PROGRAM				1	1	1	1	1

4. NIC/TOD HOLIDAY PROGRAM

HOLIDAY	FLOAT/FIXED	MON/MON	DOW/DOM	WOM/YEAR	PROG
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					

5. NIC PROGRAM STEP

STEP	PGM	TIME	PATTERN	OVERRIDE

STEP	PGM	TIME	PATTERN	OVERRIDE

TOD PROGRAM STEP	1											
DAY PGM NUM	1											
STEP BEGINS	00:00											
FLASH								DIM ENABLE				
RED REST								ALT VEH EXTSN				
SPARE 5								DET LOG ENABLE				
SPARE 3								SPARE 4				
TYPE 0 DELAY EN								SPARE 2				
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	2											
DAY PGM NUM	1											
STEP BEGINS	07:00											
FLASH								DIM ENABLE				
RED REST								ALT VEH EXTSN				
SPARE 5								DET LOG ENABLE				
SPARE 3								SPARE 4				
TYPE 0 DELAY EN								SPARE 2				
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE		X			X							
MAX3 ENABLE	X					X						
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	3											
DAY PGM NUM	1											
STEP BEGINS	09:30											
FLASH								DIM ENABLE				
RED REST								ALT VEH EXTSN				
SPARE 5								DET LOG ENABLE				
SPARE 3								SPARE 4				
TYPE 0 DELAY EN								SPARE 2				
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	4											
DAY PGM NUM	1											
STEP BEGINS	16:00											
FLASH								DIM ENABLE				
RED REST								ALT VEH EXTSN				
SPARE 5								DET LOG ENABLE				
SPARE 3								SPARE 4				
TYPE 0 DELAY EN								SPARE 2				
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE	X					X						
MAX3 ENABLE		X										
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP	5											
DAY PGM NUM	1											
STEP BEGINS	18:00											
FLASH								DIM ENABLE				
RED REST								ALT VEH EXTSN				
SPARE 5								DET LOG ENABLE				
SPARE 3								SPARE 4				
TYPE 0 DELAY EN								SPARE 2				
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

TOD PROGRAM STEP												
DAY PGM NUM												
STEP BEGINS												
FLASH								DIM ENABLE				
RED REST								ALT VEH EXTSN				
SPARE 5								DET LOG ENABLE				
SPARE 3								SPARE 4				
TYPE 0 DELAY EN								SPARE 2				
DET DIAG PLAN												
ALTERNATE SEQUENCE	A		B		C		D		E		F	

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS									(1 - 8)			

6. DETECTORS

1. DETECTOR TYPE/TIMERS

DET	TYPE	LOCK	EXTEND	DELAY	NO RESET	LOG ENABLE
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

2. DETECTOR PHASE ASSIGNMENT

	PHASE ASSIGNMENT											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9								X				
10		X										
11			X									
12				X								
13		X										
14						X						
15								X				
16								X				
17						X						
18		X										
19												
20												
21												
22						X						
23												
24												
25						X						
26		X										
27												
28												
29												
30						X						
31												
32												

3. PED AND SYSTEM DETECTOR LOCAL ASSIGNMENT

DETECTOR LOG INTERVAL						MINUTES
LOCAL PED DET NUMBER	PHASE PED DETECTOR					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						
LOCAL DETECTOR NUMBER	LOCAL SYSTEM DET NUMBER					
	1	2	3	4	5	6
	7	8	9	10	11	12
NUMBER						

4. CROSS SWITCHING

	PHASES											
DETECTOR	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

5. SPEED DETECTORS

SPEED DET NUMBER	1	2	3	4	5	6	7	8
ONE DETECTOR SPEED:								
LOCAL DET NUMBER								
VEHICLE LENGTH								
LOOP LENGTH								
TWO DETECTOR SPEED:								
LOCAL DET NUMBER								
SPEED TRAP LENGTH								
ENABLE LOG								
UNITS:								

6. VEHICLE DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	DIAG NO.																
	SCALING																
2	DIAG NO.																
	SCALING																
3	DIAG NO.																
	SCALING																
4	DIAG NO.																
	SCALING																
5	DIAG NO.																
	SCALING																
6	DIAG NO.																
	SCALING																
7	DIAG NO.																
	SCALING																
8	DIAG NO.																
	SCALING																
FINAL ACTION																	

PLAN	DET NO.	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
1	DIAG NO.																
	SCALING																
2	DIAG NO.																
	SCALING																
3	DIAG NO.																
	SCALING																
4	DIAG NO.																
	SCALING																
5	DIAG NO.																
	SCALING																
6	DIAG NO.																
	SCALING																
7	DIAG NO.																
	SCALING																
8	DIAG NO.																
	SCALING																
FINAL ACTION																	

7. PED DETECTOR DIAGNOSTIC PLAN

PLAN	DET NO.	1	2	3	4	5	6	7	8	9	10	11	12
1	DIAG NO.												
	SCALING												
2	DIAG NO.												
	SCALING												
3	DIAG NO.												
	SCALING												
4	DIAG NO.												
	SCALING												
5	DIAG NO.												
	SCALING												
6	DIAG NO.												
	SCALING												
7	DIAG NO.												
	SCALING												
8	DIAG NO.												
	SCALING												

8. DETECTOR DIAGNOSTIC INTERVAL

DETECTOR DIAGNOSTIC INTERVAL			
DIAGNOSTIC NUMBER	NO ACTIVITY	MAX PRESENCE	ERRATIC COUNTS
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
32			

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Location: VETERAN BLVD & WOODSIDE ROAD **Designed By:**

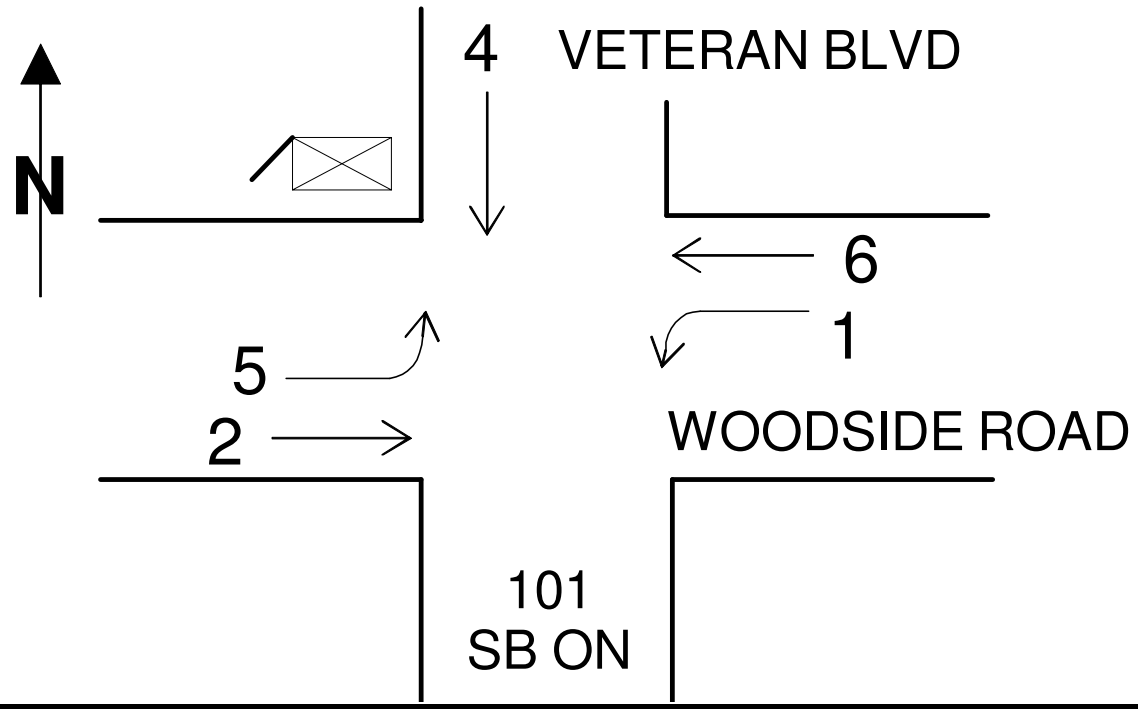
System: **District: 04** **Installed By:**

Master At: **I/C:** **Service Info:**

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

		FLASH
PHASE	1)	[R]
	2)	[R]
	3)	[ ]
	4)	[R]
	5)	[R]
	6)	[R]
	7)	[ ]
	8)	[ ]
OVERLAP	A)	[ ]
	B)	[ ]
	C)	[ ]
	D)	[ ]
	E)	[ ]
	F)	[ ]

Intersection Layout



Comments and Notes:

TSCP 2.21 (BUILD 5e) – 09/07/2017
Connected to Central Systems Via Network Port thru Hirschman Switch (Port 8)
Flush Plans Implemented - 06/09/2016

RAM Checksum

Page 2: 7170	Page 8: 85AF
Page 3: A509	Page 9: D36B
Page 4: F29E	Page 10: CBA8
Page 5: 41C3	Page 11: FDAC
Page 6: 2CAF	Page 12: D68F
Page 7: 8413	Page 13: A57A

Post Mile: SM-084-25.658 ***Printed: 9/11/2017***

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 . 4 5 6 . .
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	1 2 . 4 5 6 . .
Pedestrian Calls	. . . . .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlap	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlap	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. . . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. . . . .
P3	. . . . .
P4	. . . . .
P5	. . . . .
P6	. . . . .
P7	. . . . .
P8	. . . . .

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	10	0	10	0	10	0	10
Flash Don't Walk	0	10	0	10	0	10	0	10
Minimum Green	4	12	10	5	4	12	10	10
Det Limit	0	15	10	0	0	15	10	10
Max Initial	0	20	10	20	0	20	10	10
Max Green 1	21	40	50	47	20	40	50	50
Max Green 2	40	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	0.0	0.0	5.0	0.0	0.0	0.0	5.0	5.0
Maximum Gap	2.5	4.0	5.0	2.0	2.0	4.0	5.0	5.0
Minimum Gap	2.0	2.5	5.0	1.0	2.0	2.5	5.0	5.0
Add Per Vehicle	0.0	2.0	1.0	1.5	0.0	2.0	1.0	1.0
Reduce Gap By	0.1	0.1	0.0	0.1	0.1	0.1	0.0	0.0
Reduce Every	1.0	1.5	1.0	1.0	0.8	1.5	1.0	1.0
Yellow	3.5	4.5	5.0	3.7	3.5	4.5	5.0	5.0
All-Red	0.0	0.0	1.0	0.5	0.0	0.0	1.0	1.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor			.....											
Plan 2	Green Factor			.....											
Plan 3	Green Factor			.....											
Plan 4	Green Factor			.....											
Plan 5	Green Factor			.....											
Plan 6	Green Factor			.....											
Plan 7	Green Factor			.....											
Plan 8	Green Factor			.....											
Plan 9	Green Factor			.....											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	.....
Veh Min	Veh Max
. 2 . . . 6 . .	.....
Ped	Bike
.....	.....
Cond	Cond Grn
.....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	.....	.....	.....	.....	.....	.....	.....	.....
Plan 2	.....	.....	.....	.....	.....	.....	.....	.....
Plan 3	.....	.....	.....	.....	.....	.....	.....	.....
Plan 4	.....	.....	.....	.....	.....	.....	.....	.....
Plan 5	.....	.....	.....	.....	.....	.....	.....	.....
Plan 6	.....	.....	.....	.....	.....	.....	.....	.....
Plan 7	.....	.....	.....	.....	.....	.....	.....	.....
Plan 8	.....	.....	.....	.....	.....	.....	.....	.....
Plan 9	.....	.....	.....	.....	.....	.....	.....	.....

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor	180		.....	110			32	98		36	14	114		
Plan 12	Green Factor	200		.....	120			32	113		41	15	128		
Plan 13	Green Factor	220		.....	130			37	123		46	17	141		
Plan 14	Green Factor	160		.....	78			37	63		46	22	76		
Plan 15	Green Factor	180		.....	1			37	83		46	22	96		
Plan 16	Green Factor	210		.....	40			42	103		51	22	121		
Plan 17	Green Factor	180		.....	88			42	73		51	22	91		
Plan 18	Green Factor	200		.....	88			47	84		55	22	107		
Plan 19	Green Factor	220		.....	93			52	98		56	24	124		

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 12	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 13	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 14	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 15	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 16	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 17	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 18	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 19	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor	180		.....	70			20	95		51	17	96		
Plan 22	Green Factor	200		.....	80			20	90		76	14	94		
Plan 23	Green Factor	220		.....	90			22	108		76	14	114		
Plan 24	Green Factor	160		.....	127			25	65		56	22	66		
Plan 25	Green Factor	180		.....	26			24	81		61	27	76		
Plan 26	Green Factor	210		.....	180			27	93		76	32	86		
Plan 27	Green Factor	180		.....	44			35	75		56	22	86		
Plan 28	Green Factor	200		.....	34			37	83		66	23	95		
Plan 29	Green Factor	220		.....	21			37	98		71	25	108		

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 22	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 23	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 24	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 25	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 26	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 27	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 28	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 29	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....

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DETECTORS

Detector Attributes (5-1)				Slot
Det	Type	Phases	Lock	
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	. . 3	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	 8	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	NO	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. . . . .	NO	I12U
42	PEDESTRIAN	. . . . .	NO	I12L
43	PEDESTRIAN	. . . . .	NO	I13U
44	PEDESTRIAN	. . . . .	NO	I13L

Detector Configuration (5-2)				
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Nu								
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)

Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1	0615	2130	M T W T F . .	17	1 . . . . .
2	0900	2130	. . . . . S S	17	1 . . . . .
3	0615	2130	M T W T F S S	12	. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)							
#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	172	.	22	.	8	.	147
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	254
Gateway	172	.	22	.	8	.	1

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RAILROAD PREEMPTION

RR 1

(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Clear 1	10	. 2 . . 5 . . .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
Clear 2		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Clear 3		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Hold		. . . . .	. . . . .	1 2 3 4 5 6 7 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	A B C D E F
Exit	5									
Min Grn										
Ped Clr										

Exit Parameters (3-1-5)			
Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)			
PR 1	PR 2	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2

(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Clear 1	10	. . . 4 . . 7 .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
Clear 2		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Clear 3		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Hold		1 2 3 . . 6 . .	. . . . .	. . . . .	. 2 . . . 6 . .	. . . . .	. . . 4 . . . 8	. . . . .	. . . . .	. . . . .
Exit										
Min Grn										
Ped Clr										

Exit Parameters (3-2-5)			
Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	. . . 4 . . 7 .	. . . . .

Configuration (3-2-6)			
PR 1	PR 2	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
5.8	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

\+ middle output of loadswitches 3 and 6 Channel 9 and 10

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	OPT	0	0
Plan 11-19	. . . . .	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C	150	150			134	29		86	29				. 2 . . . 6 . .	. 2 . 4 5 . . 8	. . . 4 5 . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

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Location: BROADWAY AVE / SB 101 OFF & WOODSIDE RD **Designed By:**

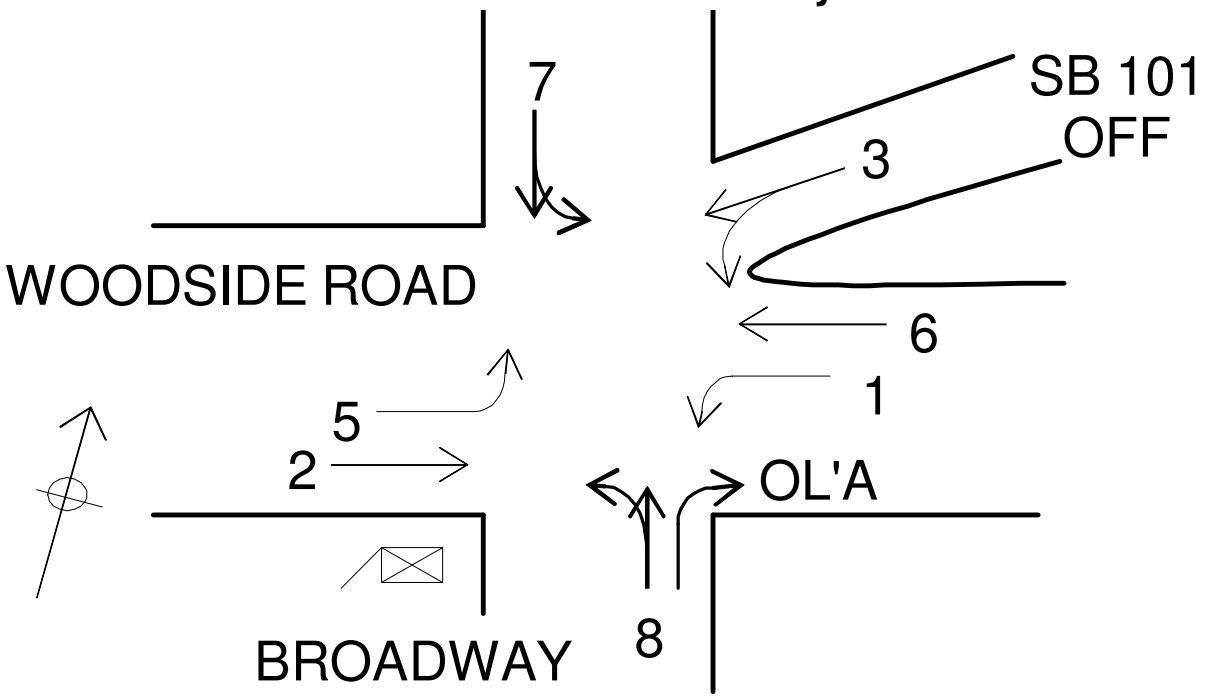
System: **District:** 04 **Installed By:**

Master At: **I/C:** **Service Info:**

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

		FLASH
PHASE	1)	[R]
	2)	[R]
	3)	[R]
	4)	[ ]
	5)	[R]
	6)	[R]
	7)	[R]
	8)	[R]
OVERLAP	A)	[ ]
	B)	[ ]
	C)	[ ]
	D)	[ ]
	E)	[ ]
	F)	[ ]

Intersection Layout



Comments and Notes:

***** DO NOT REPLACE WITH 170/E CONTROLLER *****

TSCP 2.21 (BUILD 5e) – 09/07/2017
Connected to Central Systems Via Network Port thru Actelis ML684 (Port 4)
Flush Plans Implemented - 06/09/2016

RAM Checksum

Page 2: 38F4	Page 8: 85AF
Page 3: 9FD5	Page 9: 9147
Page 4: F29E	Page 10: DBA7
Page 5: 5365	Page 11: FDAC
Page 6: 66EE	Page 12: 26DA
Page 7: 422F	Page 13: 86F7

Post Mile: SM-084-25.567 ***Printed:*** *6/5/2023*

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 3 . 5 6 7 8
Restricted	. . 3 . . . 7 8

Phase Recalls (2-1-1-2)	
Vehicle Min	. . . . .
Vehicle Max	. 2. . 6. 7. 8. . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	1 2 3 . 5 6 7 8
Pedestrian Calls	. 2 3 . . . 7 .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlap	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlap	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. 2. . 3. .7 . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . . . 7 .
P5	. . . . .
P6	. . . . .
P7	. . . . .
P8	. . 3 . . . . .

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	1 8	. . . . .	. . . . .	. 2 3 . . . 7 .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	4	4	10	0	10	4	0
Flash Don't Walk	0	21	21	10	0	10	33	0
Minimum Green	4	16	8	10	4	10	8	8
Det Limit	0	0	0	10	0	20	0	0
Max Initial	0	30	0	10	0	0	0	0
Max Green 1	21	40	32	50	14	40	15	14
Max Green 2	50	50	50	50	50	50	10	8
Max Green 3	50	50	50	50	50	50	2	2
Extension	0.0	0.0	0.0	5.0	0.0	0.0	0.0	0.0
Maximum Gap	2.0	4.0	2.0	5.0	2.0	4.0	2.0	2.0
Minimum Gap	1.0	3.0	1.2	5.0	1.0	3.0	1.0	1.0
Add Per Vehicle	0.0	1.5	0.0	1.0	0.0	0.0	0.0	0.0
Reduce Gap By	0.1	0.1	0.1	0.0	0.1	0.1	0.1	0.1
Reduce Every	0.8	1.0	0.8	1.0	0.8	1.0	0.8	0.8
Yellow	3.6	4.5	4.1	5.0	3.6	4.5	3.7	3.7
All-Red	0.0	0.0	2.0	1.0	0.0	0.0	0.0	0.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	3	3	0	0	0	3	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	3.6	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor			.....											
Plan 2	Green Factor			.....											
Plan 3	Green Factor			.....											
Plan 4	Green Factor			.....											
Plan 5	Green Factor			.....											
Plan 6	Green Factor			.....											
Plan 7	Green Factor			.....											
Plan 8	Green Factor			.....											
Plan 9	Green Factor			.....											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	.....
Veh Min	Veh Max
. 2 . . . 6 . .	.....
Ped	Bike
.....	.....
Cond	Cond Grn
.....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	.....	.....	.....	.....	.....	.....	.....	.....
Plan 2	.....	.....	.....	.....	.....	.....	.....	.....
Plan 3	.....	.....	.....	.....	.....	.....	.....	.....
Plan 4	.....	.....	.....	.....	.....	.....	.....	.....
Plan 5	.....	.....	.....	.....	.....	.....	.....	.....
Plan 6	.....	.....	.....	.....	.....	.....	.....	.....
Plan 7	.....	.....	.....	.....	.....	.....	.....	.....
Plan 8	.....	.....	.....	.....	.....	.....	.....	.....
Plan 9	.....	.....	.....	.....	.....	.....	.....	.....

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Force-Off	180		.....	86			131		40		126		82	100
Plan 12	Force-Off	200		.....	86			134		42		129		84	103
Plan 13	Force-Off	220		.....	96			145		49		145		91	112
Plan 14	Force-Off	160		.....	78			118		33		118		75	97
Plan 15	Force-Off	180		.....	1			127		42		127		84	106
Plan 16	Force-Off	210		.....	34			146		54		146		96	120
Plan 17	Force-Off	180		.....	95			133		41		126		83	105
Plan 18	Force-Off	200		.....	96			142		49		136		91	113
Plan 19	Force-Off	220		.....	99			152		54		146		96	121

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 12	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 13	.2.4.6.8	.2...6..	..3.....	.....	.....	.....	.....	.....
Plan 14	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 15	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 16	.2.4.6.8	.2...6..	..3.....	.....	.....	.....	.....	.....
Plan 17	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 18	.2.4.6.8	.2...6..	..3.....	.....	.....	.....	.....	.....
Plan 19	.2.4.6.8	.2...6..	..3.....	.....	.....	.....	.....	.....

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Force-Off	180		.....	68			120		31		126		73	95
Plan 22	Force-Off	200		.....	77			127		31		130		73	96
Plan 23	Force-Off	220		.....	87			131		31		134		73	98
Plan 24	Force-Off	160		.....	124			113		31		113		73	95
Plan 25	Force-Off	180		.....	36			113		31		118		73	95
Plan 26	Force-Off	210		.....	202			114		31		122		73	96
Plan 27	Force-Off	180		.....	42			123		32		123		74	97
Plan 28	Force-Off	200		.....	36			126		34		126		76	99
Plan 29	Force-Off	220		.....	24			131		37		131		79	102

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 22	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 23	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 24	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 25	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 26	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 27	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 28	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 29	.2.4.6.8	.2...6..	.....	.....	.....	.....	.....	.....

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DETECTORS

Detector Attributes (5-1)

Det	Type	Phases	Lock	Slot
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . . . . 7 .	NO	I5U
10	COUNT+CALL+EXTEND	. . . . . 7 .	NO	I5L
11	COUNT+CALL+EXTEND	 8	NO	I6U
12	COUNT+CALL+EXTEND	 8	NO	I6L
13	COUNT+CALL+EXTEND	 8	NO	I7U
14	CALL+EXTEND	1	NO	I7L
15	CALL+EXTEND	 8	NO	I8U
16	COUNT+CALL+EXTEND	 8	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	. . . . . 7 .	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . 3	NO	J5U
30	COUNT+CALL+EXTEND	. . 3	NO	J5L
31	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J6U
32	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J6L
33	COUNT+CALL+EXTEND	. . 3	NO	J7U
34	CALL+EXTEND	. . 3	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . 3	NO	J9U
38	COUNT+CALL+EXTEND	. . 3	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . . . 7 .	NO	I12L
43	PEDESTRIAN	. . . . .	NO	I13U
44	PEDESTRIAN	. . 3	NO	I13L

Detector Configuration (5-2)

Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11		2.0	10	1.3
12		2.0	10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25		2.0	10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31		2.0	10	1.4
32		2.0	10	1.8
33		2.0	10	4.8
34		2.0	10	6.5
35			10	2.4
36			10	7.7
37		2.0	10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Nu								
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)	
Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1	600	1000	.MTWTFSS	. . .5 . .	. . . . . 7 8. . .
2	1000	1400	.MTWTFSS	. . .17 .	. . . . .7 . 8. .
3	1400	2100	.MTWTFSS	. . . .5 .	. . . . 7. . 8. .
4	2100	600	.MTWTFSS	. . .18	. . . . .7 . 8. .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)							
#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	172	.	22	.	8	.	146
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	254
Gateway	172	.	22	.	8	.	1

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RAILROAD PREEMPTION

RR 1

(3-1-1)	Timing
Delay	
Clear 1	10
Clear 2	
Clear 3	
Hold	
Exit	5
Min Grn	
Ped Clr	

Phase Flags (3-1-2)		
Grn Hold	Yel Flash	Red Flash
. 2 . . 5 . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	1 2 3 4 5 6 7 8

Pedestrian Flags (3-1-3)		
Walk	Flash DW	Solid DW
. . . . .	. . . . .	. 2 . 4 . 6 . 8
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .

Overlap Flags (3-1-4)		
Grn Hold	Yel Flash	Red Flash
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	A B C D E F

Exit Parameters (3-1-5)

Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)

PR 1	PR 2	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2

(3-2-1)	Timing
Delay	
Clear 1	10
Clear 2	
Clear 3	
Hold	
Exit	
Min Grn	
Ped Clr	

Phase Flags (3-2-2)		
Grn Hold	Yel Flash	Red Flash
. . . 4 . . 7 .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
1 2 3 . . 6 . .	. . . . .	. . . . .

Pedestrian Flags (3-2-3)		
Walk	Flash DW	Solid DW
. . . . .	. . . . .	. 2 . 4 . 6 . 8
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. 2 . . . 6 . .	. . . . .	. . . 4 . . . 8

Overlap Flags (3-2-4)		
Grn Hold	Yel Flash	Red Flash
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .

Exit Parameters (3-2-5)

Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	. . . 4 . . 7 .	. . . . .

Configuration (3-2-6)

PR 1	PR 2	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
5.8	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	11	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Force-Off											
Plan 12	Force-Off											
Plan 13	Force-Off											
Plan 14	Force-Off											
Plan 15	Force-Off											
Plan 16	Force-Off											
Plan 17	Force-Off											
Plan 18	Force-Off											
Plan 19	Force-Off											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	OPT	0	0
Plan 11-19	. . . . .	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

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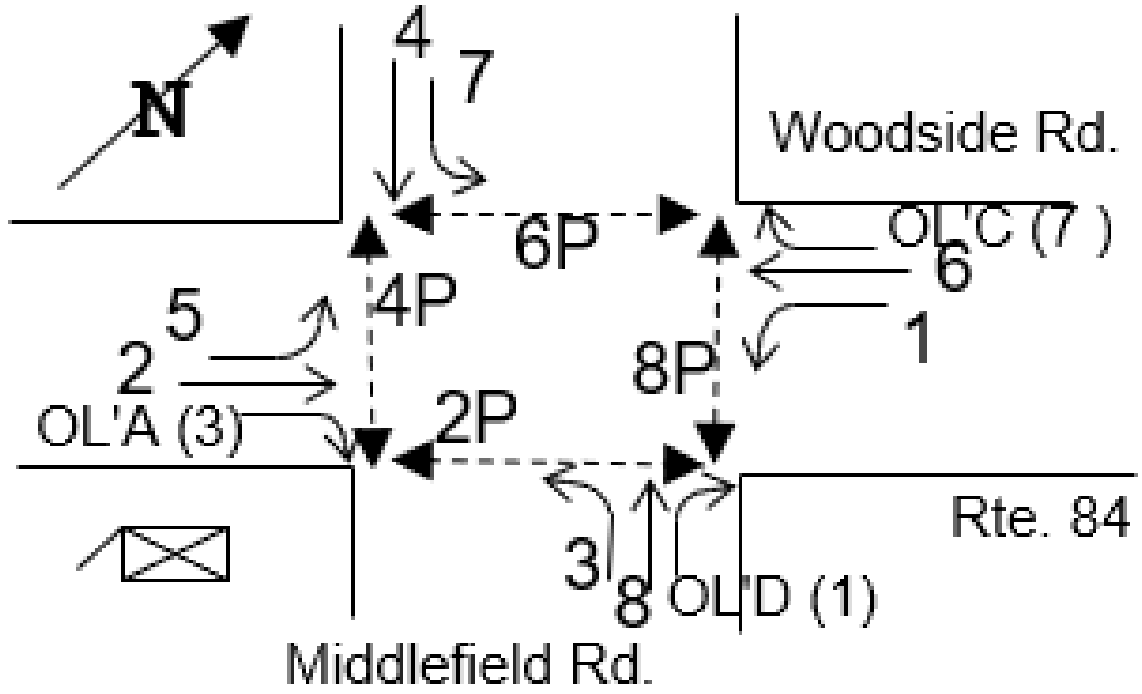
Location: MIDDLEFIELD RD. & WOODSIDE RD. (Rte.84)
System: **District:**
Master At: **I/C:**

Designed By:
Installed By:
Service Info:

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

		FLASH
PHASE	1)	[R]
	2)	[R]
	3)	[R]
	4)	[R]
	5)	[R]
	6)	[R]
	7)	[R]
	8)	[R]
OVERLAP	A)	[R]
	B)	[ ]
	C)	[R]
	D)	[R]
	E)	[ ]
	F)	[ ]

Intersection Layou



Comments and Notes:
TSCP 2.21 (BUILD 7a) - 11/03/2018
Connected to Central Systems Via Network Port thru Actellis ML684 (Port 4)
Flush Plans Implemented - 06/09/2016

RAM Checksum

Page 2: 71FD	Page 8: 85AF
Page 3: 759F	Page 9: 9B19
Page 4: F29E	Page 10: EBE2
Page 5: B8E8	Page 11: FDAC
Page 6: 1637	Page 12: D68F
Page 7: 7763	Page 13: 86F7

Post Mile: SM-084-25.058 Middlefield Rd.

Printed: 10/3/2019

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 3 4 5 6 7 8
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	1 2 3 4 5 6 7 8
Pedestrian Calls	. 2 . 4 . 6 . 8
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlap	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlap	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. . . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . 4 . . . .
P5	. . . . .
P6	. . . . . 6 . .
P7	. . . . .
P8	 8

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	7	0	7	0	7	0	7
Flash Don't Walk	0	20	0	25	0	20	0	25
Minimum Green	8	10	4	8	4	10	4	8
Det Limit	0	25	0	0	0	25	0	0
Max Initial	0	0	0	0	0	0	0	0
Max Green 1	8	45	23	20	11	45	18	20
Max Green 2	50	75	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	60	50	50
Extension	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Gap	2.0	3.0	2.0	2.0	2.0	3.0	2.0	2.0
Minimum Gap	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0
Add Per Vehicle	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reduce Gap By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Reduce Every	0.8	1.2	0.8	0.8	0.8	1.2	0.8	0.8
Yellow	3.2	4.5	3.2	3.7	3.2	4.5	3.2	3.7
All-Red	0.0	0.5	0.0	0.5	0.0	0.5	0.0	0.5
Ped/Bike (2-3)	**-1-**	**-2-**	**-3-**	**-4-**	**-5-**	**-6-**	**-7-**	**-8-**
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.6	5.0	3.6	3.6	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor			.....											
Plan 2	Green Factor			.....											
Plan 3	Green Factor			.....											
Plan 4	Green Factor			.....											
Plan 5	Green Factor			.....											
Plan 6	Green Factor			.....											
Plan 7	Green Factor			.....											
Plan 8	Green Factor			.....											
Plan 9	Green Factor			.....											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	.....
11-19	.....
21-29	.....

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	.....
Veh Min	Veh Max
. 2 . . . 6 . .	.....
Ped	Bike
.....	.....
Cond	Cond Grn
.....	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	.....	.....	.....	.....	.....	.....	.....	.....
Plan 2	.....	.....	.....	.....	.....	.....	.....	.....
Plan 3	.....	.....	.....	.....	.....	.....	.....	.....
Plan 4	.....	.....	.....	.....	.....	.....	.....	.....
Plan 5	.....	.....	.....	.....	.....	.....	.....	.....
Plan 6	.....	.....	.....	.....	.....	.....	.....	.....
Plan 7	.....	.....	.....	.....	.....	.....	.....	.....
Plan 8	.....	.....	.....	.....	.....	.....	.....	.....
Plan 9	.....	.....	.....	.....	.....	.....	.....	.....

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-29
254 = Flash
255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor	180		.....				26	79	25	31	13	89		
Plan 12	Green Factor	200		.....				27	92	26	36	14	102		
Plan 13	Green Factor	220		.....				35	98	27	41	14	116		
Plan 14	Green Factor	160		.....				27	60	23	31	13	71		
Plan 15	Green Factor	180		.....	90			33	59	31	38	14	75		
Plan 16	Green Factor	210		.....	132			43	75	32	41	15	100		
Plan 17	Green Factor	180		.....				32	69	26	34	16	82		
Plan 18	Green Factor	200		.....				37	80	27	37	17	97		
Plan 19	Green Factor	220		.....				42	89	29	41	18	110		

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 12	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 13	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 14	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 15	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 16	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 17	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 18	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....
Plan 19	.2.45..8	.2...6..	1.....	.....	.....	.....	.....	.....

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor	180		.....				17	89	23	32	14	89		
Plan 22	Green Factor	200		.....				15	93	27	46	15	90		
Plan 23	Green Factor	220		.....				17	96	27	61	15	95		
Plan 24	Green Factor	160		.....	36			19	54	22	46	14	56		
Plan 25	Green Factor	180		.....	117			20	62	23	56	14	65		
Plan 26	Green Factor	210		.....	90			23	77	25	66	15	82		
Plan 27	Green Factor	180		.....	142			20	79	26	36	15	81		
Plan 28	Green Factor	200		.....	124			22	83	30	46	16	86		
Plan 29	Green Factor	220		.....	136			23	86	31	61	20	86		

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 22	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 23	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 24	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 25	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 26	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 27	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 28	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....
Plan 29	.2.45..8	.2...6..	.....	.....	.....	.....	.....	.....

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DETECTORS

Detector Attributes (5-1)				Slot
Det	Type	Phases	Lock	
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	LIMITED	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	1	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	. . 3	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	NO	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . 3	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . 4 . . .	NO	I12L
43	PEDESTRIAN	. . . . . 6 . .	NO	I13U
44	PEDESTRIAN	 8	NO	I13L

Detector Configuration (5-2)				
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Nu								
Sys Det	9	10	11	12	13	14	15	16
Det Nu								

CIC Operation (5-6-1)	
Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1	0700	1000	M T W T F S S	17	. 2 . . . . .
2	1645	1900	M T W T F S S	18	. . . . . 6 . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

C2 (6-1-1)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C20 (6-1-2)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

C21 (6-1-3)	
Address	
Protocol	AB3418
Access Level	0
Baud	1200
Parity	NONE
Data Bits	8
Stop Bits	1
RTS On Time	20
RTS Off Time	20
Handshaking	NORMAL

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)	
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)	
Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	10	.	20	.	70	.	51
Netmask	255	.	255	.	255	.	0
Broadcast	10	.	20	.	70	.	255
Gateway	10	.	20	.	70	.	254

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RAILROAD PREEMPTION

RR 1

(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Clear 1	10	. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . . .	. . . . . .	. . . . . .
Clear 2		. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . . .	. . . . . .	. . . . . .
Clear 3		. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . . .	. . . . . .	. . . . . .
Hold		. . . .	. . . .	1 2 3 4 5 6 7 8	. . . .	. . . .	. . . .	. . . . . .	. . . . . .	A B C D E F
Exit	5									
Min Grn										
Ped Clr										

Exit Parameters (3-1-5)			
Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . .	. . . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)			
PR 1	PR 2	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2

(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Clear 1	10	. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . . .	. . . . . .	. . . . . .
Clear 2		. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . . .	. . . . . .	. . . . . .
Clear 3		. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . . .	. . . . . .	. . . . . .
Hold		1 2 3 . . 6 . .	. . . .	. . . .	. 2 . . . 6 . .	. . . .	. . . 4 . . . 8	. . . . . .	. . . . . .	. . . . . .
Exit										
Min Grn										
Ped Clr										

Exit Parameters (3-2-5)			
Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . .	. . . . . .	. . . 4 . . 7 .	. . . .

Configuration (3-2-6)			
PR 1	PR 2	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . . .

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . . .

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . . .

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . . .

Port	Latching	Phase Termination
5.8	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

\+ middle output of loadswitches 3 and 6 Channel 9 and 10

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	NONE	0	0
Plan 11-19	. . . . .	0.0	NONE	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

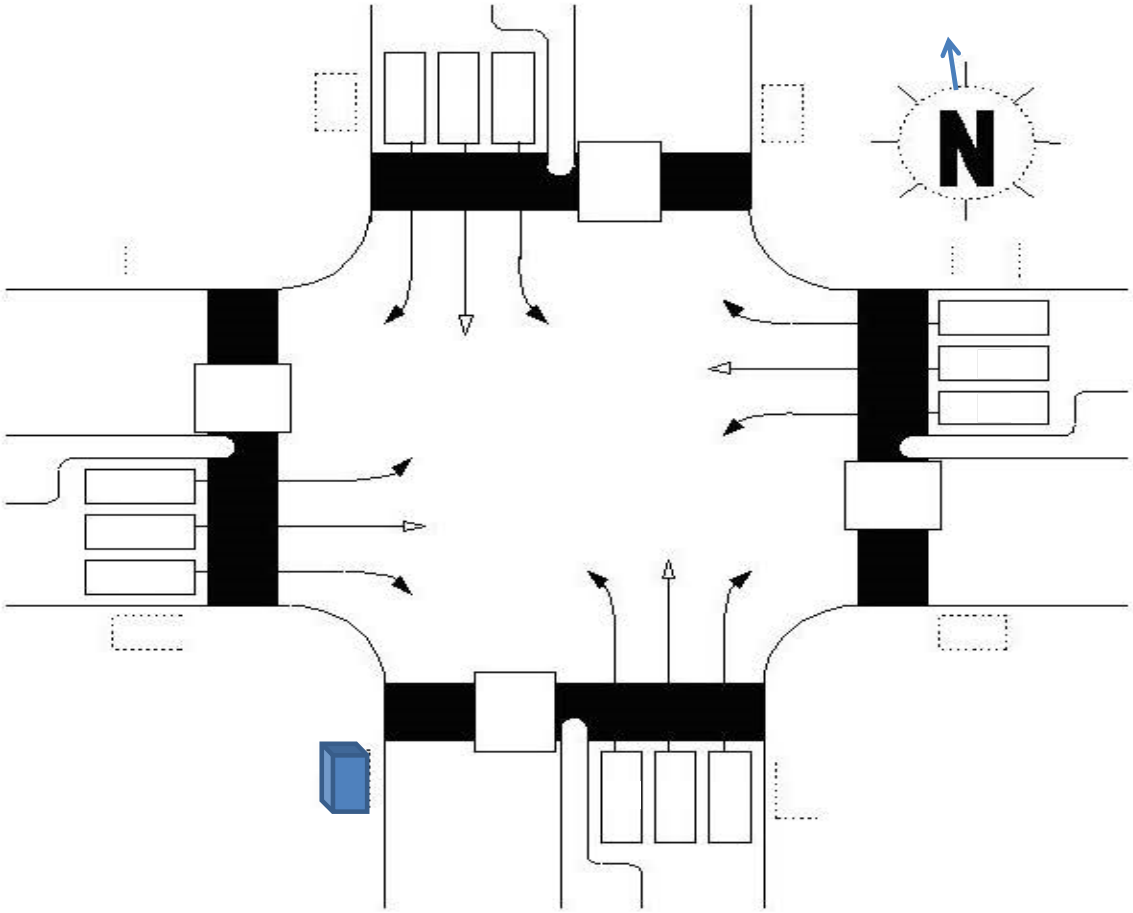
Program Reference Card

ASC/3 Program Reference Card

Intersection: Veterans Blvd / Maple Street

Controller Number: 02-03 Entered By: PD Date: 2/8/2024

Boot: _____ Main: _____ Help: _____ Database: _____



Configuration Submenu

MM-1-1-1 Phase Ring Assignment (PRI = Priority)

Sequence 1

	CONFIGURE UTILITY										HW ALTERNATE SEQUENCE ENABLE						
PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	
BC		x															
R1	1	2	4														
R2	5	6															
R3																	
R4																	

Sequence 2

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 3

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 4

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 5

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 6

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 7

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 8

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

- *Appendix D*

Sequence 9

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 10

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 11

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 12

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 13

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 14

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 15

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

Sequence 16

PRI	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
BC																
R1																
R2																
R3																
R4																

- *Appendix D*

MM-1-1-2 Phase Compatibility

PHASE 02	16	15	14	13	12	11	10	09	08	07	06	05	04	03
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														

MM-1-2 Phases In Use / Exclusive Ped

PHASE	01	02	03	04	05	06	07	08
PHASES IN USE	X	X		X	X	X		
EXCLUSIVE PED								
PHASE	**09**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
PHASES IN USE								
EXCLUSIVE PED								

MM-1-1-3 Enable Backup Prevent

TMG\BKUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	■															
2		■														
3			■													
4				■												
5					■											
6						■										
7							■									
8								■								
9									■							
10										■						
11											■					
12												■				
13													■			
14														■		
15															■	
16																■

MM-1-1-4 Simultaneous Gap

GAP\PH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	■															
2		■														
3			■													
4				■												
5					■											
6						■										
7							■									
8								■								
9									■							
10										■						
11											■					
12												■				
13													■			
14														■		
15															■	
16																■
DISABLE																

- *Appendix D*

MM-1-3 Phase-to-Load-Switch (MMU) Assignment

LOAD SWITCH	PHASE/ OVERLAP TYPE 1-16	(V,P,O)	DIMMING				AUTOMATIC FLASH		
			RED	YELLOW	GREEN	DIMMING PHASE (+,-)	RED	YELLOW FLASH	TOGETHER
1	1	V				+	A	R	
2	2	V				+	A	R	X
3	3					+	A	R	
4	4	V				+	A	R	X
5	5	V				-	A	R	
6	6	V				-	A	R	X
7	7	V				-	A	R	
8	8	V				-	A	R	X
9	2	P				+	A		
10	4	P				+	A		
11	6	P				-	A		
12	8	P				-	A		
13	1	0				+	A	R	
14	2	0				-	A	R	X
15	3	0				+	A	R	
16	4	0				-	A	R	X

MM-1-4-1 SDLC Options

	BIU NUMBER							
TERM & FACILITY	1	2	3	4	5	6	7	8
ENABLE								
DETECTOR RACK	1	2	3	4	5	6	7	8
ENABLE								
ENABLE TS2 /MMU TYPE CABINET								NO
ENABLE MMU EXTENDED STATUS								NO
ENABLE SDLC STOP TIME								NO
ENABLE 3 CRITICAL RFEs LOCKUP								YES
MMU TO CU SDLC EXTERNAL START								ENABLE

MM-1-4-2 MMU Program

MMU COMPATIBILITY															
CH 2	16	15	14	13	12	11	10	9	8	7	6	5	4	3	
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

MM-1-4-3 Color Check Enable

ENABLE COLOR CHECK DIAGNOSTICS																
MMU Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
RED / DW	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
YELLOW / PC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
GREEN / WALK	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

MM-1-4-4 Secondary Stations/Tests

SECONDARY TO SECONDARY ADDRESSING									
T&F	01	02	03	04	05	06	07	08	MMU
D/R	09	10	11	12	13	14	15	16	DIAG
ENABLE SDLC DIAGNOSTIC TEST								NO	

- *Appendix D*

MM-1-5-1 Ethernet Port Configuration

MAC ADDRESS	00	04	81	02	B2	7F
CONTROLLER IP			172	22	168	205
SUBNET MASK			255	255	255	0
DEFAULT GATEWAY IP			173	22	168	2
SERVER IP			0	0	0	0
LINK SPEED / DUPLEX						AUTO
DROP-OUT TIME						300

MM-1-5-2 ASC/3 Port 2 – 2070 C50S

ENABLE (YES/NO)	NO	**PROTOCOL**	NTCIP
BIT RATE	1200	**ADDRESS**	1
DATA BITS/PARITY/STOP BITS	8/N/1	**GROUP ADDRESS / TDR**	0
DUPLEX (HALF/FULL)	FULL	**SIGNAL FLAGGED (YES/NO)**	NO
FLOW CONTROL (YES/NO)	YES	**DROP-OUT TIME**	60
INTERSECTION MONITOR			
MODEM SETUP STRING			
USER STRING			

MM-1-5-3 ASC/3 Port 3A – 2070 C21S

ENABLE (YES/NO)	NO	**PROTOCOL**	NTCIP
BIT RATE	1200	**ADDRESS**	3
DATA BITS/PARITY/STOP BITS	8/N/1	**GROUP ADDRESS / TDR**	0
DUPLEX (HALF/ FULL)	FULL	**SIGNAL FLAGGED (YES/NO)**	NO
FLOW CONTROL (YES/NO)	YES	**DROP-OUT TIME**	60

MM-1-5-4 ASC/3 Port 3B – 2070 C22S

ENABLE (YES/NO)	NO	**PROTOCOL**	NTCIP
BIT RATE	1200	**ADDRESS**	3
DATA BITS/PARITY/STOP BITS	8/N/1	**GROUP ADDRESS / TDR**	0
DUPLEX (HALF/ FULL)	FULL	**SIGNAL FLAGGED (YES/NO)**	NO
FLOW CONTROL (YES/NO)	YES	**DROP-OUT TIME**	60
RTS-CTS DELAY	0.0		
RTS TURN OFF	0.0		
EARLY RTS	NO		

MM-1-5-5 Global Port Parameters

NTCIP BACKUP TIME (SECONDS)	0
UDP PORT	501
ETHERNET PRIORITY	1
PORT 2/C50S PRIORITY	4
PORT 3A/C21S PRIORITY	3
PORT 3B/C22S PRIORITY	2

MM-1-5-6 ECPIP

CONTROLLER ADDRESS								0	
EXPANDED SYSTEM DETECTOR ADDRESS								0	
SYSTEM DETECTOR ASSIGNMENT:									
SYSTEM DET	1	2	3	4	5	6	7	8	
LOCAL DET	0	0	0	0	0	0	0	0	0
SYSTEM DET	9	10	11	12	13	14	15	16	
LOCAL DET	0	0	0	0	0	0	0	0	0

MM-1-6-1 Enable Event Logs

CRITICAL RFE'S (MMU/T&F)	YES	3 CRITICAL RFE ERRORS IN 24 HOURS	YES
MMU FLASH FAULTS	YES	LOCAL FLASH FAULTS	YES
NON-CRITICAL RFE'S	YES	DETECTOR ERRORS	YES
COORDINATION ERRORS	YES	CONTROLLER DOWNLOAD	YES
PREEMPT	YES	TSP/SCP	YES
POWER ON/OFF	YES	LOW BATTERY	YES
ACCESS	YES	DATA CHANGE	YES
ONLINE/OFFLINE	YES		
ALARM 1	YES	ALARM 2	YES
ALARM 3	YES	ALARM 4	YES
ALARM 5	YES	ALARM 6	YES
ALARM 7	YES	ALARM 8	YES
ALARM 9	YES	ALARM 10	YES
ALARM 11	YES	ALARM 12	YES
ALARM 13	YES	ALARM 14	YES
ALARM 15	YES	ALARM 16	YES

- *Appendix D*

MM-1-7-1 Administration

ENABLE CU/CABINET INTERLOCK CRC	NO
CU/CABINET INTERLOCK CRC VALUE	0000
CU/CABINET INTERLOCK HW VALUE	0000
REQUEST DOWNLOAD OF PROGRAMMED DATA	NO
CONTROLLER DATA SUMCHECK (CRC) #	699A
ENABLE AUTOMATIC BACKUP TO DATAKEY	NO

MM-1-7-2 Display Options

KEY CLICK ENABLE	YES
BACKLIGHT ENABLE	YES
LED MODE	AUTO
MAIN STATUS DISPLAY MODE	ADVANCED
SCREEN FORMAT	

MM-1-8-1 Logic Statement Control

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 01-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

MM-1-8-2 Logic Processor Statements

LOGIC GATE NUMBER				1
IF				
THEN				
ELSE				
LOGIC GATE NUMBER				2
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				3
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				4
IF				
THEN				
ELSE				

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LOGIC GATE NUMBER				
IF				
THEN				
ELSE				
LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				
LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				
LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

LOGIC GATE NUMBER				
IF				
THEN				
ELSE				
LOGIC GATE NUMBER				
IF				
THEN				
ELSE				

Controller Submenu

MM-2-1 Controller Timing Data, sheet 1 of 2

TIMING PLAN 1																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN	9	7		11	9	7										
BICYCLE MINIMUM GREEN	9	7		11	9	7										
CONDITIONAL SERVICE MIN. GREEN																
DELAYED GREEN																
WALK		7		7		7										
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE		23		35		21										
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION	2.0	2.0		2.5	2.0	2.0										
VEHICLE EXTENSION 2																
MAX1	30	40		38	20	40										
MAX2	30	40		38	20	40										
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE	4.2	4.2		4.0	4.2	4.2										
RED CLEARANCE	1.0	1.0		1.0	1.0	1.0										
RED MAX																
RED REVERT	2	2		2	2	2										
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

MM-2-1 Controller Timing Data, sheet 2 of 2

TIMING PLAN _____																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MINIMUM GREEN																
BICYCLE MINIMUM GREEN																
CONDITIONAL SERVICE MIN. GREEN																
DELAYED GREEN																
WALK																
WALK 2																
WALK MAX																
PEDESTRIAN CLEARANCE																
PEDESTRIAN CLEARANCE 2																
PEDESTRIAN CLEARANCE MAX																
PEDESTRIAN CARRY OVER																
VEHICLE EXTENSION																
VEHICLE EXTENSION 2																
MAX1																
MAX2																
MAX3																
DYNAMIC MAX																
DYNAMIC MAX STEP																
YELLOW CHANGE																
RED CLEARANCE																
RED MAX																
RED REVERT																
ACTUATIONS BEFORE GAP REDUCTION																
SECONDS PER ACTIONS ADDED TO INITIAL																
MAXIMUM ADDED INITIAL GREEN																
TIME BEFORE GAP REDUCTION																
CARS WAITING BEFORE GAP REDUCTION																
STEP TO REDUCE																
TIME TO REDUCE TO MINIMUM																
MINIMUM GAP																

MM-2-2 Vehicle Overlaps, sheet 1 of 6

Other/Econolite Overlap

TIMING VEHICLE OVERLAP (A-P)					A											
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
PROTECT																
PED PRTC																
NO OVLP																
FLSH GRN																
LAG X PH																
LAG 2 PH																
LAG GRN			LAG YEL				LAG RED				ADV GRN					

Normal Overlap (NTCIP)

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
LAG GRN			LAG YEL				LAG RED									

-GRN/YEL Overlap (NTCIP)

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
MODIFIER																

PPLT FYA Overlap

TIMING VEHICLE OVERLAP (A-P)		PPLT FYA=Protected Permissive Left Turn Flashing Yellow Arrow
PROTECTED PHASE (LEFT TURN), 0-16		
PERMISSIVE PHASE (OPPOSING THRU), 0-16		
FLASHING ARROW OUTPUT ISOLATE		
FLASHING ARROW OUTPUT YELLOW PED		
FLASHING ARROW OUTPUT GREEN OVERLAP		
DELAY START OF FYA (0.0-25.5 sec.)		
DELAY START OF CLEARANCE (0.0-25.5 sec.)		
ACTION PLAN SPECIAL FUNCTION BIT DISABLE (0-8)		

MM-2-2 Vehicle Overlaps, sheet 2 of 6

Other/Econolite Overlap

Normal Overlap (NTCIP)

-GRN/YEL Overlap (NTCIP)

PPLT FYA Overlap

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
PROTECT																
PED PRTC																
NO OVLP																
FLSH GRN																
LAG X PH																
LAG 2 PH																
LAG GRN			LAG YEL				LAG RED				ADV GRN					

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
LAG GRN			LAG YEL				LAG RED									

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
MODIFIER																

TIMING VEHICLE OVERLAP (A-P)	
PROTECTED PHASE (LEFT TURN), 0-16	
PERMISSIVE PHASE (OPPOSING THRU), 0-16	
FLASHING ARROW OUTPUT ISOLATE	
FLASHING ARROW OUTPUT YELLOW PED	
FLASHING ARROW OUTPUT GREEN OVERLAP	
DELAY START OF FYA (0.0-25.5 sec.)	
DELAY START OF CLEARANCE (0.0-25.5 sec.)	
ACTION PLAN SPECIAL FUNCTION BIT DISABLE (0-8)	

PPLT FYA=Protected Permissive Left Turn Flashing Yellow Arrow

MM-2-2 Vehicle Overlaps, sheet 3 of 6

Other/Econolite Overlap

Normal Overlap (NTCIP)

-GRN/YEL Overlap (NTCIP)

PPLT FYA Overlap

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
PROTECT																
PED PRTC																
NO OVLP																
FLSH GRN																
LAG X PH																
LAG 2 PH																
LAG GRN			LAG YEL				LAG RED				ADV GRN					

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
LAG GRN			LAG YEL				LAG RED									

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
MODIFIER																

TIMING VEHICLE OVERLAP (A-P)	
PROTECTED PHASE (LEFT TURN), 0-16	
PERMISSIVE PHASE (OPPOSING THRU), 0-16	
FLASHING ARROW OUTPUT ISOLATE	
FLASHING ARROW OUTPUT YELLOW PED	
FLASHING ARROW OUTPUT GREEN OVERLAP	
DELAY START OF FYA (0.0-25.5 sec.)	
DELAY START OF CLEARANCE (0.0-25.5 sec.)	
ACTION PLAN SPECIAL FUNCTION BIT DISABLE (0-8)	

PPLT FYA=Protected Permissive Left Turn Flashing Yellow Arrow

MM-2-2 Vehicle Overlaps, sheet 4 of 6

Other/Econolite Overlap

Normal Overlap (NTCIP)

-GRN/YEL Overlap (NTCIP)

PPLT FYA Overlap

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
PROTECT																
PED PRTC																
NO OVLP																
FLSH GRN																
LAG X PH																
LAG 2 PH																
LAG GRN			LAG YEL				LAG RED				ADV GRN					

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
LAG GRN			LAG YEL				LAG RED									

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
MODIFIER																

TIMING VEHICLE OVERLAP (A-P)	
PROTECTED PHASE (LEFT TURN), 0-16	
PERMISSIVE PHASE (OPPOSING THRU), 0-16	
FLASHING ARROW OUTPUT ISOLATE	
FLASHING ARROW OUTPUT YELLOW PED	
FLASHING ARROW OUTPUT GREEN OVERLAP	
DELAY START OF FYA (0.0-25.5 sec.)	
DELAY START OF CLEARANCE (0.0-25.5 sec.)	
ACTION PLAN SPECIAL FUNCTION BIT DISABLE (0-8)	

PPLT FYA=Protected Permissive Left Turn Flashing Yellow Arrow

MM-2-2 Vehicle Overlaps, sheet 5 of 6

Other/Econolite Overlap

Normal Overlap (NTCIP)

-GRN/YEL Overlap (NTCIP)

PPLT FYA Overlap

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
PROTECT																
PED PRTC																
NO OVLP																
FLSH GRN																
LAG X PH																
LAG 2 PH																
LAG GRN			LAG YEL				LAG RED				ADV GRN					

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
LAG GRN			LAG YEL				LAG RED									

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
MODIFIER																

TIMING VEHICLE OVERLAP (A-P)	
PROTECTED PHASE (LEFT TURN), 0-16	
PERMISSIVE PHASE (OPPOSING THRU), 0-16	
FLASHING ARROW OUTPUT ISOLATE	
FLASHING ARROW OUTPUT YELLOW PED	
FLASHING ARROW OUTPUT GREEN OVERLAP	
DELAY START OF FYA (0.0-25.5 sec.)	
DELAY START OF CLEARANCE (0.0-25.5 sec.)	
ACTION PLAN SPECIAL FUNCTION BIT DISABLE (0-8)	

PPLT FYA=Protected Permissive Left Turn Flashing Yellow Arrow

MM-2-2 Vehicle Overlaps, sheet 6 of 6

Other/Econolite Overlap

Normal Overlap (NTCIP)

-GRN/YEL Overlap (NTCIP)

PPLT FYA Overlap

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
PROTECT																
PED PRTC																
NO OVLP																
FLSH GRN																
LAG X PH																
LAG 2 PH																
LAG GRN			LAG YEL				LAG RED				ADV GRN					

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
LAG GRN			LAG YEL				LAG RED									

TIMING VEHICLE OVERLAP (A-P)																
PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
INCLUDED																
MODIFIER																

TIMING VEHICLE OVERLAP (A-P)	
PROTECTED PHASE (LEFT TURN), 0-16	
PERMISSIVE PHASE (OPPOSING THRU), 0-16	
FLASHING ARROW OUTPUT ISOLATE	
FLASHING ARROW OUTPUT YELLOW PED	
FLASHING ARROW OUTPUT GREEN OVERLAP	
DELAY START OF FYA (0.0-25.5 sec.)	
DELAY START OF CLEARANCE (0.0-25.5 sec.)	
ACTION PLAN SPECIAL FUNCTION BIT DISABLE (0-8)	

PPLT FYA=Protected Permissive Left Turn Flashing Yellow Arrow

- *Appendix D*

MM-2-3 Veh/Ped Overlaps

VEH OL/PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
VEH OVERLAP A																
VEH OVERLAP B																
VEH OVERLAP C																
VEH OVERLAP D																
VEH OVERLAP E																
VEH OVERLAP F																
VEH OVERLAP G																
VEH OVERLAP H																
VEH OVERLAP I																
VEH OVERLAP J																
VEH OVERLAP K																
VEH OVERLAP L																
VEH OVERLAP M																
VEH OVERLAP N																
VEH OVERLAP O																
VEH OVERLAP P																
PED OL/PHASES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
PED OVERLAP 1																
PED OVERLAP 2																
PED OVERLAP 3																
PED OVERLAP 4																
PED OVERLAP 5																
PED OVERLAP 6																
PED OVERLAP 7																
PED OVERLAP 8																
PED OVERLAP 9																
PED OVERLAP 10																
PED OVERLAP 11																
PED OVERLAP 12																
PED OVERLAP 13																
PED OVERLAP 14																
PED OVERLAP 15																
PED OVERLAP 16																

MM-2-4 Guaranteed Minimum Times

OL/PHASE	A01	B02	C03	D04	E05	F06	G07	H08
MIN GRN	5	5		5	5	5		
WALK								
PED CLR	7	7	7	7	7	7	7	7
YELLOW	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
RED CLR								
OVL GRN	5	5	5	5	5	5	5	5
OL/PHASE	**I09**	**J10**	**K11**	**L12**	**M13**	**N14**	**O15**	**P16**
MIN GRN	5	5	5	5	5	5	5	5
WALK								
PED CLR	7	7	7	7	7	7	7	7
YELLOW	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
RED CLR								
OVL GRN	5	5	5	5	5	5	5	5

MM-2-5 Start/Flash Data

START UP																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHASE		G				G										
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
OVERLAP	X	X	X	X												
FLASH>MON.	NO			FLASH TIME			0			ALL RED TIME			9			
PWR START SEQ.	1			MUTCD			NO			Y->G						

AUTOMATIC FLASH																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENTRY		X				X										
EXIT		X				X										
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EXIT	X	X	X	X												
FLASH>MON.	NO			EXIT FLASH			W			MIN FLASH			9			
MINIMUM RECALL	NO									CYCLE THROUGH PHASES					NO	

- *Appendix D*

MM-2-6-1 Controller Options

PEDESTRIAN CLEARANCE PROTECT											UNIT RED REVERT				2.0	
MUTCD 3 SECONDS DONT WALK															NO	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FLASHING GRN PH																
GUAR PASSAGE																
NON-ACT I																
NON ACT II																
DUAL ENTRY		X				X										
COND SERVICE																
COND RESERVICE																
PED RESERVICE																
REST IN WALK																
FLASHING WALK																
PED CLEAR > YELLOW																
PED CLEAR > ALL RED																
INIT GRN + VEH EXT																

MM-2-7 Pre-Timed Mode

ENABLE PRE-TIMED OPERATION			NO													
FREE INPUT ENABLES PRE-TIMED			YES													
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRETIMED																

MM-2-8 Phase Recall Options

TIMING PLAN NUMBER [1]																
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
LOCK DET INPUT																
VEH RECALL																
PED RECALL																
MAX TIME RECALL																
SOFT RECALL		X				X										
NO REST IN PHASE																
ADDED INIT CALC																
TIMING PLAN NUMBER [2]																
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
LOCK DET INPUT																
VEH RECALL																
PED RECALL																
MAX TIME RECALL																
SOFT RECALL																
NO REST IN PHASE																
ADDED INIT CALC																
TIMING PLAN NUMBER [3]																
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
LOCK DET INPUT																
VEH RECALL																
PED RECALL																
MAX TIME RECALL																
SOFT RECALL																
NO REST IN PHASE																
ADDED INIT CALC																
TIMING PLAN NUMBER [4]																
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
LOCK DET INPUT																
VEH RECALL																
PED RECALL																
MAX TIME RECALL																
SOFT RECALL																
NO REST IN PHASE																
ADDED INIT CALC																

Coordinator Submenu

MM-3-1 Coordinator Options

COORD OPTIONS			
MANUAL PATTERN	AUTO	ECPI COORD	YES
SYSTEM SOURCE	TBC	SYSTEM FORMAT	STD
SPLITS IN	SEC	OFFSET IN	SFC
TRANSITION	SMOOTH	MAX SELECT	MAXINI
DWELL/ADD TIME	0	ENABLE MAN SYNC	NO
DLY COORD WK-LZ	NO	FORCE OFF	FLOAT
OFFSET REF	LEAD	CAL USE PED TM	YES
PED RECALL	NO	PED RESERVE	NO
LOCAL ZERO OVRD	NO	FO ADD INI GRN	NO
RE-SYNC COUNT	0	MULTISYNC	NO

MM-3-2 Coordinator Pattern, sheet 1 of 3

COORDINATOR PATTERN	1
USE SPLIT PATTERN	1
TS2 PATTERN / OFFSET	0-1
CYCLE	116
OFFSET VAL	100
ACTUATED COORD	YES
ACT WALK REST	NO
PHASE RESERVICE	NO
MAX SELECT	NONE

STD (COS)	111
DWELL/ADD TIME	0
TIMING PLAN	0
SEQUENCE	5 (C)
ACTION PLAN	1
FORCE OFF	NONE

SPLIT PREFERENCE PHASES

PHASE	1	2	3	4	5	6	7	8
SPLIT PATTERN	33	36		47	14	55		
PREF 1								
PREF 2								
SPLT EXT								
VEH PERM								
RING DISP								

DISP (RINGS 2-4)

SPLIT PREFERENCE PHASES

PHASE	9	10	11	12	13	14	15	16
SPLIT PATTERN								
PREF 1								
PREF 2								

SPLIT DEMAND PATTERN (1 or 2)

X ARTERY PATTERN

PHASE	1	3	4	5	6	7	8	9	11	12	13	14	15	16
COORD	X				X									
VE RCALL														
PD RCALL														
MX RCALL														
OMIT														
SF OUT														

(1-8)

MM-3-2 Coordinator Pattern, sheet 2 of 3

COORDINATOR PATTERN	2
USE SPLIT PATTERN	2
TS2 PATTERN / OFFSET	0-2
CYCLE	116
OFFSET VAL	64
ACTUATED COORD	YES
ACT WALK REST	NO
PHASE RESERVICE	NO
MAX SELECT	NONE

STD (COS)	121
DWELL/ADD TIME	0
TIMING PLAN	0
SEQUENCE	5 (C)
ACTION PLAN	2
FORCE OFF	FLOAT

SPLIT PREFERENCE PHASES

PHASE	1	2	3	4	5	6	7	8
SPLIT PATTERN	30	39		47	18	51		
PREF 1								
PREF 2								
SPLT EXT								
VEH PERM								
RING DISP								

DISP (RINGS 2-4)

SPLIT PREFERENCE PHASES

PHASE	9	10	11	12	13	14	15	16
SPLIT PATTERN								
PREF 1								
PREF 2								

SPLIT DEMAND PATTERN (1 or 2)

X ARTERY PATTERN

PHASE	1	3	4	5	6	7	8	9	11	12	13	14	15	16
COORD	X				X									
VE RCALL														
PD RCALL														
MX RCALL														
OMIT														
SF OUT														

(1-8)

MM-3-2 Coordinator Pattern, sheet 3 of 3

COORDINATOR PATTERN	3
USE SPLIT PATTERN	3
TS2 PATTERN / OFFSET	0-3
CYCLE	125
OFFSET VAL	23
ACTUATED COORD	YES
ACT WALK REST	NO
PHASE RESERVICE	NO
MAX SELECT	NONE

STD (COS)	131
DWELL/ADD TIME	0
TIMING PLAN	0
SEQUENCE	0
ACTION PLAN	0
FORCE OFF	NONE

SPLIT PREFERENCE PHASES

PHASE	1	2	3	4	5	6	7	8
SPLIT PATTERN	32	46		47	18	60		
PREF 1								
PREF 2								
SPLT EXT								
VEH PERM								
RING DISP								

DISP

(RINGS 2-4)

SPLIT PREFERENCE PHASES

PHASE	9	10	11	12	13	14	15	16
SPLIT PATTERN								
PREF 1								
PREF 2								

SPLIT DEMAND PATTERN (1 or 2)

X ARTERY PATTERN

PHASE	1	3	4	5	6	7	8	9	11	12	13	14	15	16
COORD	X				X									
VE RCALL														
PD RCALL														
MX RCALL														
OMIT														
SF OUT														

(1-8)

MM-3-3 Split Pattern, sheet 1 of 4

SPLIT PATTERN NUMBER	1														
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**							
SPLIT	33	36		47	14	55									
PHASE	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**							
SPLIT															
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
COORD		X				X										
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																
SPLIT PATTERN NUMBER	2														
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**							
SPLIT	30	39		47	18	51									
PHASE	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**							
SPLIT															
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
COORD		X				X										
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																

MM-3-3 Split Pattern, sheet 2 of 4

SPLIT PATTERN NUMBER	3														
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**							
SPLIT	32	46		47	18	60									
PHASE	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**							
SPLIT															
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
COORD		X				X										
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																
SPLIT PATTERN NUMBER															
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**							
SPLIT															
PHASE	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**							
SPLIT															
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
COORD																
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																

MM-3-3 Split Pattern, sheet 3 of 4

SPLIT PATTERN NUMBER																
PHASE		1		2		3		4		5		6		7		8
SPLIT																
PHASE		9		10		11		12		13		14		15		16
SPLIT																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COORD																
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																
SPLIT PATTERN NUMBER																
PHASE		1		2		3		4		5		6		7		8
SPLIT																
PHASE		9		10		11		12		13		14		15		16
SPLIT																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COORD																
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																

MM-3-3 Split Pattern, sheet 4 of 4

SPLIT PATTERN NUMBER																
PHASE		1		2		3		4		5		6		7		8
SPLIT																
PHASE		9		10		11		12		13		14		15		16
SPLIT																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COORD																
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																
SPLIT PATTERN NUMBER																
PHASE		1		2		3		4		5		6		7		8
SPLIT																
PHASE		9		10		11		12		13		14		15		16
SPLIT																
PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
COORD																
VEH RECALL																
PED RECALL																
MAX RECALL																
OMIT																

MM-3-4 Auto Permissive Minimum Green Time

PHASE	1	2	3	4	5	6	7	8
MIN GRN								
PHASE	9	10	11	12	13	14	15	16
MIN GRN								

MM-3-5 Split Demand

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DEMAND 1																
DEMAND 2																

DEMAND	1	2
DETECTOR		
CALL TIME (SEC)		
CYCLE COUNT		

Preemptor Submenu

MM-4-1 Preemptor, sheet 1 of 6

PREEMPTOR NUMBER	1															
VEH/PED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	
TRACKCLR V																
TRACKCLR O																
ENA TRL																
DWEL VEH																
DWEL PED																
DWEL OLP																
CYC VEH																
CYC PED																
CYC OLP																
EXIT PH																
EXIT CAL																
SP FUNC																

ENABLE	NO	PREEMPTION OVERRIDE		INTERLOCK ENABLE	NO
NON-LOCK INPUT	X	DELAY TIME (SECONDS)	0	INHIBIT TIME (SECONDS)	0
AUTOMATIC FLASH HAS PRIORITY	X	DURATION TIME (SECONDS)	0	RED CLEAR GOES GREEN	NO
TERMINATE OVERLAPS ASAP	NO	PED CLEAR THRU YELLOW	NO	TERM PH	NO
PED DARK	NO	TRACK CLEARANCE RESERVICE	NO	DWELL FL	OFF
LINKED PREEMPTOR	0	FLASH EXIT COLOR	RED	PREEMPTION EXIT OPTION	OFF
EXIT TIMING PLAN	0	RESERVICE TIME	0		

FREE DURING PREEMPTION	RING 1	NO	RING 2	NO	RING 3	NO	RING 4	NO

TIMING	WALK	PED CLEAR	MIN GREEN	YELLOW	RED
ENTRANCE MIN TIMES	0	255	5	4.0	1.0
	MIN GREEN	EXT GREEN	MAX GREEN	YELLOW	RED
TRACK CLEAR	10	255	5	4.0	1.0
	MIN DWELL	PMT EXT	MAX TIME	YELLOW	RED
DWELL/CYCLE - EXIT	0	0.0	0	4.0	1.0

PREEMPTOR ACTIVE OUT	ON	PREEMPTOR ACTIVE OUT IN DWELL	NO
OTHER PRIORITY PREEMPTOR OUT	OFF	NON-PRIORITY PREEMPTOR OUT	OFF
INHIBIT EXTENSION TIME	0.0	PEDESTRIAN PRIORITY RETURN EXIT OPTION	OFF
VEHICLE PRIORITY RETURN EXIT OPTION	OFF	QUEUE DELAY RECOVERY OPTION	OFF
CONDITIONAL DELAY ENTRANCE OPTION	OFF		

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRIORITY RTN GRN %																

MM-4-1 Preemptor, sheet 2 of 6

PREEMPTOR NUMBER	2														
VEH/PED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TRACKCLR V															
TRACKCLR O															
ENA TRL															
DWEL VEH															
DWEL PED															
DWEL OLP															
CYC VEH															
CYC PED															
CYC OLP															
EXIT PH															
EXIT CAL															
SP FUNC															

ENABLE	NO	PREEMPTION OVERRIDE	X	INTERLOCK ENABLE	NO
NON-LOCK INPUT	X	DELAY TIME (SECONDS)	0	INHIBIT TIME (SECONDS)	0
AUTOMATIC FLASH HAS PRIORITY	X	DURATION TIME (SECONDS)	0	RED CLEAR GOES GREEN	NO
TERMINATE OVERLAPS ASAP	NO	PED CLEAR THRU YELLOW	NO	TERM PH	NO
PED DARK	NO	TRACK CLEARANCE RESERVICE	NO	DWELL FL	OFF
LINKED PREEMPTOR	0	FLASH EXIT COLOR	RED	PREEMPTION EXIT OPTION	OFF
EXIT TIMING PLAN	0	RESERVICE TIME	0		

FREE DURING PREEMPTION	RING 1	NO	RING 2	NO	RING 3	NO	RING 4	NO

TIMING	WALK	PED CLEAR	MIN GREEN	YELLOW	RED
ENTRANCE MIN TIMES	0	255	5	4.0	1.0
	MIN GREEN	EXT GREEN	MAX GREEN	YELLOW	RED
TRACK CLEAR	10	255	5	4.0	1.0
	MIN DWELL	PMT EXT	MAX TIME	YELLOW	RED
DWELL/CYCLE - EXIT	0	0.0	0	4.0	1.0

PREEMPTOR ACTIVE OUT	ON	PREEMPTOR ACTIVE OUT IN DWELL	NO
OTHER PRIORITY PREEMPTOR OUT	OFF	NON-PRIORITY PREEMPTOR OUT	OFF
INHIBIT EXTENSION TIME	0.0	PEDESTRIAN PRIORITY RETURN EXIT OPTION	OFF
VEHICLE PRIORITY RETURN EXIT OPTION	OFF	QUEUE DELAY RECOVERY OPTION	OFF
CONDITIONAL DELAY ENTRANCE OPTION	OFF		

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRIORITY RTN GRN %																

MM-4-1 Preemptor, sheet 3 of 6

PREEMPTOR NUMBER	3	EVP A - Northbound Veterans

VEH/PED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TRACKCLR V															
TRACKCLR O															
ENA TRL															
DWEL VEH		X			X										
DWEL PED															
DWEL OLP															
CYC VEH															
CYC PED															
CYC OLP															
EXIT PH		X				X									
EXIT CAL															
SP FUNC															

ENABLE	YES	PREEMPTION OVERRIDE		INTERLOCK ENABLE	NO
NON-LOCK INPUT	X	DELAY TIME (SECONDS)	0	INHIBIT TIME (SECONDS)	0
AUTOMATIC FLASH HAS PRIORITY	X	DURATION TIME (SECONDS)	0	RED CLEAR GOES GREEN	NO
TERMINATE OVERLAPS ASAP	NO	PED CLEAR THRU YELLOW	NO	TERM PH	NO
PED DARK	NO	TRACK CLEARANCE RESERVICE	NO	DWELL FL	OFF
LINKED PREEMPTOR	0	FLASH EXIT COLOR	GRN	PREEMPTION EXIT OPTION	OFF
EXIT TIMING PLAN	0	RESERVICE TIME	0		

FREE DURING PREEMPTION	RING 1	NO	RING 2	NO	RING 3	NO	RING 4	NO

TIMING	WALK	PED CLEAR	MIN GREEN	YELLOW	RED
ENTRANCE MIN TIMES	0	255	5	4.2	1.0
	MIN GREEN	EXT GREEN	MAX GREEN	YELLOW	RED
TRACK CLEAR	0	0	0	4.2	1.0
	MIN DWELL	PMT EXT	MAX TIME	YELLOW	RED
DWELL/CYCLE - EXIT	0	0.0	0	4.0	1.0

PREEMPTOR ACTIVE OUT	ON	PREEMPTOR ACTIVE OUT IN DWELL	YES
OTHER PRIORITY PREEMPTOR OUT	OFF	NON-PRIORITY PREEMPTOR OUT	OFF
INHIBIT EXTENSION TIME	0.0	PEDESTRIAN PRIORITY RETURN EXIT OPTION	OFF
VEHICLE PRIORITY RETURN EXIT OPTION	OFF	QUEUE DELAY RECOVERY OPTION	OFF
CONDITIONAL DELAY ENTRANCE OPTION	OFF		

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRIORITY RTN GRN %																

MM-4-1 Preemptor, sheet 4 of 6

PREEMPTOR NUMBER	4	EVP B - Eastbound Maple

VEH/PED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TRACKCLR V															
TRACKCLR O															
ENA TRL															
DWEL VEH				X											
DWEL PED															
DWEL OLP															
CYC VEH															
CYC PED															
CYC OLP															
EXIT PH		X				X									
EXIT CAL															
SP FUNC															

ENABLE	YES	PREEMPTION OVERRIDE		INTERLOCK ENABLE	NO
NON-LOCK INPUT	X	DELAY TIME (SECONDS)	0	INHIBIT TIME (SECONDS)	0
AUTOMATIC FLASH HAS PRIORITY	X	DURATION TIME (SECONDS)	0	RED CLEAR GOES GREEN	NO
TERMINATE OVERLAPS ASAP	NO	PED CLEAR THRU YELLOW	NO	TERM PH	NO
PED DARK	NO	TRACK CLEARANCE RESERVICE	NO	DWELL FL	OFF
LINKED PREEMPTOR	0	FLASH EXIT COLOR	GRN	PREEMPTION EXIT OPTION	OFF
EXIT TIMING PLAN	0	RESERVICE TIME	0		

FREE DURING PREEMPTION	RING 1	NO	RING 2	NO	RING 3	NO	RING 4	NO

TIMING	WALK	PED CLEAR	MIN GREEN	YELLOW	RED
ENTRANCE MIN TIMES	0	255	5	4.0	1.0
	MIN GREEN	EXT GREEN	MAX GREEN	YELLOW	RED
TRACK CLEAR	0	0	0	4.0	1.0
	MIN DWELL	PMT EXT	MAX TIME	YELLOW	RED
DWELL/CYCLE - EXIT	0	0.0	0	4.0	1.0

PREEMPTOR ACTIVE OUT	ON	PREEMPTOR ACTIVE OUT IN DWELL	NO
OTHER PRIORITY PREEMPTOR OUT	OFF	NON-PRIORITY PREEMPTOR OUT	OFF
INHIBIT EXTENSION TIME	0.0	PEDESTRIAN PRIORITY RETURN EXIT OPTION	OFF
VEHICLE PRIORITY RETURN EXIT OPTION	OFF	QUEUE DELAY RECOVERY OPTION	OFF
CONDITIONAL DELAY ENTRANCE OPTION	OFF		

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRIORITY RTN GRN %																

MM-4-1 Preemptor, sheet 5 of 6

PREEMPTOR NUMBER	5	EVP C - Southbound Veterans

VEH/PED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
OVERLAP	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TRACKCLR V															
TRACKCLR O															
ENA TRL															
DWEL VEH	X					X									
DWEL PED															
DWEL OLP															
CYC VEH															
CYC PED															
CYC OLP															
EXIT PH		X				X									
EXIT CAL															
SP FUNC															

ENABLE	YES	PREEMPTION OVERRIDE		INTERLOCK ENABLE	NO
NON-LOCK INPUT	X	DELAY TIME (SECONDS)	0	INHIBIT TIME (SECONDS)	0
AUTOMATIC FLASH HAS PRIORITY	X	DURATION TIME (SECONDS)	0	RED CLEAR GOES GREEN	NO
TERMINATE OVERLAPS ASAP	NO	PED CLEAR THRU YELLOW	NO	TERM PH	NO
PED DARK	NO	TRACK CLEARANCE RESERVICE	NO	DWELL FL	OFF
LINKED PREEMPTOR	0	FLASH EXIT COLOR	GRN	PREEMPTION EXIT OPTION	OFF
EXIT TIMING PLAN	0	RESERVICE TIME	0		

FREE DURING PREEMPTION	RING 1	NO	RING 2	NO	RING 3	NO	RING 4	NO

TIMING	WALK	PED CLEAR	MIN GREEN	YELLOW	RED
ENTRANCE MIN TIMES	0	255	5	4.0	1.0
	MIN GREEN	EXT GREEN	MAX GREEN	YELLOW	RED
TRACK CLEAR	0	0	0	4	1.0
	MIN DWELL	PMT EXT	MAX TIME	YELLOW	RED
DWELL/CYCLE - EXIT	0	0.0	0	4.0	1.0

PREEMPTOR ACTIVE OUT	ON	PREEMPTOR ACTIVE OUT IN DWELL	NO
OTHER PRIORITY PREEMPTOR OUT	OFF	NON-PRIORITY PREEMPTOR OUT	OFF
INHIBIT EXTENSION TIME	0.0	PEDESTRIAN PRIORITY RETURN EXIT OPTION	OFF
VEHICLE PRIORITY RETURN EXIT OPTION	OFF	QUEUE DELAY RECOVERY OPTION	OFF
CONDITIONAL DELAY ENTRANCE OPTION	OFF		

PHASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PRIORITY RTN GRN %																

MM-4-1 Preemptor, sheet 6 of 6

PREEMPTOR NUMBER	6	EVP D - Westbound Maple													
VEH/PED	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
OVERLAP	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**
TRACKCLR V															
TRACKCLR O															
ENA TRL															
DWEL VEH								X							
DWEL PED															
DWEL OLP															
CYC VEH															
CYC PED															
CYC OLP															
EXIT PH		X				X									
EXIT CAL															
SP FUNC															

ENABLE	YES	PREEMPTION OVERRIDE	X	INTERLOCK ENABLE	NO
NON-LOCK INPUT	X	DELAY TIME (SECONDS)	0	INHIBIT TIME (SECONDS)	0
AUTOMATIC FLASH HAS PRIORITY	X	DURATION TIME (SECONDS)	0	RED CLEAR GOES GREEN	NO
TERMINATE OVERLAPS ASAP	NO	PED CLEAR THRU YELLOW	NO	TERM PH	NO
PED DARK	NO	TRACK CLEARANCE RESERVICE	NO	DWELL FL	OFF
LINKED PREEMPTOR	0	FLASH EXIT COLOR	GRN	PREEMPTION EXIT OPTION	OFF
EXIT TIMING PLAN	0	RESERVICE TIME	0		

FREE DURING PREEMPTION	RING 1	NO	RING 2	NO	RING 3	NO	RING 4	NO

TIMING	WALK	PED CLEAR	MIN GREEN	YELLOW	RED
ENTRANCE MIN TIMES	0	255	5	4.0	1.0
	MIN GREEN	EXT GREEN	MAX GREEN	YELLOW	RED
TRACK CLEAR	0	0	0	4.0	1.0
	MIN DWELL	PMT EXT	MAX TIME	YELLOW	RED
DWELL/CYCLE - EXIT	0	0.0	0	4.0	1.0

PREEMPTOR ACTIVE OUT	ON	PREEMPTOR ACTIVE OUT IN DWELL	NO
OTHER PRIORITY PREEMPTOR OUT	OFF	NON-PRIORITY PREEMPTOR OUT	OFF
INHIBIT EXTENSION TIME	0.0	PEDESTRIAN PRIORITY RETURN EXIT OPTION	OFF
VEHICLE PRIORITY RETURN EXIT OPTION	OFF	QUEUE DELAY RECOVERY OPTION	OFF
CONDITIONAL DELAY ENTRANCE OPTION	OFF		

PHASES	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
PRIORITY RTN GRN %																

MM-4-2 Low Priority Preemptor Selection

ENABLE PREEMPT FILTERING & TSP/SCP		
FILTERED INPUT	**SOLID**	**PULSING**
1	BYPASS	BYPASS
2	BYPASS	BYPASS
3	PREEMPT 3	PREEMPT 7
4	PREEMPT 4	PREEMPT 8
5	PREEMPT 5	PREEMPT 9
6	PREEMPT 6	PREEMPT 10
7	BYPASS	BYPASS
8	BYPASS	BYPASS
9	BYPASS	BYPASS
10	BYPASS	BYPASS

MM-4-3 TSP/SCP Plan (Optional)

TSP/SCP PLAN	1	2	3	4	5	6
TSP/SCP ENABLED	NO	NO	NO	NO	NO	NO
SIGNAL TYPE (S or P)	S	S	S	S	S	S
DETECTOR LOCK						
DELAY TIME	0	0	0	0	0	0
MAX PRESENCE	0	0	0	0	0	0
PREEMPT ENABLES RESERVICE						
NO DELAY IN TSP PHASES						
ACTION SPECIAL FUNCTION INHIBIT	0	0	0	0	0	0
RESERVICE CYCLES	0	0	0	0	0	0
BUS HEADING (NB, SB, EB, WB)	NB	SB	EB	WB		
MODE (TSP or SCP)	TSP	FREE DEFAULT PTN		120		
HEADWAY ALLOWANCE	0%					

— TSP/SCP PHASE —																
VEH/PED	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TSP/SCP1																
TSP/SCP2																
TSP/SCP3																
TSP/SCP4																
TSP/SCP5																
TSP/SCP6																

MM-4-4 TSP/SCP Split Pattern (Optional)

TSP/SCP SPLIT PATTERN								
PHASE	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
MAX REDUCTION	255	255	255	255	255	255	255	255
MIN GREEN	(computed automatically)							
MAX EXTENSION								
PHASE	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
MAX REDUCTION	255	255	255	255	255	255	255	255
MIN GREEN	(computed automatically)							
MAX EXTENSION								

Time Base Submenu

MM-5-1 Clock/Calendar Data

Are the Date and Time set OK? (Yes, No)		STANDARD TIME FROM GMT	+00
MANUAL ACTION PLAN	0	SYNC REFERENCE	REF
SYNC REFERENCE TIME	00:00	DAYLIGHT SAVINGS	USDLS
TIME RESET INPUT TIME SET	03:30:00		

MM-5-2 Action Plan, sheet 1 of 4

ACTION PLAN	1		
PATTERN	1	SYSTEM OVERRIDE	NO
TIMING PLAN	1	SEQUENCE	5
VEHICLE DETECTOR PLAN	1	DETECTOR LOG	NONE
FLASH		RED REST	NO
VEHICLE DET DIAGNOSTIC PLAN	0	PED DET DIAGNOSTIC PLAN	0
DIMMING ENABLE	NO		

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION									(1-8)							
AUX FUNCTION				(1-3)												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

MM-5-2 Action Plan, sheet 2 of 4

ACTION PLAN	2		
PATTERN	2	SYSTEM OVERRIDE	NO
TIMING PLAN	1	SEQUENCE	2
VEHICLE DETECTOR PLAN	1	DETECTOR LOG	NONE
FLASH		RED REST	NO
VEHICLE DET DIAGNOSTIC PLAN	0	PED DET DIAGNOSTIC PLAN	0
DIMMING ENABLE	NO		

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION									(1-8)							
AUX FUNCTION				(1-3)												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

MM-5-2 Action Plan, sheet 3 of 4

ACTION PLAN	3		
PATTERN	3	SYSTEM OVERRIDE	NO
TIMING PLAN	1	SEQUENCE	0
VEHICLE DETECTOR PLAN	1	DETECTOR LOG	NONE
FLASH		RED REST	NO
VEHICLE DET DIAGNOSTIC PLAN	0	PED DET DIAGNOSTIC PLAN	0
DIMMING ENABLE	NO		

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION									(1-8)							
AUX FUNCTION				(1-3)												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

MM-5-2 Action Plan, sheet 4 of 4

ACTION PLAN			
PATTERN		SYSTEM OVERRIDE	
TIMING PLAN		SEQUENCE	
VEHICLE DETECTOR PLAN		DETECTOR LOG	
FLASH		RED REST	
VEHICLE DET DIAGNOSTIC PLAN		PED DET DIAGNOSTIC PLAN	
DIMMING ENABLE			

PHASE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PED RECALL																
WALK 2																
VEH EXT 2																
VEH RECALL																
MAX RECALL																
MAX 2																
MAX 3																
CS INHIBIT																
PHASE OMIT																
SPEC FUNCTION									(1-8)							
AUX FUNCTION				(1-3)												

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15															
LP 16-30															
LP 31-45															
LP 46-60															
LP 61-75															
LP 76-90															
LP 91-100															

- *Appendix D*

MM-5-3 Day Plan, sheet 1 of 2

DAY PLAN #						
EVENT #	ACTION PLAN #	START TIME		EVENT #	ACTION PLAN #	START TIME
1	0	00:00		26		:
2	0	07:15		27		:
3	0	09:30		28		:
4	0	14:30		29		:
5	0	18:30		30		:
6	0	00:00		31		:
7		:		32		:
8		:		33		:
9		:		34		:
10		:		35		:
11		:		36		:
12		:		37		:
13		:		38		:
14		:		39		:
15		:		40		:
16		:		41		:
17		:		42		:
18		:		43		:
19		:		44		:
20		:		45		:
21		:		46		:
22		:		47		:
23		:		48		:
24		:		49		:
25		:		50		:

MM-5-3 Day Plan, sheet 2 of 2

DAY PLAN #						
EVENT #	ACTION PLAN #	START TIME		EVENT #	ACTION PLAN #	START TIME
1		:		26		:
2		:		27		:
3		:		28		:
4		:		29		:
5		:		30		:
6		:		31		:
7		:		32		:
8		:		33		:
9		:		34		:
10		:		35		:
11		:		36		:
12		:		37		:
13		:		38		:
14		:		39		:
15		:		40		:
16		:		41		:
17		:		42		:
18		:		43		:
19		:		44		:
20		:		45		:
21		:		46		:
22		:		47		:
23		:		48		:
24		:		49		:
25		:		50		:

- *Appendix D*

MM-5-4 Schedule, sheet 1 of 3

SCHEDULE NUMBER	1
DAY PLAN NUMBER	1

MONTH	J	F	M	A	M	J	J	A	S	O	N	D
	X	X	X	X	X	X	X	X	X	X	X	X

DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

SCHEDULE NUMBER	2
DAY PLAN NUMBER	2

MONTH	J	F	M	A	M	J	J	A	S	O	N	D
	X	X	X	X	X	X	X	X	X	X	X	X

DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						X

DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

MM-5-4 Schedule, sheet 2 of 3

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	J	F	M	A	M	J	J	A	S	O	N	D
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	11	
	12	13	14	15	16	17	18	19	20	21	22	
	23	24	25	26	27	28	29	30	31			

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	J	F	M	A	M	J	J	A	S	O	N	D
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	11	
	12	13	14	15	16	17	18	19	20	21	22	
	23	24	25	26	27	28	29	30	31			

MM-5-4 Schedule, sheet 3 of 3

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	J	F	M	A	M	J	J	A	S	O	N	D
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	11	
	12	13	14	15	16	17	18	19	20	21	22	
	23	24	25	26	27	28	29	30	31			

SCHEDULE NUMBER												
DAY PLAN NUMBER												
MONTH	J	F	M	A	M	J	J	A	S	O	N	D
DAY OF WEEK (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT					
DAY OF MONTH (DOM)	1	2	3	4	5	6	7	8	9	10	11	
	12	13	14	15	16	17	18	19	20	21	22	
	23	24	25	26	27	28	29	30	31			

MM-5-5 Exception Day Program

EXCEPTION DAY	FLOAT / FIXED	MON / MON	DOW / DOM	WOM / YEAR	DAY PLAN
1	FLOAT				
2	FLOAT				
3	FLOAT				
4	FLOAT				
5	FLOAT				
6	FLOAT				
7	FLOAT				
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27	FLOAT				
28	FLOAT				
29	FLOAT				
30	FLOAT				
31	FLOAT				
32	FLOAT				
33	FLOAT				
34	FLOAT				
35	FLOAT				
36	FLOAT				

Detector Submenu

MM-6-1 Vehicle Detector Assignment, sheet 1 of 2

VEHICLE DETECTOR PLAN NUMBER [1]																		
DET	PH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	T (TYPE)
1	1																	
2	2																	
3	3																	
4	4																	
5	5																	
6	6																	
7	7																	
8	8																	
9	9																	
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64																		

MM-6-1 Vehicle Detector Assignment, sheet 2 of 2

VEHICLE DETECTOR PLAN NUMBER [ ]																		
DET	PH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	T (TYPE)
1																		
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64																		

MM-6-2 Vehicle Detector Setup, sheet 1 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	1						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	X															

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 2 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	2						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
2		X														

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 3 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	3						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
3			X													

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 4 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	4						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4				X												

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 5 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	5						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
5					X											

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY	
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 6 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	6						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6						X										

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 7 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	7						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
7							X									

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 8 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	8						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
8								X								

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
DISCONNECT TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS			
PASSAGE EXTENSION TIME (0-255 SEC.)				
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE C	CALLING DETECTOR PARAMETER SETTINGS			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS			
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)	
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)	
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)	
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)	
LOCK IN RED			NTCIP VOLUME	
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY
TYPE B	BIKE DETECTOR PARAMETER SETTINGS			
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME	
			NTCIP OCCUPANCY	

MM-6-2 Vehicle Detector Setup, sheet 9 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	9						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 10 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	10						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 11 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	11						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 12 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	12						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 13 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	13						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 14 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	14						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 15 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	15						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

MM-6-2 Vehicle Detector Setup, sheet 16 of 16

General Detector Parameters — Note: Enter DET PH in MM-6-1.

VEHICLE DETECTOR NUMBER (1-64)	16						VEHICLE DETECTOR PLAN NUMBER (1-4)									1
DETECTOR TYPE (S, D, P, C, R, G, N, B)	S	Standard														
ENABLE TS2 DETECTOR?	X						ENABLE ECPI LOG?									NO
PHASE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

Parameters Specific to the Detector Type — Note: There are no more parameters for type R (Red Extension).

TYPE S	STANDARD DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE D	DISCONNECT QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
DISCONNECT TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE P	PASSAGE QUEUE/STOP BAR DETECTOR PARAMETER SETTINGS					
PASSAGE EXTENSION TIME (0-255 SEC.)						
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE C	CALLING DETECTOR PARAMETER SETTINGS					
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE G	GREEN EXTENSION/DELAY DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			DELAY TIME (0-255.0 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE N	NTCIP DETECTOR PARAMETER SETTINGS					
CALL OPTION (YES/NO)			DELAY TIME (0-255.0 SEC.)			
EXTENSION OPTION (PASSAGE)			EXTENSION TIME (0-25.5 SEC)			
EXTENSION OPTION (QUEUE)			QUEUE LIMIT (0-255 SEC.)			
USE ADDED INITIAL CALCULATION			CROSS SWITCH PHASE (0-16)			
LOCK IN RED			NTCIP VOLUME			
LOCK IN YELLOW		NTCIP OCCUPANCY		PMT QUEUE DELAY		
TYPE B	BIKE DETECTOR PARAMETER SETTINGS					
EXTEND TIME (0-25.5 SEC.)			NTCIP VOLUME			
			NTCIP OCCUPANCY			

- *Appendix D*

MM-6-3 Ped Detector Phase Assignment

NTCIP Mode

PHASE	1	2	3	4	5	6	7	8
DETECTOR	1	2	3	4	5	6	7	8
PHASE	9	10	11	12	13	14	15	16
DETECTOR								

Econolite Mode

PHASE		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DETECTOR	1																
	2																
	3																
	4																
	5																
	6																
	7																
	8																
	9																
	10																
	11																
	12																
	13																
	14																
	15																
	16																

MM-6-4 Log Intervals – Speed Detector Setup

NTCIP LOG PERIOD		ECPI LOG PERIOD			LENGTH UNITS			
SPEED DET	1	2	3	4	5	6	7	8
LOCAL DET								
ONE/TWO DET	1	1	1	1	1	1	1	1
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								
SPEED DET	9	10	11	12	13	14	15	16
LOCAL DET								
ONE/TWO DET	1	1	1	1	1	1	1	1
VEH LENGTH								
TRAP LENGTH								
ENABLE LOG								

MM-6-5 Vehicle Detector Diagnostics, sheet 1 of 4

VEHICLE DIAGNOSTIC PLAN NUMBER 1

DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME	DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME
1							33						
2							34						
3							35						
4							36						
5							37						
6							38						
7							39						
8							40						
9							41						
10							42						
11							43						
12							44						
13							45						
14							46						
15							47						
16							48						
17							49						
18							50						
19							51						
20							52						
21							53						
22							54						
23							55						
24							56						
25							57						
26							58						
27							59						
28							60						
29							61						
30							62						
31							63						
32							64						

MM-6-5 Vehicle Detector Diagnostics, sheet 2 of 4

VEHICLE DIAGNOSTIC PLAN NUMBER 2

DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME	DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME
1							33						
2							34						
3							35						
4							36						
5							37						
6							38						
7							39						
8							40						
9							41						
10							42						
11							43						
12							44						
13							45						
14							46						
15							47						
16							48						
17							49						
18							50						
19							51						
20							52						
21							53						
22							54						
23							55						
24							56						
25							57						
26							58						
27							59						
28							60						
29							61						
30							62						
31							63						
32							64						

MM-6-5 Vehicle Detector Diagnostics, sheet 3 of 4

VEHICLE DIAGNOSTIC PLAN NUMBER 3

DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME	DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME
1							33						
2							34						
3							35						
4							36						
5							37						
6							38						
7							39						
8							40						
9							41						
10							42						
11							43						
12							44						
13							45						
14							46						
15							47						
16							48						
17							49						
18							50						
19							51						
20							52						
21							53						
22							54						
23							55						
24							56						
25							57						
26							58						
27							59						
28							60						
29							61						
30							62						
31							63						
32							64						

MM-6-5 Vehicle Detector Diagnostics, sheet 4 of 4

VEHICLE DIAGNOSTIC PLAN NUMBER 4

DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME	DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER	FAILED DET EXTEND TIME	FAILED DET DELAY TIME
1							33						
2							34						
3							35						
4							36						
5							37						
6							38						
7							39						
8							40						
9							41						
10							42						
11							43						
12							44						
13							45						
14							46						
15							47						
16							48						
17							49						
18							50						
19							51						
20							52						
21							53						
22							54						
23							55						
24							56						
25							57						
26							58						
27							59						
28							60						
29							61						
30							62						
31							63						
32							64						

MM-6-6 Ped Detector Diagnostics

PED DETECTOR DIAG PLAN 1				
DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

PED DETECTOR DIAG PLAN 2				
DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

PED DETECTOR DIAG PLAN 3				
DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

PED DETECTOR DIAG PLAN 4				
DET	COUNTS PER MIN (ERRATIC)	NO ACTIVITY INTERVAL	MAX PRESENCE INTERVAL	MULTIPLIER
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				

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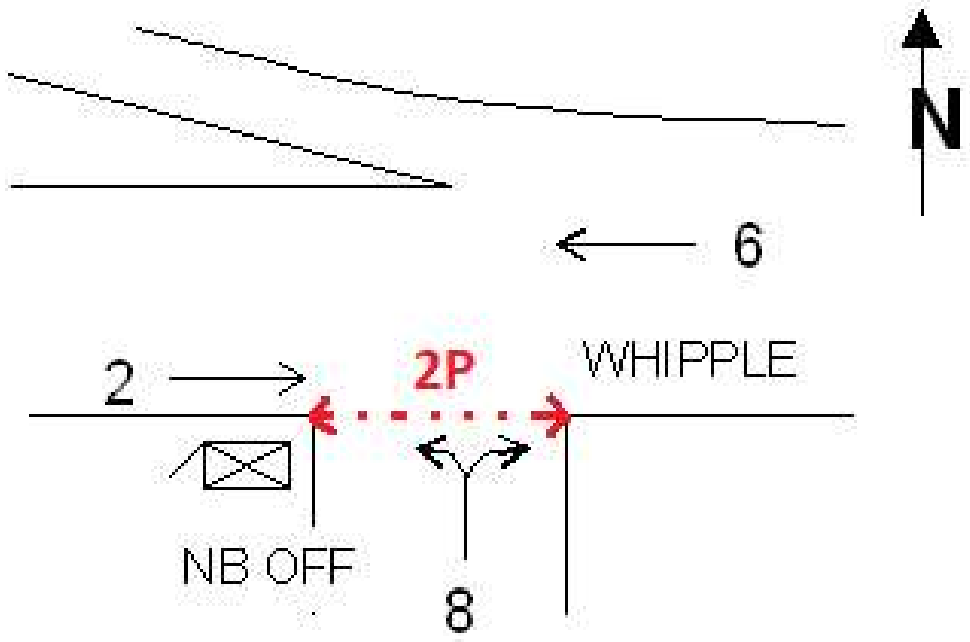
2070 Controller TSCP Timing Chart

Location: WHIPPLE ROAD & RTE 101 NB OFFRAMP
Designed By:
System: **District:** 04 **Installed By:**
Master At: **I/C:** **Service Info:**

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

			FLASH
PHASE	1)		[ ]
	2)	EB Whipple	[R]
	3)		[ ]
	4)		[ ]
	5)		[ ]
	6)	WB Whipple	[R]
	7)		[ ]
	8)	101 NB off ramp	[R]
OVERLAP	A)		[ ]
	B)		[ ]
	C)		[ ]
	D)		[ ]
	E)		[ ]
	F)		[ ]

Intersection Layout



Comments and Notes:
TSCP 2.21 (BUILD 5e) – 09/14/2017
Connected to Central Systems Via Wireless Network
Flush Plans Implemented - 06/09/2016
Upgrade modem from 3G to FirstNet 4G - EP - 02/18/2022
LPI Implemented - 05/23/2023 - EP

RAM Checksum

Page 2: F129	Page 8: 85AF
Page 3: 5517	Page 9: D2FD
Page 4: F29E	Page 10: D143
Page 5: 191A	Page 11: FDAC
Page 6: B8FA	Page 12: D68F
Page 7: ABFC	Page 13: 86F7

Post Mile: SM-101-06.300

Printed: 5/22/2023

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	. 2 . . . 6 . 8
Restricted	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. 2 . . . 6 . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	. 2 . . . 6 . 8
Pedestrian Calls	. 2 . . . . .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Phase Recalls (2-1-1-2)	
Vehicle Min	. . . . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlap	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlaps	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. 2 . . . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . . .
P5	. . . . .
P6	. . . . .
P7	. . . . .
P8	. . . . .

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	4	0	10	0	10	0	10
Flash Don't Walk	0	11	0	10	0	10	0	10
Minimum Green	10	4	10	10	10	4	10	4
Det Limit	10	0	10	10	10	0	10	0
Max Initial	10	0	10	10	10	0	10	18
Max Green 1	50	26	50	50	50	26	50	20
Max Green 2	50	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	5.0	0.0	5.0	5.0	5.0	0.0	5.0	0.0
Maximum Gap	5.0	2.5	5.0	5.0	5.0	2.0	5.0	2.0
Minimum Gap	5.0	1.0	5.0	5.0	5.0	1.0	5.0	1.0
Add Per Vehicle	1.0	0.0	1.0	1.0	1.0	0.0	1.0	2.0
Reduce Gap By	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Reduce Every	1.0	0.8	1.0	1.0	1.0	0.8	1.0	0.5
Yellow	5.0	3.6	5.0	5.0	5.0	3.6	5.0	3.0
All-Red	1.0	0.0	1.0	1.0	1.0	0.0	1.0	0.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	3	0	0	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor			. . . . .											
Plan 2	Green Factor			. . . . .											
Plan 3	Green Factor			. . . . .											
Plan 4	Green Factor			. . . . .											
Plan 5	Green Factor			. . . . .											
Plan 6	Green Factor			. . . . .											
Plan 7	Green Factor			. . . . .											
Plan 8	Green Factor			. . . . .											
Plan 9	Green Factor			. . . . .											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	. . . . .
11-19	. . . . .
21-29	. . . . .

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	. . . . .
Veh Min	Veh Max
. 2 . . . 6 . .	. . . . .
Ped	Bike
. . . . .	. . . . .
Cond	Cond Grn
. . . . .	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 2	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 5	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 6	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 7	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 9	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor			.....											
Plan 12	Green Factor			.....											
Plan 13	Green Factor			.....											
Plan 14	Green Factor			.....											
Plan 15	Green Factor			.....											
Plan 16	Green Factor			.....											
Plan 17	Green Factor			.....											
Plan 18	Green Factor			.....											
Plan 19	Green Factor			.....											

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.....	.....	.....	.....	.....	.....	.....	.....
Plan 12	.....	.....	.....	.....	.....	.....	.....	.....
Plan 13	.....	.....	.....	.....	.....	.....	.....	.....
Plan 14	.....	.....	.....	.....	.....	.....	.....	.....
Plan 15	.....	.....	.....	.....	.....	.....	.....	.....
Plan 16	.....	.....	.....	.....	.....	.....	.....	.....
Plan 17	.....	.....	.....	.....	.....	.....	.....	.....
Plan 18	.....	.....	.....	.....	.....	.....	.....	.....
Plan 19	.....	.....	.....	.....	.....	.....	.....	.....

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor	150		. . . . .	105				51				51		92
Plan 22	Green Factor	170		. . . . .	80				51				51		112
Plan 23	Green Factor	200		. . . . .	190				51				51		142
Plan 24	Green Factor	150		. . . . .	2				31				31		112
Plan 25	Green Factor	170		. . . . .	98				46				46		117
Plan 26	Green Factor	200		. . . . .	148				46				46		147
Plan 27	Green Factor	150		. . . . .	48				21				21		122
Plan 28	Green Factor	170		. . . . .	28				41				41		122
Plan 29	Green Factor	200		. . . . .	198				41				41		152

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 22	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 23	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 24	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 25	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 26	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 27	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 28	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 29	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

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DETECTORS

Detector Attributes (5-1)				Slot
Det	Type	Phases	Lock	
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	. . 3	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	 8	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	YEL	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . . .	NO	I12L
43	PEDESTRIAN	. . . . .	NO	I13U
44	PEDESTRIAN	. . . . .	NO	I13L

Detector Configuration (5-2)				
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3		2.5	10	1.1
4	2		10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23		1.0	10	1.2
24		1.0	10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33		1.5	10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)	
Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			. . . . .		. . . . .
2			. . . . .		. . . . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

	AB3418
	0
	1200
	NONE
	8
	1
	20
	20
	NORMAL

	AB3418
	0
	1200
	NONE
	8
	1
	20
	20
	NORMAL

	AB3418
	0
	1200
	NONE
	8
	1
	20
	20
	NORMAL

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)

Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	192	.	168	.	1	.	101
Netmask	255	.	255	.	255	.	0
Broadcast	192	.	168	.	1	.	255
Gateway	192	.	168	.	1	.	1

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RAILROAD PREEMPTION

RR 1

(3-1-1)	Timing	Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Clear 1	10	. 2 . . 5 . . .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
Clear 2		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Clear 3		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Hold		. . . . .	. . . . .	1 2 3 4 5 6 7 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	A B C D E F
Exit	5									
Min Grn										
Ped Clr										

Exit Parameters (3-1-5)			
Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)			
PR 1	PR 2	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2

(3-2-1)	Timing	Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Clear 1	10	. . . 4 . . 7 .	. . . . .	. . . . .	. . . . .	. . . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
Clear 2		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Clear 3		. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Hold		1 2 3 . . 6 . .	. . . . .	. . . . .	. 2 . . . 6 . .	. . . . .	. . . 4 . . . 8	. . . . .	. . . . .	. . . . .
Exit										
Min Grn										
Ped Clr										

Exit Parameters (3-2-5)			
Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	. . . 4 . . 7 .	. . . . .

Configuration (3-2-6)			
PR 1	PR 2	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
5.8	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	OPT	0	0
Plan 11-19	. . . . .	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

UPDATED 9/21/2022

INTERSECTION: Veterans Blvd @ Whipple Ave

PRINTED BY: pdelgado

CONTROLLER TYPE: Econolite/Cobalt

1. CONFIGURATION SUBMENU

1. CONTROLLER SEQUENCE

PRIORITY	1	2	3	4	5	6	7	8	9	10	11	12
RING1	1	2	3	4	9	10						
RING2	5	6	7	8	11	12						
CG		X		X		X						

2. PHASES IN USE

	PHASE NUMBER											
	1	2	3	4	5	6	7	8	9	10	11	12
PHASES IN USE	X	X		X	X	X	X	X				
EXCLUSIVE PED												

3. PHASE TO LOAD SWITCH (MMU) ASSIGNMENT

LSMMU[1]	SDG[2]		LSMMU[1]	SDG[2]	
CHANNEL	PH/OLAP	PED	CHANNEL	PH/OLAP	PED
1	1		9	2	X
2	2		10	4	X
3	3		11	6	X
4	4		12	8	X
5	5		13	A	
6	6		14	B	
7	7		15	C	
8	8		16	D	

[1]LOAD SWITCH (MMU)

[2]SIGNAL DRIVER GROUP

4. SDLC OPTIONS/ENABLES

	BIU NUMBER							
	1	2	3	4	5	6	7	8
TERM & FACIL								
DET RACK								
TYPE 2 RUNS AS TYPE 1								
MMU DISABLE								X
DIAGNOSTIC ENABLE (TEST FIXTURE)								
PEER TO PEER ENABLE								
PEER TO PEER ADDRESS:								
1) 255	2) 255	3) 255	4) 255	5) 255				
6) 255	7) 255	8) 255	9) 255	10) 255				

5. PORT2 CONFIGURATION

PORT2 PROTOCOL	Telemetry
PORT2 ENABLE	
NTCIP ADDRESS	
NTCIP GROUP ADDRESS	
NTCIP RESPONSE DELAY	
NTCIP SINGLE FLAG ENABLE	NO
NTCIP DROP-OUT TIME	
NTCIP BACKUP TIME	
DATA RATE (BPS)	
DATA, PARITY, STOP	

6. PORT3 CONFIGURATION

PORT3 PROTOCOL	NTCIP
PORT3 ENABLE	
TELEMETRY ADDRESS	
SYSTEM DETECTOR 9-16 ADDRESS	
TELEMETRY RESPONSE DELAY	7800
DUPLEX - HALF OR FULL	FULL
MODEM DATA RATE (BPS)	1200
DATA, PARITY, STOP	8, N, 1
NTCIP ADDRESS	4
NTCIP GROUP ADDRESS	
NTCIP RESPONSE DELAY	16
NTCIP SINGLE FLAG ENABLE	No
NTCIP DROP-OUT TIME	60
NTCIP BACKUP TIME	
ADDITIONAL SCREENS(S)	

7. ENABLE EVENT LOGS

CRITICAL RFE'S (MMU/TF)	X
NON-CRITICAL RFE'S (DET/TEST)	X
DETECTOR ERRORS	X
COORDINATION ERRORS	X
MMU FLASH FAULTS	X
LOCAL FLASH FAULTS	X
PREEMPT	X
POWER ON/OFF	X
LOW BATTERY	X
SPARE	X
ALARM 1	X
ALARM 2	X
ALARM 3	X
ALARM 4	
ALARM 5	
ALARM 6	
ALARM 7	
ALARM 8	
ALARM 9	
ALARM 10	
ALARM 11	
ALARM 12	
ALARM 13	
ALARM 14	
ALARM 15	
ALARM 16	

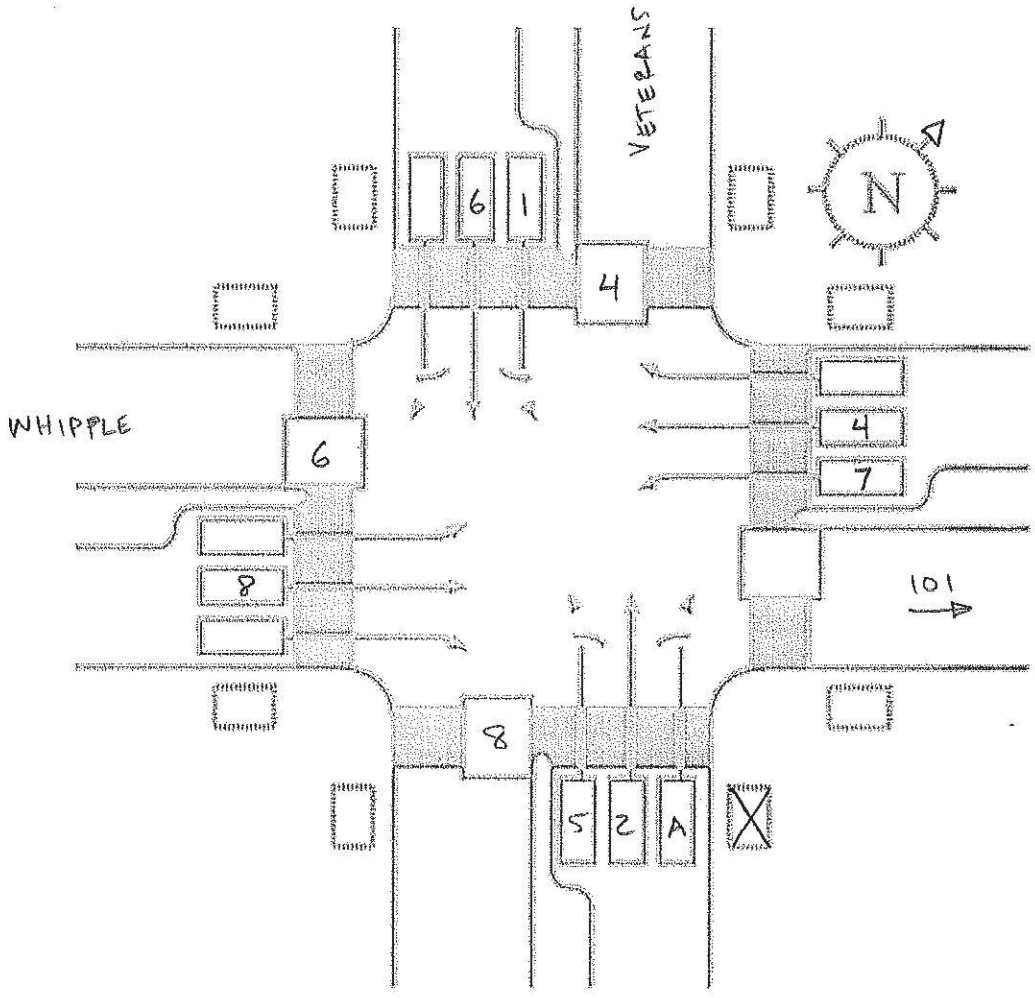
8. OPTIONS

SUPERVISOR ACCESS CODE	
DATA CHANGE ACCESS CODE	
KEY CLICK ENABLE	
BACKLIGHT ENABLE	

9. MMU PROGRAM

CAN SERVE WITH

	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															



2. CONTROLLER SUBMENU

1. CONTROLLER TIMING DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GRN	9	8		11	11	10	11	11				
BIKE GRN												
CS MGRN												
WALK				7		7		7				
PED CLR				32		26		32				
VEH EXT	2	2		2	2	2	2	2				
VEH EXT 2												
MAX EXT												
MAX1	24	40		48	32	32	24	48				
MAX2												
MAX3												
DET MAX												
YELLOW	4.2	4.2		4	4.2	4.2	4.0	4				
RED CLR	1.0	1		1	1.0	1.0	1.0	1				
RED RVT	2	2	2	2	2	2	2	2	2	2	2	2
ACT B4												
SEC/ACT												
MAX INI												
TIME B4												
CARS WT												
TTREDUC												
MIN GAP												

2. PHASE OVERLAP ASSIGNMENTS

	OVERLAP CONSISTS OF PHASES:											
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1	X											
2		X										
3			X									
4				X								
5					X							
6						X						
7							X					
8								X				
9									X			
10										X		
11											X	
12												X

3. PED TIMING CARRYOVER

PHASE	CARRYOVR PHS	PHASE	CARRYOVR PHS
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. CONTROLLER RECALL DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
LOCKING MEMORY												
VEHICLE RECALL		X										
PED RECALL												
RECALL TO MAX												
SOFT RECALL		X				X						
DON'T REST HERE												
PED DARK N/CALL												

5. CONTROLLER OVERLAP DATA

OVERLAP A	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD		X					X					
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP B	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP C	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

OVERLAP D	1	2	3	4	5	6	7	8	9	10	11	12
STANDARD												
PROTECTED												
PERMITTED												
ENABLE LAG												
ENABLE LEAD												
SPARE												
ADVANCE GREEN TIMER												
LAG/LEAD GREEN TIMER												
LAG/LEAD YELLOW TIMER												
LAG/LEAD RED TIMER												

PED OVERLAP ASSIGNMENTS - OVERLAP CONSISTS OF PHASES:												
OVLP PHASE	1	2	3	4	5	6	7	8	9	10	11	12
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												

6. CONTROLLER START/FLASH DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
POWER START		X				X						
EXTERNAL START												
ENTRY REM FLASH		X				X						
EXIT REM FLASH		X				X						
REM FLASH YELLOW												
FL TOGETHER PHS		X		X		X		X		X		X
FL TOGETHER OVLPS	A:			B:		X		C:			D:	X

STARTUP INTERVAL RING 1	RED
STARTUP INTERVAL RING 2	RED
POWER START ALL RED TIME	6
POWER START FLASH TIME	
REMOTE FLASH OPTIONS:	
OUT OF FLASH YELLOW	
OUT OF FLASH ALL RED	
MINIMUM RECALL	
SPARE	
FLASH THRU LOAD SWITCHES	
CYCLE THROUGH PHASES	
YELLOW FLASH MAIN STREET	

7. NO SERVER PHASES

CANNOT SERVER WITH:											
PHASE	12	11	10	9	8	7	6	5	4	3	2
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											

8. DIMMING

LOAD SWITCH	1	2	3	4	5	6	7	8
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								
LOAD SWITCH	9	10	11	12	13	14	15	16
DIM GRN/WLK								
DIM YEL/PC								
DIM RED/DW								

9. CONTROLLER OPTION DATA

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
GUAR PASSAGE												
NONACTUATED I												
NONACTUATED II												
DUAL ENTRY												
COND SERVICE												
COND RESERVICE												
REST IN WALK												
FLASHING WALK												

FIVE SECTION LEFT TURN HEADS					
5-2		7-4		1-6	
3-8		11-10		9-12	

DUAL ENTRY		RESERVED	
COND SERVICE ENABLE		BACKUP PROTECTION GRP 1	
COND SERVICE DET X SWITCH		BACKUP PROTETION GRP 2	
PED CLR PROTECT		BACKUP PROTECTION GRP 3	
SPEC PREEPMT OVLP FLASH		SIMULTANEOUS GAP GROUP 1	X
LOCK DET IN RED ONLY		SIMULTANEOUS GAP GROUP 2	X
RESERVED		SIMULTANEOUS GAP GROUP 3	

3. COORDINATOR SUBMENU

1. COORDINATOR OPTIONS

SPLIT UNITS	SECONDS	ACT CRD PHASE	X
OFFSET UNITS	SECONDS	ACT WALK/REST	
INTERCNT FMT	STANDARD	INHIBIT MAX	X
INTERCNT SRC	NIC	MAX2 SELECT	
RESYNC COUNT		MULTISYNC	
TRANSITION	SMOOTH	FLOAT FORCE OFF	
DWELL PERIOD			

	A	B	C	D	E	F
FREE ALTERNATE SEQUENCE						

2. COORD MANUAL AND SPLIT DEMAND

MANUAL ENABLE					MANUAL PATTERN							
SPLIT DEMAND:					DEMAND 1				DEMAND 2			
DEMAND CALL TIME												
DEMAND CYCLE COUNT												
DEMAND PHASES	1	2	3	4	5	6	7	8	9	10	11	12
DEMAND 1 PHASE												
DEMAND 2 PHASE												

3. COORD AUTO PERM MIN GREEN

PHASE	AUTO PERM MIN GRN	PHASE	AUTO PERM MIN GRN
1		7	
2		8	
3		9	
4		10	
5		11	
6		12	

4. PATTERN DATA

COORD PATTERN	1				OFFSET				2			
CYCLE LENGTH	116				C/O/S				111			
SPLITS:												
1)	14	2)		37	3)				4)		65	
5)	14	6)		37	7)		19		8)		46	
9)		10)			11)				12)			
VEH PERMISSIVE					[1]				[2]			
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING					[1]				[2]			
SPL DMD PATTERN					[1]				[2]			
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL								--				
PHASE OMIT												

	A	B	C	D	E	F
ALT SEQUENCE						

COORD PATTERN	2				OFFSET				70			
CYCLE LENGTH	116				C/O/S				222			
SPLITS:												
1)	14	2)		39	3)				4)		63	
5)	19	6)		34	7)		20		8)		43	
9)		10)			11)				12)			
VEH PERMISSIVE					[1]				[2]			
VEH PERM 2 DISP												
PHASE RESERVICE												
SPLIT EXTENSION/RING					[1]				[2]			
SPL DMD PATTERN					[1]				[2]			
XARTERY PATTERN												

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												

	A	B	C	D	E	F
ALT SEQUENCE						

COORD PATTERN	3	OFFSET	78
CYCLE LENGTH	125	C/O/S	333

SPLITS:							
1)	14	2)	45	3)		4)	66
5)	22	6)	37	7)	20	8)	46
9)		10)		11)		12)	

VEH PERMISSIVE	[1]	[2]
VEH PERM 2 DISP		
PHASE RESERVICE		
SPLIT EXTENSION/RING	[1]	[2]
SPL DMD PATTERN	[1]	[2]
XARTERY PATTERN		

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
COORD PHASES		X				X						
VEHICLE RECALL												
VEH MAX RECALL												
PED RECALL												
PHASE OMIT												

	A	B	C	D	E	F
ALT SEQUENCE						

4. PREEMPTOR SUBMENU

1. PRIORITY PREEMPTOR 1

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	GREEN
MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
MAX EXIT		HLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			

2. PRIORITY PREEMPTOR 2

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES												
EXIT PHASES												
EXIT CALLS												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE		PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	GREEN
MAX TIME		DURATION TIME	
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
MAX EXIT		HLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

3. PRIORITY PREEMPTOR 3

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES		X			X							
EXIT PHASES		X			X							
EXIT CALLS												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE	X	PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	GREEN
MAX TIME	10	DURATION TIME	10
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
MAX EXIT		HLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

4. PRIORITY PREEMPTOR 4

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES								X				
EXIT PHASES								X				
EXIT CALLS												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE	X	PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	GREEN
MAX TIME	10	DURATION TIME	10
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
MAX EXIT		HLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

5. PRIORITY PREEMPTOR 5

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES	X					X						
EXIT PHASES	X					X						
EXIT CALLS												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE	X	PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	GREEN
MAX TIME	10	DURATION TIME	10
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
MAX EXIT		HLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

6. PRIORITY PREEMPTOR 6

	1	2	3	4	5	6	7	8	9	10	11	12
TERM PHASE OVLP												
TRK CLR PHASE												
HOLD PHASES				X			X					
EXIT PHASES				X			X					
EXIT CALLS												

TERM OVERLAP	A:	B:	C:	D:

ACTIVE	X	PED DARK	
PRIORITY		PED ACTIVE	
DET LOCK		ZERO PC TIME	
HOLD FLASH		PC THRU YELLOW	
TERM OVLP ASAP		TERM PHASES	
DON'T OVERRIDE FLASH		ACTIVE ONLY DURING HOLD	
FLASH ALL OUTPUTS		NO CVM IN FLASH	
YELLOW-RED GOES GREEN		FAST FLASH GRN ON HOLD	
ENABLE MAX PREEMPT TIME		OUT OF FLASH	GREEN
MAX TIME	10	DURATION TIME	10
MIN HOLD TIME		DELAY TIME	
MIN PED CLEAR		INHIBIT TIME	
MAX EXIT		HLD DELAY TIME	

	GREEN	YELLOW	RED
MINIMUM			
TRACK CLEAR			
HOLD			
LINKED PREEMPTOR			

7. BUS PREEMPTORS

	BUS PREEMPTOR			
	1	2	3	4
PREEMPTOR ACTIVE				
DETECTOR LOCK				
MAXIMUM TIME				
RESERVICE TIME				
DELAY TIME				
INHIBIT TIME				
ENTRANCE GREEN				
ENTRANCE PED CLR				
ENTRANCE YELLOW				
ENTRANCE RED				
MIN HOLD TIME				

HOLD PHASE	1	2	3	4	5	6	7	8	9	10	11	12
PREEMPTOR 1												
PREEMPTOR 2												
PREEMPTOR 3												
PREEMPTOR 4												

5. NIC/TOD SUBMENU

1. NIC/TOD CLOCK/CALENDAR DATA

DATE SET:	
TIME SET:	
MANUAL NIC PROGRAM STEP	
MANUAL TOD PROGRAM STEP	
SYNC REFERENCE TIME	12:00:00 AM
SYNC REFERENCE	REFERENCE TIME
WEEK 1 BEGINS ON 1ST SUNDAY	
DISABLE DAYLIGHT SAVINGS	
DST BEGINS LAST SUNDAY	

2. NIC/TOD WEEKLY PROGRAMS

WEEK	SUN	MON	TUE	WED	THU	FRI	SAT
1	2	1	1	1	1	1	2
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1

3. NIC/TOD YEARLY PROGRAMS

WEEK OF YEAR	1	2	3	4	5	6	7	8
WEEKLY	1	1	1	1	1	1	1	1
WEEK OF YEAR	9	10	11	12	13	14	15	16
WEEKLY	1	1	1	1	1	1	1	1
WEEK OF YEAR	17	18	19	20	21	22	23	24
WEEKLY	1	1	1	1	1	1	1	1
WEEK OF YEAR	25	26	27	28	29	30	31	32
WEEKLY	1	1	1	1	1	1	1	1
WEEK OF YEAR	33	34	35	36	37	38	39	40
WEEKLY	1	1	1	1	1	1	1	1
WEEK OF YEAR	41	42	43	44	45	46	47	48
WEEKLY	1	1	1	1	1	1	1	1
WEEK OF YEAR	49	50	51	52	53			
WEEKLY	1	1	1	1	1			

4. NIC/TOD HOLIDAY PROGRAM

HOLIDAY	FLOAT/FIXED	MON/MON	DOW/DOM	WOM/YEAR	PROG
1	FIXED				
2	FIXED				
3	FIXED				
4	FIXED				
5	FIXED				
6	FIXED				
7	FIXED				
8	FIXED				
9	FIXED				
10	FIXED				
11	FIXED				
12	FIXED				
13	FIXED				
14	FIXED				
15	FIXED				
16	FIXED				
17	FIXED				
18	FIXED				
19	FIXED				
20	FIXED				
21	FIXED				
22	FIXED				
23	FIXED				
24	FIXED				
25	FIXED				
26	FIXED				
27	FIXED				
28	FIXED				
29	FIXED				
30	FIXED				
31	FIXED				
32	FIXED				
33	FIXED				
34	FIXED				
35	FIXED				
36	FIXED				

5. NIC PROGRAM STEP

STEP	PGM	TIME	PATTERN	OVERRIDE
1	1	0:00	0	
2	1	7:00	0	
3	1	9:00	0	
4	1	11:00	0	
5	1	13:30	0	
6	1	16:00	0	
7	1	18:30	0	
8	2	00:00	0	
9		00:00		
10		00:00		
11		00:00		
12		00:00		
13		00:00		
14		00:00		
15		00:00		
16		00:00		
17		00:00		
18		00:00		
19		00:00		
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195		00:00		
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199		00:00		
200		00:00		

6. TOD PROGRAM STEP

TOD PROGRAM STEP									1			
DAY PGM NUM									1			
STEP BEGINS									12:00:00 AM			
DIMMING ENABLE					FLASH							
RED REST					ALT VEHICLE EXT							
DET LOG ENABLE			X		SPARE 5							
SPARE 4					SPARE 3							
DET DIAG PLAN												
ALT SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS												

TOD PROGRAM STEP									2			
DAY PGM NUM									2			
STEP BEGINS									12:00:00 AM			
DIMMING ENABLE					FLASH							
RED REST					ALT VEHICLE EXT							
DET LOG ENABLE			X		SPARE 5							
SPARE 4					SPARE 3							
DET DIAG PLAN												
ALT SEQUENCE	A		B		C		D		E		F	
PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MAX2 ENABLE												
MAX3 ENABLE												
VEH RECALL												
VEH MAX RECALL												
PED RECALL												
COND SERV INH												
PHASE OMIT												
SPECIAL FCTNS												

6. DETECTORS

1. SETUP

#	TYPE	EXTEND	DELAY	Q LIMIT	FAIL TIME	FAIL ACT	ERR CNT
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
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21							
22							
23							
24							
25							
26							
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32							
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37							
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51							
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54							
55							
56							
57							
58							
59							
60							
61							
62							
63							
64							

#	QUEUE	YLW LCK	PASSAGE	SYSTEM	CALL DET	ADD INIT	RD LOCK
1			X				
2			X				
3			X				
4			X				
5			X				
6			X				
7			X				
8			X				
9			X				
10			X				
11			X				
12			X				
13			X				
14			X				
15			X				
16			X				
17			X				
18			X				
19			X				
20			X				
21			X				
22			X				
23			X				
24			X				
25			X				
26			X				
27			X				
28			X				
29			X				
30			X				
31			X				
32			X				
33			X				
34			X				
35			X				
36			X				
37			X				
38			X				
39			X				
40			X				
41			X				
42			X				
43			X				
44			X				
45			X				
46			X				

47			X				
48			X				
49			X				
50			X				
51			X				
52			X				
53			X				
54			X				
55			X				
56			X				
57			X				
58			X				
59			X				
60			X				
61			X				
62			X				
63			X				
64			X				

2. DIAGNOSTICS

	No Actvity			Max Presence			Scale		
#	1	2	3	1	2	3	1	2	3
1							1	1	1
2							1	1	1
3							1	1	1
4							1	1	1
5							1	1	1
6							1	1	1
7							1	1	1
8							1	1	1
9							1	1	1
10							1	1	1
11							1	1	1
12							1	1	1
13							1	1	1
14							1	1	1
15							1	1	1
16							1	1	1
17							1	1	1
18							1	1	1
19							1	1	1
20							1	1	1
21							1	1	1
22							1	1	1
23							1	1	1
24							1	1	1
25							1	1	1
26							1	1	1
27							1	1	1
28							1	1	1
29							1	1	1
30							1	1	1
31							1	1	1
32							1	1	1
33							1	1	1
34							1	1	1
35							1	1	1
36							1	1	1
37							1	1	1
38							1	1	1
39							1	1	1
40							1	1	1
41							1	1	1
42							1	1	1
43							1	1	1
44							1	1	1
45							1	1	1
46							1	1	1
47							1	1	1
48							1	1	1
49							1	1	1
50							1	1	1
51							1	1	1
52							1	1	1
53							1	1	1
54							1	1	1
55							1	1	1
56							1	1	1
57							1	1	1
58							1	1	1
59							1	1	1
60							1	1	1
61							1	1	1
62							1	1	1
63							1	1	1
64							1	1	1

3. PHASE ASSIGNMENTS

	Call Phases												Switch Phase											
#	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
1	X																							
2		X																						
3			X																					
4				X																				
5					X																			
6						X																		
7							X																	
8								X																
9									X															
10										X														
11											X													
12												X												
13																								
14																								
15																								
16																								
17																								
18																								
19																								
20																								
21																								
22																								
23																								
24																								
25																								
26																								

27																															
28																															
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31																															
32																															
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58																															
59																															
60																															
61																															
62																															
63																															
64																															

5. SPEED DETECTORS

	ONE DETECTOR SPEED							
SPEED DET NUMBER	1	2	3	4	5	6	7	8
LOCAL DET NUMBER								
VEHICLE LENGTH								
LOOP LENGTH								
SPEED DET NUMBER	9	10	11	12	13	14	15	16
LOCAL DET NUMBER								
VEHICLE LENGTH								
LOOP LENGTH								
	TWO DETECTOR SPEED							
SPEED DET NUMBER	1	2	3	4	5	6	7	8
LOCAL DET NUMBER								
SPEED TRAP LENGTH								
SPEED DET NUMBER	9	10	11	12	13	14	15	16
LOCAL DET NUMBER								
SPEED TRAP LENGTH								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ENABLE LOG																
UNITS	INCHES															
LOG INTERVAL																

4. PEDESTRIAN DETECTORS

#	Phase	No Activity	Max Presence	Erratic Counts	Scale
1	1				1
2	2				1
3	3				1
4	4				1
5	5				1
6	6				1
7	7				1
8	8				1
9	9				1
10	10				1
11	11				1
12	12				1

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Location: MARSH RD & BAYFRONT EXPRESSWAY (ROUTE 84) **Designed By:**

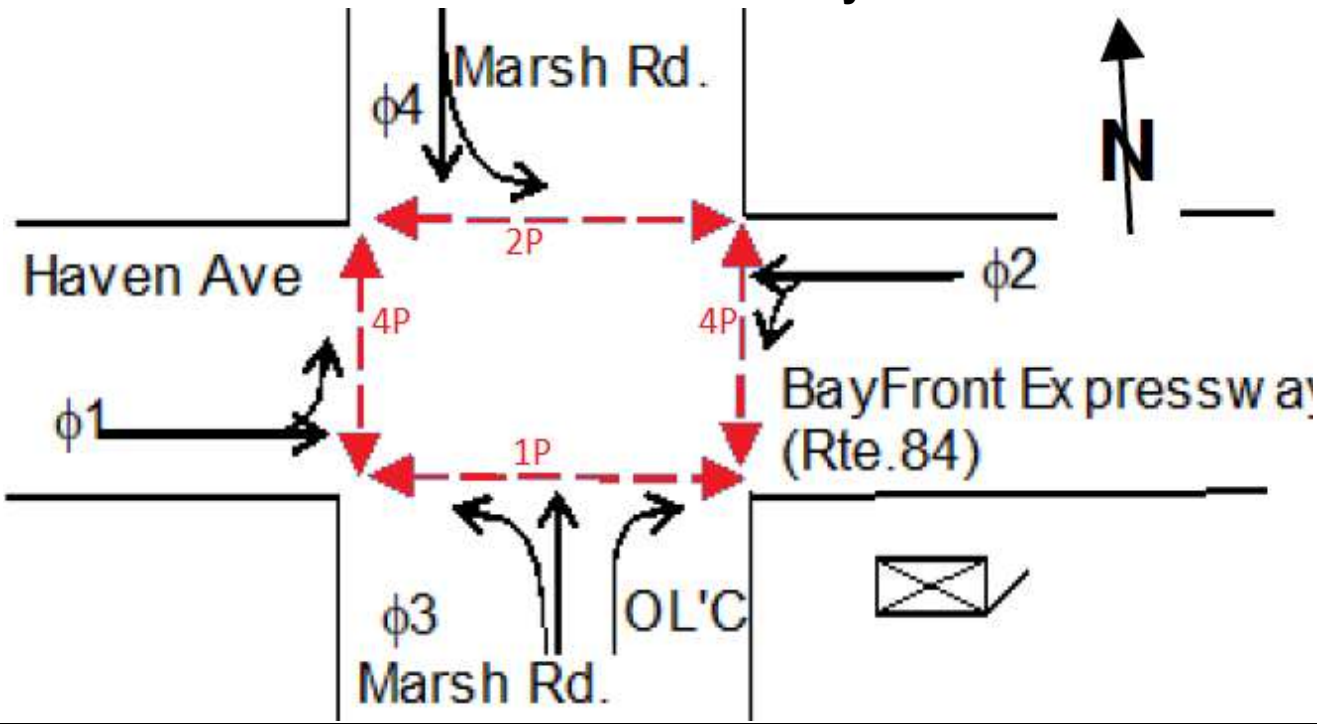
System: 2070 **District:** 4 **Installed By:** TM

Master At: **I/C:** **Service Info:**

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

		FLASH
PHASE	1) EB	[R]
	2) WB	[R]
	3) NB	[R]
	4) SB	[R]
	5)	[ ]
	6)	[ ]
	7)	[ ]
	8)	[ ]
OVERLAP	A)	[ ]
	B)	[ ]
	C) NB RT	[R]
	D)	[ ]
	E)	[ ]
	F)	[ ]

Intersection Layout



Comments and Notes:

TSCP 3.10 (Build 10)- 05/16/2023
Connected to Central Systems via Network Port thru Hirchman Switch (Port 8)
Flush Plans Implemented - 08/30/2016
New Coordination - 12/18/2018
LPI - 04/19/2023 - EP

RAM Checksum

Page 2: EC02	Page 8: 4D99
Page 3: A1E7	Page 9: E841
Page 4: 314C	Page 10: BE33
Page 5: E36A	Page 11: F1B3
Page 6: 2671	Page 12: B19A
Page 7: CF8E	Page 13: 86F7

Post Mile: SM-084-26.037

Printed: 5/18/2023

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	1 2 3 4 . 6 . .
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	1 2 3 4 . 6 . .
Pedestrian Calls	1 2 . 4 . . . .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlaps	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlaps	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	1 2 . 4 . . . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . 4 . . . .
P5	. . . . .
P6	1 . . . . .
P7	. . . . .
P8	. . . . .

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. 2 3	. . . . .	. . . . .	1 . . 4 . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	4	4	0	4	0	10	0	10
Flash Don't Walk	27	16	0	31	0	10	0	10
Minimum Green	6	10	11	11	10	10	10	10
Det Limit	0	16	0	0	10	10	10	10
Max Initial	0	20	0	0	10	10	10	10
Max Green 1	24	70	27	15	50	10	50	50
Max Green 2	50	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	0.0	0.0	0.0	0.0	5.0	0.0	5.0	5.0
Maximum Gap	2.0	4.5	2.0	2.0	5.0	4.0	5.0	5.0
Minimum Gap	1.5	3.5	1.5	1.5	5.0	3.0	5.0	5.0
Add Per Vehicle	0.0	2.0	0.0	0.0	1.0	1.0	1.0	1.0
Reduce Gap By	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Reduce Every	0.8	1.0	0.8	0.8	1.0	1.0	1.0	1.0
Yellow	3.7	5.2	4.1	3.7	5.0	3.6	5.0	5.0
All-Red	0.0	1.0	1.0	0.5	1.0	0.5	1.0	1.0
Ped/Bike (2-3)	**-1-**	**-2-**	**-3-**	**-4-**	**-5-**	**-6-**	**-7-**	**-8-**
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	3	3	0	3	0	0	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	3.6	5.0	5.0	5.0
Red	0.0	0.0	1.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor	180		1 . . . . 6 . .	81			35	65	19	38		107		
Plan 2	Green Factor			. . . . .											
Plan 3	Green Factor	200		1 . . . . 6 . .	100			34	75	30	38		116		
Plan 4	Green Factor	160		1 . . . . 6 . .	125			34	37	28	38		78		
Plan 5	Green Factor			. . . . .											
Plan 6	Green Factor	200		1 . . . . 6 . .	55			34	75	30	38		116		
Plan 7	Green Factor	160		1 . . . . 6 . .	145			34	40	25	38		81		
Plan 8	Green Factor			. . . . .											
Plan 9	Green Factor			. . . . .											

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	1 . 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 2	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 3	1 . 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 4	1 . 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 5	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 6	1 . 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 7	1 . 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 9	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

Master Timer Sync (7-A)	
Enable in Plans	
1-9	. . . . .
11-19	. . . . .
21-29	. . . . .

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
1 . 3 . . 6 . 8	. . . . .
Veh Min	Veh Max
. 2 . . . 6 . .	. . . . .
Ped	Bike
. . . . .	. . . . .
Cond	Cond Grn
. . . . .	10

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-29
254 = Flash
255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor	180		. . . . .	49			34	55	31	38		93		
Plan 12	Green Factor	200		. . . . .	16			34	75	31	38		113		
Plan 13	Green Factor	220		. . . . .	212			34	79	47	38		117		
Plan 14	Green Factor	160		. . . . .	29			36	30	34	38		70		
Plan 15	Green Factor	180		. . . . .	129			34	40	46	38		78		
Plan 16	Green Factor	210		. . . . .	173			35	41	74	38		80		
Plan 17	Green Factor	180		. . . . .	95			34	26	60	38		64		
Plan 18	Green Factor	200		. . . . .	117			36	34	70	38		74		
Plan 19	Green Factor	220		. . . . .	117			40	41	79	38		85		

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 12	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 13	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 14	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 15	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 16	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 17	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 18	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 19	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor	180		. . . . .		27	2	34	70	16	38		108		
Plan 22	Green Factor	200		. . . . .		31	22	34	87	19	38		125		
Plan 23	Green Factor	220		. . . . .		105	105	34	102	24	38		140		
Plan 24	Green Factor	160		. . . . .		85	117	34	33	33	38		71		
Plan 25	Green Factor	180		. . . . .		149	53	34	40	46	38		78		
Plan 26	Green Factor	220		. . . . .		57	141	34	90	36	38		128		
Plan 27	Green Factor	180		. . . . .		155	132	34	50	36	38		88		
Plan 28	Green Factor	200		. . . . .		140	22	34	70	36	38		108		
Plan 29	Green Factor	220		. . . . .		157	20	34	90	36	38		128		

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 22	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 23	. 2 3 . . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 24	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 25	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 26	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 27	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 28	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 29	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . 3	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

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DETECTORS

Detector Attributes (5-1)				Slot
Det	Type	Phases	Lock	
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	. . 3	NO	I9U
18	COUNT+CALL+EXTEND	. . 3	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	1	NO	J2U
24	COUNT+CALL+EXTEND	. 2	NO	J2L
25	COUNT+CALL+EXTEND	1	NO	J3U
26	CALL+EXTEND	1	NO	J3L
27	COUNT+CALL+EXTEND	1	NO	J4U
28	COUNT+CALL+EXTEND	1	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	. 2	NO	J6U
32	COUNT+CALL+EXTEND	. 2	NO	J6L
33	COUNT+CALL+EXTEND	. 2	NO	J7U
34	CALL+EXTEND	. 2	NO	J7L
35	CALL+EXTEND	. 2	NO	J8U
36	COUNT+CALL+EXTEND	. 2	NO	J8L
37	COUNT+CALL+EXTEND	1	NO	J9U
38	COUNT+CALL+EXTEND	1	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . 4 . . .	NO	I12L
43	PEDESTRIAN	1	NO	I13U
44	PEDESTRIAN	. . . . .	NO	I13L

Detector Configuration (5-2)				
Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3			10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11	10		10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23			10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38	5		10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)	
Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)	
Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
0645	1	A
1000	255	A
1400	3	A
1900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Daylight Saving (8-1)

Enabled	YES	Month	Sunday
	Start	MAR	2nd
	End	NOV	1st

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			. . . . .		. . . . .
2			. . . . .		. . . . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

	C2 (6-1-1)	C20 (6-1-2)	C21 (6-1-3)
Address	1		
Baud	9600	1200	1200
Protocol	AB3418	AB3418	AB3418
Data Bits	8	8	8
Parity	NONE	NONE	NONE
Stop Bits	1	1	1
RTS On Time	20	20	20
RTS Off Time	20	20	20
Handshaking	NORMAL	NORMAL	NORMAL
Access Level	0	0	0

CALLBACK NUMBERS

Callback Numbers (6-3...3)

Line Out			
Long Distance			
Local Toll			
Delay	10	10	10
Area Code			
Phone Number			

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1	59.4	01	13.5				
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

NETWORK

Network Parameters (6-4)

Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	
Field Access	
ATSPM	OFF

IP Address		22	8	150
Netmask	255	255	255	0
Broadcast	172	22	8	254
Gateway	172	22	8	1

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SPAT Network (6-5)

SPAT	1	2
Protocol	NONE	NONE
UDP Port	0	0

IP Address 0 . 0 . 0 . 0

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RAILROAD PREEMPTION

RR 1

Timing (3-1-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Grn	
Delay	
Exit	
Ped Clr	

Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 . . 4 . . 7 8	. . . .	. . . .	. . . .	. . . 4 . . . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .

Exit Parameters (3-1-5)

Phase Green	Ovrlap Green	Veh Permit/Call	Ped Permit/Call
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)

	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

RR 2

Timing (3-2-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Grn	
Delay	
Exit	
Ped Clr	

Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 2 3 . . 6 . .	. . . .	. . . .	. . . .	. 2 . . . 6 . .	. . . 4 . . . 8	. . . . .	. . . . .	. . . . .

Exit Parameters (3-2-5)

Phase Green	Ovrlap Green	Veh Permit/Call	Ped Permit/Call
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-2-6)

	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
5.8	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	RR1		Free	
Max ON		RR2		D2	
Max OFF		RR3		D3	

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6	
Port C	Port D

OUTPUTS

Loadswitch Assignments (2-1-6) +							
A	1	2	22	3	4	24	9
B	5	6	26	11	0	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:
- 0 Unused (no output)
- 1-8 Vehicle 1-8
- 9-14 Overlap A-F
- 21-28 Ped 1-8
- 41-47 Special Functions
- 41 Protected Permissive Flashing Phase 1
- 43 Protected Permissive Flashing Phase 3
- 45 Protected Permissive Flashing Phase 5
- 47 Protected Permissive Flashing Phase 7
- 51-57 Special Functions
- 71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

INTERVAL CONTROL

Interval Control (3-3-1)	
	Time
Step 1	
Step 2	
Step 3	
Step 4	
Step 5	
Step 6	
Step 7	
Step 8	

Phase Control (3-3-2)		
Hold	Force	Advance
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Recall (3-3-3)		
Veh Call	Ped Call	Int Call
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Permitted (3-3-4)		
Phs Permit	Ped Permit	Ovrlap Permit
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Configuration (3-3-5)			
Input	Port	Delay	HRI Cross
1			
2			

HRI

HRI Configuration (3-4)	
RailRoad	51
Line	
Group	

	WAYSIDE	ATC
Subnode		
Device		

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Enable in Local Plans (3-E-3)	
Plan 1-9	. . . . .
Plan 11-19	. . . . .

Queue Jump (3-E-4)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Input	
Type	Port
NONE	0.0
NONE	0.0

Output	
Stop	Go
0	0
0	0

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

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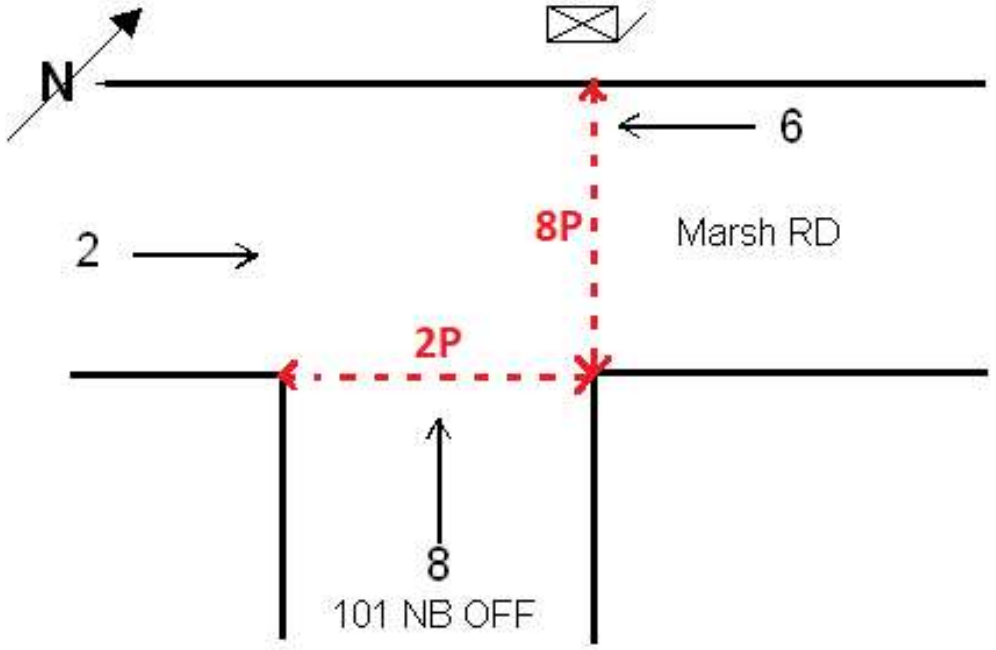
2070 Controller TSCP Timing Chart

Location: MARSH RD & RTE 101 NB OFF-RAMP
Designed By:
System: **District:** 04 **Installed By:**
Master At: **I/C:** **Service Info:**

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

			FLASH
PHASE	1)		[ ]
	2)	WB MARSH RD	[R]
	3)		[ ]
	4)		[ ]
	5)		[ ]
	6)	EB MARSH RD	[R]
	7)		[ ]
	8)	101 NB OFFRAMP	[R]
OVERLAP	A)		[ ]
	B)		[ ]
	C)		[ ]
	D)		[ ]
	E)		[ ]
	F)		[ ]

Intersection Layout



Comments and Notes:
TSCP 2.21 (BUILD 5e) – 09/07/2017
Connected to Central Systems Via Network Port thru Hirschman Switch (Port 8)
Flush Plans Implemented - 09/01/2016
New Coord - 12/18/2018
LPI Implemented - 05/23/2023 - EP

RAM Checksum

Page 2: 9CD9	Page 8: DB5A
Page 3: C958	Page 9: D2FD
Page 4: 1A11	Page 10: AB8A
Page 5: ECDF	Page 11: FDAC
Page 6: EE57	Page 12: D68F
Page 7: 490C	Page 13: 86F7

Post Mile: SM-101-03.593

Printed: 5/22/2023

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	. 2 . . . 6 . 8
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	. 2 . . . 6 . 8
Pedestrian Calls	. 2 8
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlap	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlaps	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. 2 8

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. 2 . . . . .
P3	. . . . .
P4	. . . . .
P5	. . . . .
P6	. . . . .
P7	. . . . .
P8	 8

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	4	0	10	0	10	0	4
Flash Don't Walk	0	22	0	10	0	10	0	16
Minimum Green	4	9	10	10	10	10	10	6
Det Limit	0	0	10	10	10	0	10	0
Max Initial	0	20	10	10	10	20	10	0
Max Green 1	10	32	50	50	50	32	50	26
Max Green 2	50	50	50	50	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	0.0	0.0	5.0	5.0	5.0	0.0	5.0	0.0
Maximum Gap	2.0	3.0	5.0	5.0	5.0	3.0	5.0	2.0
Minimum Gap	1.0	2.0	5.0	5.0	5.0	2.0	5.0	1.0
Add Per Vehicle	0.0	1.1	1.0	1.0	1.0	1.1	1.0	0.0
Reduce Gap By	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.1
Reduce Every	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Yellow	3.2	4.1	5.0	5.0	5.0	4.1	5.0	3.2
All-Red	0.0	0.5	1.0	1.0	1.0	0.5	1.0	1.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	3	0	0	0	0	0	3
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor	90		. . . . .	66				52				52		28
Plan 2	Green Factor	80		. . . . .	68				45				45		25
Plan 3	Green Factor	100		. . . . .	86				65				65		25
Plan 4	Green Factor	80		. . . . .	40				44				44		26
Plan 5	Green Factor	80		. . . . .	46				47				47		23
Plan 6	Green Factor	100		. . . . .	34				67				67		23
Plan 7	Green Factor	80		. . . . .	76				47				47		23
Plan 8	Green Factor			. . . . .											
Plan 9	Green Factor			. . . . .											

Master Timer Sync (7-A)	
Enable in Plans	
1-9	. . . . .
11-19	. . . . .
21-29	. . . . .

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	. . . . .
Veh Min	Veh Max
. 2 . . . 6 . .	. . . . .
Ped	Bike
. . . . .	. . . . .
Cond	Cond Grn
. . . . .	10

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 2	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 3	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 4	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 5	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 6	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 7	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 9	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-9
15 or 254 = Flash
14 or 255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor	180		.....	147	56	26		99				99		71
Plan 12	Green Factor	200		.....	191	73	59		114				114		76
Plan 13	Green Factor	220		.....	122	140	135		134				134		76
Plan 14	Green Factor	160		.....	142	113	143		109				109		41
Plan 15	Green Factor	180		.....	61	15	70		124				124		46
Plan 16	Green Factor	210		.....	193	84	168		154				154		46
Plan 17	Green Factor	180		.....	157	3	163		124				124		46
Plan 18	Green Factor	200		.....	22	170	51		139				139		51
Plan 19	Green Factor	220		.....	208	182	46		154				154		56

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 12	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 13	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 14	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 15	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 16	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 17	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 18	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....
Plan 19	.2.4.6.8	.2...6..	8	.....	.....	.....	.....	.....

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor	180		. . . . .	63				99				99		71
Plan 22	Green Factor	200		. . . . .	28				96				96		94
Plan 23	Green Factor	220		. . . . .	11				99				99		111
Plan 24	Green Factor	160		. . . . .	130				68				68		81
Plan 25	Green Factor	180		. . . . .	65				68				68		101
Plan 26	Green Factor	210		. . . . .	126				68				68		131
Plan 27	Green Factor	180		. . . . .	124				116				116		54
Plan 28	Green Factor	200		. . . . .	150				122				122		68
Plan 29	Green Factor	220		. . . . .	157				134				134		76

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 22	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 23	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 24	. 2 . 4 . 6 . 8	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 25	. 2 . 4 . 6 . 8	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 26	. 2 . 4 . 6 . 8	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 27	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 28	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 29	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

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DETECTORS

Detector Attributes (5-1)

Det	Type	Phases	Lock	Slot
1	COUNT+CALL+EXTEND	 8	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	CALL+EXTEND	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	 8	NO	I9U
18	COUNT+CALL+EXTEND	 8	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	CALL+EXTEND	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	 8	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	NO	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . . 5 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. 2	NO	I12U
42	PEDESTRIAN	. . . . .	NO	I12L
43	PEDESTRIAN	. . . . .	NO	I13U
44	PEDESTRIAN	 8	NO	I13L

Detector Configuration (5-2)

Det	Delay	Extend	Recall	Port
1	10		10	3.2
2			10	7.2
3		2.0	10	1.1
4			10	1.5
5			10	4.5
6			10	6.2
7			10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11			10	1.3
12			10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21			10	3.1
22			10	7.1
23		2.0	10	1.2
24			10	1.6
25			10	4.6
26			10	6.3
27			10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31		1.5	10	1.4
32		1.5	10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37			10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)

Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)

Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
0645	1	A
1000	2	A
1400	3	A
1900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
1000	5	A
1900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

Daylight Saving (8-6)

Enabled	YES

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1			. . . . .		. . . . .
2			. . . . .		. . . . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

	AB3418
	0
	1200
	NONE
	8
	1
	20
	20
	NORMAL

	AB3418
	0
	1200
	NONE
	8
	1
	20
	20
	NORMAL

	AB3418
	0
	1200
	NONE
	8
	1
	20
	20
	NORMAL

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

CALLBACK NUMBERS

Callback Numbers (6-3...3)

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

NETWORK

Network (6-4)

Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	0
Field Access	0

IP Address	172	.	22	.	8	.	149
Netmask	255	.	255	.	255	.	0
Broadcast	0	.	0	.	0	.	254
Gateway	172	.	22	.	8	.	1

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RAILROAD PREEMPTION

RR 1

(3-1-1)	Timing
Delay	
Clear 1	10
Clear 2	
Clear 3	
Hold	
Exit	5
Min Grn	
Ped Clr	

Phase Flags (3-1-2)		
Grn Hold	Yel Flash	Red Flash
. 2 . . 5 . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	1 2 3 4 5 6 7 8

Pedestrian Flags (3-1-3)		
Walk	Flash DW	Solid DW
. . . . .	. . . . .	. 2 . 4 . 6 . 8
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .

Overlap Flags (3-1-4)		
Grn Hold	Yel Flash	Red Flash
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	A B C D E F

Exit Parameters (3-1-5)

Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)

PR 1	PR 2	Latching	Power-Up
2.5	0.0	YES	FLASHING

RR 2

(3-2-1)	Timing
Delay	
Clear 1	10
Clear 2	
Clear 3	
Hold	
Exit	
Min Grn	
Ped Clr	

Phase Flags (3-2-2)		
Grn Hold	Yel Flash	Red Flash
. . . 4 . . 7 .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
1 2 3 . . 6 . .	. . . . .	. . . . .

Pedestrian Flags (3-2-3)		
Walk	Flash DW	Solid DW
. . . . .	. . . . .	. 2 . 4 . 6 . 8
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. 2 . . . 6 . .	. . . . .	. . . 4 . . . 8

Overlap Flags (3-2-4)		
Grn Hold	Yel Flash	Red Flash
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .
. . . . .	. . . . .	. . . . .

Exit Parameters (3-2-5)

Phase Green	Overlap Green	Vehicle Call	Ped Call
. . . . .	. . . . .	. . . 4 . . 7 .	. . . . .

Configuration (3-2-6)

PR 1	PR 2	Latching	Power-up
2.6	0.0	YES	DARK

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
5.5	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
5.6	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
5.7	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
5.8	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6)	
Port C	Port D
6.1	2.8

OUTPUTS

Loadswitch Assignments (2-1-6)							+
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:

0 Unused (no output)
1-8 Vehicle 1-8
9-14 Overlap A-F
21-28 Ped 1-8
41-47 Special Functions
41 Protected Permissive Flashing Phase 1
43 Protected Permissive Flashing Phase 3
45 Protected Permissive Flashing Phase 5
47 Protected Permissive Flashing Phase 7
51-57 Special Functions
71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Transit Priority Configuration (3-E-A)				Indicator Output	
Enable in Plans		Input	Type	Stop	Go
Plan 1-9	. . . . .	0.0	OPT	0	0
Plan 11-19	. . . . .	0.0	OPT	0	0

Queue Jump (3-E-B)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

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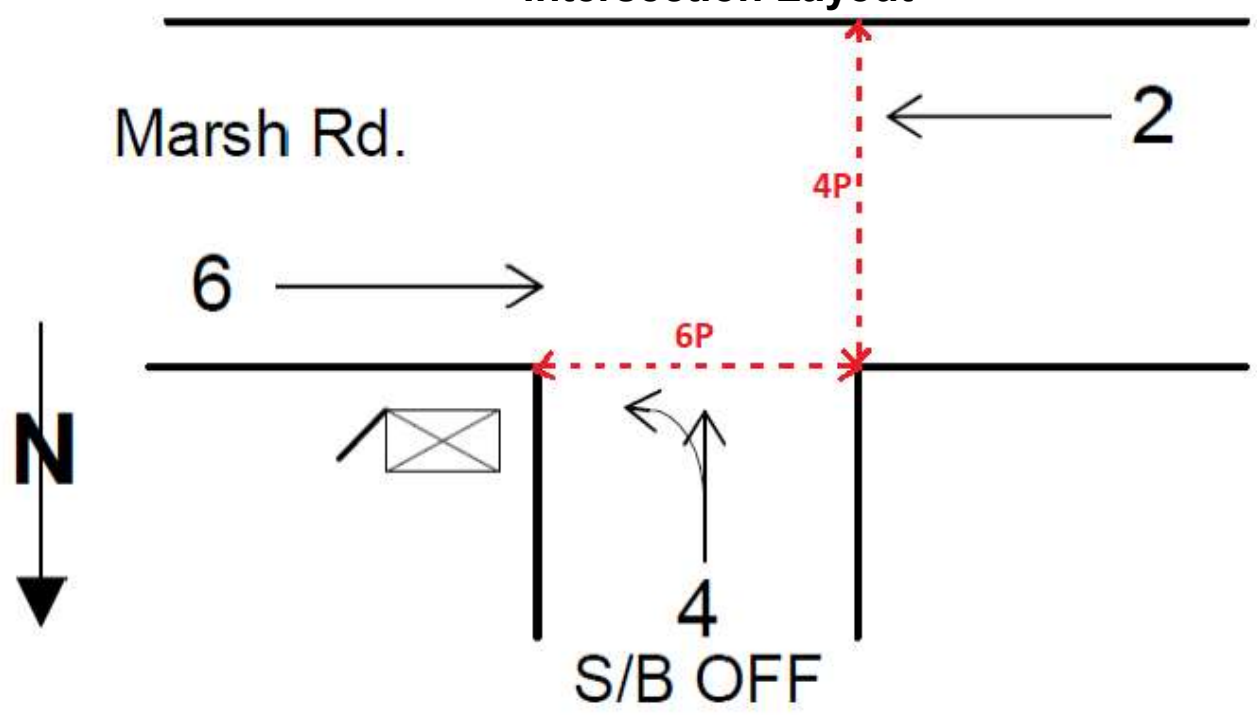
2070 Controller TSCP Timing Chart

Location: MARSH RD & RTE 101 S/B OFF-RAMP
System:
District: 04
Master At:
I/C:
Designed By:
Installed By:
Service Info:

Timing Change: **Date Start:** **Date End:** **Designed:** **Installed:**

		FLASH
PHASE	1)	[ ]
	2)	[R]
	3)	[ ]
	4)	[R]
	5)	[ ]
	6)	[R]
	7)	[ ]
	8)	[ ]
OVERLAP	A)	[ ]
	B)	[ ]
	C)	[ ]
	D)	[ ]
	E)	[ ]
	F)	[ ]

Intersection Layout



Comments and Notes:
TSCP 3.10 (Build 10) - 07/11/2022
Connected to Central Systems Via Wireless Network
Flush Plans Implemented - 09/01/2016
New Coord - 12/18/2018
Upgrade modem from 3G to FirstNet 4G - EP - 02/18/2022
LPI Implemented - 05/23/2023 - EP

RAM Checksum

Page 2: 283E	Page 8: DB5A
Page 3: 53CE	Page 9: E3DC
Page 4: AB9E	Page 10: 99EA
Page 5: A940	Page 11: F65F
Page 6: 4AB3	Page 12: 6828
Page 7: 0003	Page 13: 86F7

Post Mile: SM-101-03.592

Printed: 5/22/2023

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CONFIGURATION PHASE FLAGS

Cabinet (9-3)
332
Configuration
CALTRANS

Phases (2-1-1-1)	
Permitted	. 2 . 4 . 6 . .
Restricted	. . . . .

Phase Recalls (2-1-1-2)	
Vehicle Min	. 2 . . . 6 . .
Vehicle Max	. . . . .
Pedestrian	. . . . .
Bicycle	. . . . .

Phase Locks (2-1-1-3)	
Red	. . . . .
Yellow	. . . . .
Force/Max	. . . . .

Phase Features (2-1-1-4)	
Double Entry	. . . . .
Rest In Walk	. . . . .
Rest In Red	. . . . .
Walk 2	. . . . .
Max Green 2	. . . . .
Max Green 3	. . . . .

Startup (2-1-1-5)	
First Green Phases	. 2 . . . 6 . .
Yellow Start Phases	. . . . .
Vehicle Calls	. 2 . 4 . 6 . .
Pedestrian Calls	. . . 4 . 6 . .
Yellow Start Overlaps	. . . . .
Startup All-Red	6.0

Call To Phase (2-1-2-1)		Omit On Green	
1	. . . . .	1	. . . . .
2	. . . . .	2	. . . . .
3	. . . . .	3	. . . . .
4	. . . . .	4	. . . . .
5	. . . . .	5	. . . . .
6	. . . . .	6	. . . . .
7	. . . . .	7	. . . . .
8	. . . . .	8	. . . . .

Flashing Colors (2-1-2-2)	
Yellow Flash Phases	. . . . .
Yellow Flash Overlaps	. . . . .
Flash In Red Phases	. . . . .
Flash In Red Overlaps	. . . . .

Special Operation (2-1-2-3)	
Single Exit Phase	. . . . .
Driveway Signal Phases	. . . . .
Driveway Signal Overlaps	. . . . .
Leading Ped Phases	. . . 4 . 6 . .

Protected Permissive (2-1-2-4)	
Protected Permissive	. . . . .

Pedestrian (2-1-3)	
P1	. . . . .
P2	. . . . .
P3	. . . . .
P4	. . . 4 . . . .
P5	. . . . .
P6	. . . . . 6 . .
P7	. . . . .
P8	. . . . .

Overlap (2-1-4)				
Overlap	Parent	Omit	No Start	Not
A	. . . . .	. . . . .	. . . . .	. . . . .
B	. . . . .	. . . . .	. . . . .	. . . . .
C	. . . . .	. . . . .	. . . . .	. . . . .
D	. . . . .	. . . . .	. . . . .	. . . . .
E	. . . . .	. . . . .	. . . . .	. . . . .
F	. . . . .	. . . . .	. . . . .	. . . . .

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PHASE TIMING

Phase (2-2)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 1 ---	0	10	0	4	0	4	0	10
Flash Don't Walk	0	10	0	20	0	16	0	10
Minimum Green	10	8	10	6	4	8	10	10
Det Limit	10	20	10	0	0	20	10	10
Max Initial	10	0	10	0	0	0	10	10
Max Green 1	50	32	50	32	10	32	50	50
Max Green 2	50	50	50	60	50	50	50	50
Max Green 3	50	50	50	50	50	50	50	50
Extension	5.0	0.0	5.0	0.0	0.0	0.0	5.0	5.0
Maximum Gap	5.0	2.0	5.0	2.0	1.5	2.0	5.0	5.0
Minimum Gap	5.0	1.0	5.0	1.0	1.0	1.0	5.0	5.0
Add Per Vehicle	1.0	0.0	1.0	0.0	0.0	0.0	1.0	1.0
Reduce Gap By	0.0	0.1	0.0	0.1	0.1	0.1	0.0	0.0
Reduce Every	1.0	1.5	1.0	1.0	0.8	1.5	1.0	1.0
Yellow	5.0	4.1	5.0	3.1	3.1	4.1	5.0	5.0
All-Red	1.0	0.5	1.0	1.0	0.0	0.5	1.0	1.0

Ped/Bike (2-3)	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
--- Walk 2 ---	0	0	0	0	0	0	0	0
Delay/Early Walk	0	0	0	3	0	3	0	0
Solid Don't Walk	0	0	0	0	0	0	0	0
Bike Green	0	0	0	0	0	0	0	0
Bike All-Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

OVERLAP TIMING

Overlap (2-4)	A	B	C	D	E	F
Green	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	5.0	5.0	5.0	5.0	5.0	5.0
Red	0.0	0.0	0.0	0.0	0.0	0.0

Red Revert

Red Revert (2-5)	
Time	2.0
All-Red Sec/Min (2-6)	
All-Red Sec/Min:	OFF

Max 2 Extension

Max/Gap Out (2-7)	
Max Cnt	0
Gap Cnt	0

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Local Plan 1...9 (7-1) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 1	Green Factor	90		. . . . .	72				44		36		44		
Plan 2	Green Factor	80		. . . . .	33				33		37		33		
Plan 3	Green Factor	100		. . . . .	10				34		56		34		
Plan 4	Green Factor	80		. . . . .	52				39		31		39		
Plan 5	Green Factor	80		. . . . .	61				35		35		35		
Plan 6	Green Factor	100		. . . . .	58				25		65		25		
Plan 7	Green Factor	80		. . . . .					27		43		27		
Plan 8	Green Factor			. . . . .											
Plan 9	Green Factor			. . . . .											

Local Plan 1...9 (7-1) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 1	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 2	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 3	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 4	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 5	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 6	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 7	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 8	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 9	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

Master Timer Sync (7-A)	
Enable in Plans	
1-9	. . . . .
11-19	. . . . .
21-29	. . . . .

Master Sub Master	
Input	
Output	

FREE PLAN PHASE FLAGS

(7-E) Free	
Lag	Omit
. 2 . 4 . 6 . 8	. . . . .
Veh Min	Veh Max
. 2 . . . 6 . .	. . . . .
Ped	Bike
. . . . .	. . . . .
Cond	Cond Grn
. . . . .	10

MANUAL COMMANDS

Manual Plan (4-1)	
Plan	OffSet
	A

Plan: 1-29
254 = Flash
255 = Free
Offset A, B, or C

Special Function Override (4-2)			
#	Control	#	Control
1	NORMAL	3	NORMAL
2	NORMAL	4	NORMAL

Detector Reset	(4-3)
Local Manual (4-4)	OFF

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Local Plan 11...19 (7-2) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 11	Green Factor	180		. . . . .	116				104		65	12	89		
Plan 12	Green Factor	200		. . . . .	141				108		81	12	93		
Plan 13	Green Factor	220		. . . . .	141				108		101	12	93		
Plan 14	Green Factor	160		. . . . .	111				66		83	5	58		
Plan 15	Green Factor	180		. . . . .	4				66		103	5	58		
Plan 16	Green Factor	210		. . . . .	82				56		143	5	48		
Plan 17	Green Factor	180		. . . . .	165				76		93	22	51		
Plan 18	Green Factor	200		. . . . .	146				83		106	27	53		
Plan 19	Green Factor	220		. . . . .	168				86		123	12	71		

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	. 2 . 4 . 6 . 8	. . . 4	. . . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 12	. 2 . 4 . 6 . 8	. . . 4	. . . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 13	. 2 . 4 . 6 . 8	. . . 4	. . . . . 6 . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 14	. 2 . 4 . 6 . 8	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 15	. 2 . 4 . 6 . 8	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 16	. 2 . 4 . 6 . 8	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 17	. 2 . 4 . 6 . 8	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 18	. 2 . 4 . 6 . 8	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 19	. 2 . 4 . 6 . 8	. . . 4	. 2	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

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Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

[Offsets] Green Factors or Press [F] to Select Force-Off

		Cycle	Multi	Lag Gap	A	B	C	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-
Plan 21	Green Factor	180		. . . . .	106	170	115		109		61	12	109		
Plan 22	Green Factor	200		. . . . .	175	21	175		129		61	12	129		
Plan 23	Green Factor	220		. . . . .	103	21	119		149		61	17	149		
Plan 24	Green Factor	160		. . . . .	84	12	84		99		51	17	99		
Plan 25	Green Factor	180		. . . . .	179	82	8		119		51	17	119		
Plan 26	Green Factor	210		. . . . .	121	140	101		144		56	17	144		
Plan 27	Green Factor	180		. . . . .	65	26	65		84		86	9	84		
Plan 28	Green Factor	200		. . . . .	134	45	145		104		86	9	104		
Plan 29	Green Factor	220		. . . . .	137	35	152		114		96	12	114		

Local Plan 21...29 (7-3) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 21	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 22	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 23	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 24	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 25	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 26	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 27	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 28	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .
Plan 29	. 2 . 4 . 6 . 8	. 2 . . . 6 . .	. . . 4	. . . . .	. . . . .	. . . . .	. . . . .	. . . . .

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DETECTORS

Detector Attributes (5-1)

Det	Type	Phases	Lock	Slot
1	COUNT+CALL+EXTEND	1	NO	I1U
2	COUNT+CALL+EXTEND	1	NO	I1L
3	COUNT+CALL+EXTEND	. 2	NO	I2U
4	COUNT+CALL+EXTEND	. 2	NO	I2L
5	COUNT+CALL+EXTEND	. 2	NO	I3U
6	CALL+EXTEND	. 2	NO	I3L
7	LIMITED	. 2	NO	I4U
8	COUNT+CALL+EXTEND	. 2	NO	I4L
9	COUNT+CALL+EXTEND	. . 3	NO	I5U
10	COUNT+CALL+EXTEND	. . 3	NO	I5L
11	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6U
12	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I6L
13	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I7U
14	CALL+EXTEND	. . . 4 . . .	NO	I7L
15	LIMITED	. . . 4 . . .	NO	I8U
16	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I8L
17	COUNT+CALL+EXTEND	1	NO	I9U
18	COUNT+CALL+EXTEND	. . 3	NO	I9L
19	COUNT+CALL+EXTEND	. 2	NO	I10U
20	COUNT+CALL+EXTEND	. . . 4 . . .	NO	I10L
21	COUNT+CALL+EXTEND	. . . 4 . . .	NO	J1U
22	COUNT+CALL+EXTEND	. . . . 5 . .	NO	J1L
23	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2U
24	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J2L
25	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J3U
26	CALL+EXTEND	. . . . . 6 . .	NO	J3L
27	LIMITED	. . . . . 6 . .	NO	J4U
28	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J4L
29	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5U
30	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J5L
31	COUNT+CALL+EXTEND	 8	NO	J6U
32	COUNT+CALL+EXTEND	 8	NO	J6L
33	COUNT+CALL+EXTEND	 8	NO	J7U
34	CALL+EXTEND	 8	NO	J7L
35	LIMITED	 8	NO	J8U
36	COUNT+CALL+EXTEND	 8	NO	J8L
37	COUNT+CALL+EXTEND	. . . 4 . . .	NO	J9U
38	COUNT+CALL+EXTEND	. . . . . 7 .	NO	J9L
39	COUNT+CALL+EXTEND	. . . . . 6 . .	NO	J10U
40	COUNT+CALL+EXTEND	 8	NO	J10L
41	PEDESTRIAN	. . . . .	NO	I12U
42	PEDESTRIAN	. . . 4 . . .	NO	I12L
43	PEDESTRIAN	. . . . . 6 . .	NO	I13U
44	PEDESTRIAN	. . . . .	NO	I13L

Detector Configuration (5-2)

Det	Delay	Extend	Recall	Port
1			10	3.2
2			10	7.2
3		2.0	10	1.1
4		2.0	10	1.5
5			10	4.5
6			10	6.2
7		0.5	10	2.1
8			10	7.4
9			10	3.4
10			10	7.6
11		2.0	10	1.3
12		2.0	10	1.7
13			10	4.7
14			10	6.4
15			10	2.3
16			10	7.8
17			10	3.6
18			10	3.8
19			10	4.1
20			10	4.2
21	15		10	3.1
22			10	7.1
23		2.0	10	1.2
24		2.0	10	1.6
25			10	4.6
26			10	6.3
27		0.5	10	2.2
28			10	7.3
29			10	3.3
30			10	7.5
31			10	1.4
32			10	1.8
33			10	4.8
34			10	6.5
35			10	2.4
36			10	7.7
37	1		10	3.5
38			10	3.7
39			10	4.3
40			10	4.4
41			10	5.1
42			10	5.3
43			10	5.2
44			10	5.4

Failure Times(5-3)	Minutes
Maximum On Time	
Fail Reset Time	

Failure Override (5-4)

Detectors 1-8	. . . . .
Detectors 9-16	. . . . .
Detectors17-24	. . . . .
Detectors 25-32	. . . . .
Detectors 33-40	. . . . .
Detectors 41-44	. . . . .

System Detector Assignment (5-5)

Sys Det	1	2	3	4	5	6	7	8
Det Num								
Sys Det	9	10	11	12	13	14	15	16
Det Num								

CIC Operation (5-6-1)

Enable in Plans	. . . . .

CIC Values (5-6-2)	Volume	Occupancy	Demand
Smoothing	0.66	0.66	0.66
Multiplier	4.0	0.33	
Exponent	0.50	1.00	

Detector-to-Phase Assignment (5-6-3)

Sys Det	1	2	3	4	5	6	7	8
Phase								
Sys Det	9	10	11	12	13	14	15	16
Phase								

Input File Port-Bit Assignments

332 Cabinet - For Reference Only

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
I-	3.2	1.1	4.5	2.1	3.4	1.3	4.7	2.3	3.6	4.1	6.6	5.1	5.2	6.7
	7.2	1.5	6.2	7.4	7.6	1.7	6.4	7.8	3.8	4.2	2.7	5.3	5.4	6.8
J-	3.1	1.2	4.6	2.2	3.3	1.4	4.8	2.4	3.5	4.3	2.8	5.5	5.6	2.5
	7.1	1.6	6.3	7.3	7.5	1.8	6.5	7.7	3.7	4.4	6.1	5.7	5.8	2.6

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TOD SCHEDULE

Table 1 (8-2-1)		
Time	Plan	OS
0645	1	A
1000	2	A
1400	3	A
1900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 2 (8-2-2)		
Time	Plan	OS
1000	5	A
1900	255	A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 3 (8-2-3)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 4 (8-2-4)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 5 (8-2-5)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

Table 6 (8-2-6)		
Time	Plan	OS
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A
		A

WEEKDAY ASSIGNMENT

Weekday Table Assignments (8-2-7)						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
1	1	1	1	1	2	2

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HOLIDAY TABLES

Floating Holiday Table (8-2-8)

#	Mnth	Week	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Fixed Holiday Table (8-2-9)

#	Mnth	Day	DOW	Table
1			. . . . .	
2			. . . . .	
3			. . . . .	
4			. . . . .	
5			. . . . .	
6			. . . . .	
7			. . . . .	
8			. . . . .	
9			. . . . .	
10			. . . . .	
11			. . . . .	
12			. . . . .	
13			. . . . .	
14			. . . . .	
15			. . . . .	
16			. . . . .	

Daylight Saving (8-1)

Enabled	YES	Month	Sunday
	Start	MAR	2nd
	End	NOV	1st

Solar Clock Data (8-4)

North Latitude	34
West Longitude	118
Local Time Zone	8

Sabbatical Clock (8-5)

Hebrew	Ped Recall
Sabbath	. . . . .
Holiday	. . . . .

TOD FUNCTIONS

TOD Functions (8-3)

#	Start	End	DOW	Action	Phases
1	1400	1900	M T W T F . .	17	. . . 4 . . . .
2			. . . . .		. . . . .
3			. . . . .		. . . . .
4			. . . . .		. . . . .
5			. . . . .		. . . . .
6			. . . . .		. . . . .
7			. . . . .		. . . . .
8			. . . . .		. . . . .
9			. . . . .		. . . . .
10			. . . . .		. . . . .
11			. . . . .		. . . . .
12			. . . . .		. . . . .
13			. . . . .		. . . . .
14			. . . . .		. . . . .
15			. . . . .		. . . . .
16			. . . . .		. . . . .

Action Codes:

0. None
1. Permitted
2. Restricted
4. Veh Min Recall
5. Veh Max Recall
6. Ped Recall
7. Bike Recall
8. Red Lock
9. Yellow Lock
10. Force/Max Lock
11. Double Entry
12. Y-Coord C
13. Y-Coord D
14. Free
15. Flashing
16. Walk 2
17. Max Green 2
18. Max Green 3
19. Rest in Walk
20. Rest in Red
21. Free Lag Phases
22. Special Functions
23. Truck Preempt
24. Conditional Service
25. Conditional Service
26. Leading Ped
27. Traffic Actuated Max 2
41. Protected Permissive
42. Protected Permissive

Action Code = Phases added to normal setting

100+Action Code = Phases removed

200+Action Code = Phases replaced

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COMMUNICATIONS

	C2 (6-1-1)	C20 (6-1-2)	C21 (6-1-3)
Address			
Baud	1200	1200	1200
Protocol	AB3418	AB3418	AB3418
Data Bits	8	8	8
Parity	NONE	NONE	NONE
Stop Bits	1	1	1
RTS On Time	20	20	20
RTS Off Time	20	20	20
Handshaking	NORMAL	NORMAL	NORMAL
Access Level	0	0	0

CALLBACK NUMBERS

Callback Numbers (6-3...3)			
Line Out			
Long Distance			
Local Toll			
Delay	10	10	10
Area Code			
Phone Number			

SOFT LOGIC

Soft Logic (6-2)

#	Data	OP	Data	OP	Data	OP	Data
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

*Refer to User's Manual for Data and OP Codes

NETWORK

Network Parameters (6-4)	
Address	1
Protocol	AB3418
Port	27000
Type	STATIC
Central Access	
Field Access	
ATSPM	OFF

IP Address		.	168	.	1	.	101
Netmask	255	.	255	.	255	.	0
Broadcast	192	.	168	.	1	.	255
Gateway	192	.	168	.	1	.	1

Access Levels:

0-Full Access
1-Status Only
2-Status, Set Pattern, Time
3-Status, Set Pattern, Time, Manual Plan
4-Reserved
5-Full Access with No Set Pattern
6-Full Access with No Set Time
7-Full Access with No Set Pattern, Manual Plan
8-Full Access with No Set Time, Pattern, Manual Plan

SPAT Network (6-5)		
SPAT	1	2
Protocol	NONE	NONE
UDP Port	0	0

IP Address	0	.	0	.	0	.	0

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RAILROAD PREEMPTION

RR 1

Timing (3-1-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Grn	
Delay	
Exit	
Ped Clr	

Phase Flags (3-1-2)			Pedestrian Flags (3-1-3)			Overlap Flags (3-1-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. 2 . . 5 . . .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 . . 4 . . 7 8	. . . .	. . . .	. . . .	. . . 4 . . . 8	. 2 . . . 6 . .	. . . . .	. . . . .	. . . . .

Exit Parameters (3-1-5)			
Phase Green	Ovrlap Green	Veh Permit/Call	Ped Permit/Call
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-1-6)								
	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

RR 2

Timing (3-2-1)	
Clear 1	15
Clear 2	5
Clear 3	
Hold	
Min Grn	
Delay	
Exit	
Ped Clr	

Phase Flags (3-2-2)			Pedestrian Flags (3-2-3)			Overlap Flags (3-2-4)		
Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . 4 . . 7 .	. . . .	. . . .	. . . .	. . . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .	. . . . .
. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . . . .	. . . . .	. . . . .
1 2 3 . . 6 . .	. . . .	. . . .	. . . .	. 2 . . . 6 . .	. . . 4 . . . 8	. . . . .	. . . . .	. . . . .

Exit Parameters (3-2-5)			
Phase Green	Ovrlap Green	Veh Permit/Call	Ped Permit/Call
. 2 . . . 6 . .	. . . . .	1 2 3 4 5 6 7 8	. 2 . 4 . 6 . 8

Configuration (3-2-6)								
	PR	XR	Gate	Isld	APP	Sign	Sign	Max On	Latching
1								5	NO
2									

Valid Inputs: 1.x, 2.x, 3.x, 4.x, 5.x, 6.x, 7.x, 8.x x=1 to 8
Valid Outputs: 11.x, 12.x, 13.x, 14.x, 15.x, 16.x, 17.x, 18.x x=1 to 8

EMERGENCY VEHICLE PREEMPTION

EVA (3-A)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. 2 . . 5 . . .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVB (3-B)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . . 4 . . 7 .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVC (3-C)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	1 . . . . 6 . .	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

EVD (3-D)

Preempt Timers			Phase Green	Overlap Green
Delay	Clear	Max		
	5	30	. . 3 8	. . . . .

Port	Latching	Phase Termination
	NO	ADVANCE

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INPUTS

		7 Wire I/C (2-1-5-1)			
		Input	Port	Input	Port
Enable	NO	RR1		Free	
Max ON		RR2		D2	
Max OFF		RR3		D3	

Manual Control (2-1-5-2)	
Input	Port
Manual Advance	
Advance Enable	

Cabinet Status (2-1-5-3)	
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Special Function (2-1-5-4)	
Input	Port
1	
2	
3	
4	

Battery Backup (2-1-5-5)	
Port	Operation
2.7	FLASHING

Y-Coordination (2-1-5-6	
Port C	Port D

OUTPUTS

Loadswitch Assignments (2-1-6) +							
A	1	2	22	3	4	24	9
B	5	6	26	7	8	28	10
X	13	14	0	11	12	0	0

Loadswitch Codes:
- 0 Unused (no output)
- 1-8 Vehicle 1-8
- 9-14 Overlap A-F
- 21-28 Ped 1-8
- 41-47 Special Functions
- 41 Protected Permissive Flashing Phase 1
- 43 Protected Permissive Flashing Phase 3
- 45 Protected Permissive Flashing Phase 5
- 47 Protected Permissive Flashing Phase 7
- 51-57 Special Functions
- 71-72 Seven Wire I/C

+ middle output of loadswitches 3 and 6 Channel 9 and 10

INTERVAL CONTROL

Interval Control (3-3-1)	
	Time
Step 1	
Step 2	
Step 3	
Step 4	
Step 5	
Step 6	
Step 7	
Step 8	

Phase Control (3-3-2)		
Hold	Force	Advance
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Recall (3-3-3)		
Veh Call	Ped Call	Int Call
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Phase Permitted (3-3-4)		
Phs Permit	Ped Permit	Ovrlap Permit
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....

Configuration (3-3-5)			
Input	Port	Delay	HRI Cross
1			
2			

HRI

HRI Configuration (3-4)	
RailRoad	51
Line	
Group	

	WAYSIDE	ATC
Subnode		
Device		

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TRANSIT PRIORITY

Local Plans (3-E) 1...9 11...19		Early Green	Green Extend	Inhibit Cycles	Phase 1 Minimum	Phase 2 Minimum	Phase 3 Minimum	Phase 4 Minimum	Phase 5 Minimum	Phase 6 Minimum	Phase 7 Minimum	Phase 8 Minimum
Plan 1	Green Factor											
Plan 2	Green Factor											
Plan 3	Green Factor											
Plan 4	Green Factor											
Plan 5	Green Factor											
Plan 6	Green Factor											
Plan 7	Green Factor											
Plan 8	Green Factor											
Plan 9	Green Factor											
Plan 11	Green Factor											
Plan 12	Green Factor											
Plan 13	Green Factor											
Plan 14	Green Factor											
Plan 15	Green Factor											
Plan 16	Green Factor											
Plan 17	Green Factor											
Plan 18	Green Factor											
Plan 19	Green Factor											

Enable in Local Plans (3-E-3)	
Plan 1-9	. . . . .
Plan 11-19	. . . . .

Queue Jump (3-E-4)	
Grn Hold	Hold Phase
	. . . . .
	. . . . .

Input	
Type	Port
NONE	0.0
NONE	0.0

Output	
Stop	Go
0	0
0	0

Free Plans (3-E-E)	
Max Grn Hold	Hold Phase
	. . . . .

Access Utilities (9-5)	
Password	***
Timeout	30

YELLOW YIELD COORDINATION

					Force-Offs											
Y-Coord Plans (7-C,D)	Long Grn	No Grn	Offset	Perm	-1-	-2-	-3-	-4-	-5-	-6-	-7-	-8-	Coord	Lag	Min Recall	Restricted
Plan C													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .
Plan D													. 2 . . . 6 . .	. 2 . 4 . 6 . 8	. . . . .	. . . . .

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	Clearance	Next Priority	Phase Green	Det 2 Port	Det 3 Port	Det 4 Port	Sign Output	Slave Input	Slave Output
					. . . . .	0.0	0.0	0.0	0	0.0	0

Attachment 9 – Synchro Delay and Queuing Reports

Note that the Synchro reports of intersection LOS analysis exchange the directional label assignments as follows: north (in the main report) with west (in Attachment 9), south with east, east with north, and west with south, respectively. This is due to the development of Synchro models prior to the finalization of the labeling convention in the main report.

Attachment 9 provides modeling results that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

It should be noted that there exist the following directionality differences between the designations in the Synchro models and those described in the report:

- For Seaport Blvd, Maple St, Whipple Ave, Woodside Rd, and Marsh Rd, the directionality designation is north-south in Synchro, while being east-west in the report.
- For Veterans Blvd, US 101, and other cross streets along Seaport Blvd, Maple St, Whipple Ave, Woodside Rd, and Marsh Rd, the directionality designation is east-west in Synchro, while being north-south in the report.

Existing AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	3	34	37	3	158	248
Future Volume (vph)	3	34	37	3	158	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.876					0.850
Flt Protected				0.956	0.950	
Satd. Flow (prot)	1311	0	0	1730	1752	1568
Flt Permitted				0.956	0.950	
Satd. Flow (perm)	1311	0	0	1730	1752	1568
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles (%)	27%	27%	5%	5%	3%	3%
Adj. Flow (vph)	4	43	48	4	223	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	52	223	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	34	37	3	158	248
Future Vol, veh/h	3	34	37	3	158	248
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles, %	27	27	5	5	3	3
Mvmt Flow	4	43	48	4	223	349
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	8.4	8.9	10
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	93%
Vol Thru, %	0%	0%	8%	7%
Vol Right, %	0%	100%	92%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	248	37	40
LT Vol	158	0	0	37
Through Vol	0	0	3	3
RT Vol	0	248	34	0
Lane Flow Rate	223	349	46	52
Geometry Grp	5	5	2	2
Degree of Util (X)	0.329	0.4	0.065	0.078
Departure Headway (Hd)	5.329	4.127	5.03	5.383
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	679	877	713	666
Service Time	3.029	1.827	3.056	3.408
HCM Lane V/C Ratio	0.328	0.398	0.065	0.078
HCM Control Delay	10.6	9.6	8.4	8.9
HCM Lane LOS	B	A	A	A
HCM 95th-tile Q	1.4	1.9	0.2	0.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	18	406	70	1
Future Volume (vph)	0	0	18	406	70	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.998	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1719	3438	3053	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1719	3438	3053	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.72	0.72	0.83	0.83
Heavy Vehicles (%)	2%	2%	5%	5%	18%	18%
Adj. Flow (vph)	0	0	25	564	84	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	25	564	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	18	406	70	1
Future Vol, veh/h	0	0	18	406	70	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	72	72	83	83
Heavy Vehicles, %	2	2	5	5	18	18
Mvmt Flow	0	0	25	564	84	1

Major/Minor	Minor2		Major2	
Conflicting Flow All	85	85	-	0
Stage 1	85	85	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.9	6.6	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.55	4.05	-	-
Pot Cap-1 Maneuver	898	798	-	-
Stage 1	920	817	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	898	0	-	-
Mov Cap-2 Maneuver	898	0	-	-
Stage 1	920	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

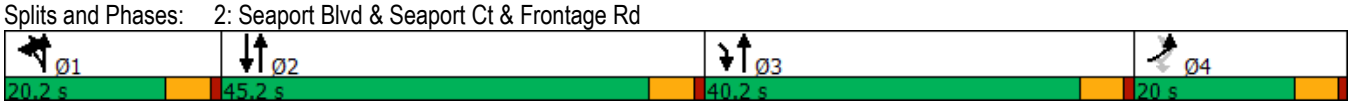
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	898	-	-	-	-
HCM Lane V/C Ratio	0.028	-	-	-	-
HCM Control Delay (s)	9.1	-	-	-	-
HCM Lane LOS	A	-	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	13	28	13	424	69	1	0	33	1
Future Volume (vph)	0	13	28	13	424	69	1	0	33	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60		265			0	0	0	
Storage Lanes	1	1		1			0	0	1	
Taper Length (ft)	25			50				25		
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00						
Frt		0.850				0.998			0.865	
Flt Protected				0.950						
Satd. Flow (prot)	1759	1495	0	1626	3252	3079	0	0	1015	0
Flt Permitted				0.950						
Satd. Flow (perm)	1759	1474	0	1620	3252	3079	0	0	1015	0
Right Turn on Red		Yes								No
Satd. Flow (RTOR)		883								
Link Speed (mph)	30				35	35		30		
Link Distance (ft)	369				675	1774		538		
Travel Time (s)	8.4				13.1	34.6		12.2		
Confl. Peds. (#/hr)		2	1							1
Peak Hour Factor	0.54	0.54	0.76	0.76	0.76	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles (%)	8%	8%	11%	11%	11%	17%	17%	62%	62%	62%
Adj. Flow (vph)	0	24	37	17	558	82	1	0	39	1
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	24	0	54	558	83	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	12				12	12		0		
Link Offset(ft)	0				0	0		0		
Crosswalk Width(ft)	16				16	16		16		
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	2	2			1	
Detector Template	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)					94	94				
Detector 2 Size(ft)					6	6				
Detector 2 Type					Cl+Ex	Cl+Ex				
Detector 2 Channel										
Detector 2 Extend (s)					0.0	0.0				

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Detector Phase	4	4	1	1	2	2			3	
Switch Phase										
Minimum Initial (s)	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	20.0	20.0	20.2	20.2		45.2			40.2	
Total Split (%)	15.9%	15.9%	16.1%	16.1%		36.0%			32.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0		40.0			35.0	
Yellow Time (s)	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0								
Pedestrian Calls (#/hr)	2	2								
Act Effct Green (s)		14.5		11.5	41.5	26.5			12.7	
Actuated g/C Ratio		0.30		0.23	0.85	0.54			0.26	
v/c Ratio		0.02		0.14	0.20	0.05			0.15	
Control Delay		0.1		25.9	4.5	21.3			26.4	
Queue Delay		0.0		0.0	0.0	0.0			0.0	
Total Delay		0.1		25.9	4.5	21.3			26.4	
LOS		A		C	A	C			C	
Approach Delay	0.1				6.4	21.3		26.4		
Approach LOS	A				A	C		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 49.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.20			
Intersection Signal Delay: 8.9		Intersection LOS: A	
Intersection Capacity Utilization 39.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	13	28	13	424	69	1	0	33	1
Future Volume (vph)	0	13	28	13	424	69	1	0	33	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00		1.00	0.95	0.95			1.00	
Frpb, ped/bikes		0.99		1.00	1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00			1.00	
Frt		0.85		1.00	1.00	1.00			0.86	
Flt Protected		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1476		1626	3252	3080			1015	
Flt Permitted		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1476		1626	3252	3080			1015	
Peak-hour factor, PHF	0.54	0.54	0.76	0.76	0.76	0.84	0.84	0.85	0.85	0.85
Adj. Flow (vph)	0	24	37	17	558	82	1	0	39	1
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2	0	54	558	83	0	0	40	0
Confl. Peds. (#/hr)		2	1							1
Heavy Vehicles (%)	8%	8%	11%	11%	11%	17%	17%	62%	62%	62%
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Actuated Green, G (s)		4.9		5.7	42.4	23.2			3.1	
Effective Green, g (s)		4.9		5.7	42.4	23.2			3.1	
Actuated g/C Ratio		0.09		0.10	0.74	0.40			0.05	
Clearance Time (s)		5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		125		161	2397	1242			54	
v/s Ratio Prot				0.03	c0.17	0.03			c0.04	
v/s Ratio Perm		c0.00								
v/c Ratio		0.02		0.34	0.23	0.07			0.74	
Uniform Delay, d1		24.1		24.1	2.4	10.5			26.8	
Progression Factor		1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.1		1.7	0.1	0.0			44.0	
Delay (s)		24.1		25.8	2.5	10.5			70.8	
Level of Service		C		C	A	B			E	
Approach Delay (s)	24.1				4.5	10.5		70.8		
Approach LOS	C				A	B		E		

Intersection Summary			
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	57.5	Sum of lost time (s)	20.6
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	66	473	460	109	6
Future Volume (vph)	5	66	473	460	109	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.870	0.850			0.993	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1441	1346	1736	3471	2756	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1441	1346	1736	3471	2756	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	40	46			5	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.77	0.77	0.83	0.83	0.81	0.81
Heavy Vehicles (%)	14%	14%	4%	4%	30%	30%
Adj. Flow (vph)	6	86	570	554	135	7
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	46	46	570	554	142	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	25.0	25.0	37.2	74.4	37.2	
Total Split (%)	25.2%	25.2%	37.4%	74.8%	37.4%	
Maximum Green (s)	20.0	20.0	32.0	69.2	32.0	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.2	10.2	31.8	48.7	10.3	
Actuated g/C Ratio	0.16	0.16	0.50	0.76	0.16	
v/c Ratio	0.18	0.18	0.66	0.21	0.32	
Control Delay	12.6	10.9	18.1	3.5	26.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	12.6	10.9	18.1	3.5	26.9	
LOS	B	B	B	A	C	
Approach Delay	11.7			10.9	26.9	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
Cycle Length: 99.4
Actuated Cycle Length: 64
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 12.6 Intersection LOS: B
Intersection Capacity Utilization 49.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	66	473	460	109	6
Future Volume (vph)	5	66	473	460	109	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.87	0.85	1.00	1.00	0.99	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1440	1346	1736	3471	2755	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1440	1346	1736	3471	2755	
Peak-hour factor, PHF	0.77	0.77	0.83	0.83	0.81	0.81
Adj. Flow (vph)	6	86	570	554	135	7
RTOR Reduction (vph)	35	41	0	0	4	0
Lane Group Flow (vph)	11	5	570	554	138	0
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	14%	14%	4%	4%	30%	30%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	7.6	7.6	31.8	47.4	10.4	
Effective Green, g (s)	7.6	7.6	31.8	47.4	10.4	
Actuated g/C Ratio	0.12	0.12	0.49	0.73	0.16	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	167	156	846	2523	439	
v/s Ratio Prot	c0.01		c0.33	0.16	c0.05	
v/s Ratio Perm		0.00				
v/c Ratio	0.06	0.03	0.67	0.22	0.31	
Uniform Delay, d1	25.6	25.5	12.7	2.9	24.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.1	2.1	0.0	0.4	
Delay (s)	25.8	25.6	14.9	2.9	24.7	
Level of Service	C	C	B	A	C	
Approach Delay (s)	25.7			9.0	24.7	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	11.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	65.2	Sum of lost time (s)	15.4
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

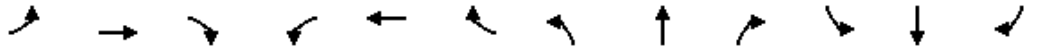
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	74	99	242	81	61	91	777	182	10	142	23
Future Volume (vph)	96	74	99	242	81	61	91	777	182	10	142	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	75		50	200		250	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (prot)	1410	1484	1262	1603	1645	1509	1671	3343	1495	1444	2817	0
Flt Permitted	0.950			0.950	0.566		0.950			0.950		
Satd. Flow (perm)	1408	1484	1262	1603	955	1489	1668	3343	1495	1444	2817	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			133			202		13	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			337			574			1022	
Travel Time (s)		12.7			7.7			11.2			19.9	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Adj. Flow (vph)	112	86	115	272	91	69	101	863	202	14	195	32
Shared Lane Traffic (%)				34%								
Lane Group Flow (vph)	112	86	115	180	183	69	101	863	202	14	227	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	7 4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	13.1	13.1	23.1	23.1	23.1	14.1	32.1	
Total Split (s)	27.0	27.0	27.0	29.1	29.1	29.1	41.1	69.1	69.1	17.1	45.1	
Total Split (%)	19.0%	19.0%	19.0%	20.4%	20.4%	20.4%	28.9%	48.6%	48.6%	12.0%	31.7%	
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0	24.0	36.0	64.0	64.0	12.0	40.0	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)					7.0	7.0					7.0	
Flash Dont Walk (s)					18.0	18.0					20.0	
Pedestrian Calls (#/hr)					1	1					1	
Act Effct Green (s)	11.2	23.5	23.5	12.7	12.7	25.1	9.7	25.2	25.2	9.3	15.5	
Actuated g/C Ratio	0.14	0.30	0.30	0.16	0.16	0.32	0.12	0.32	0.32	0.12	0.20	
v/c Ratio	0.57	0.20	0.25	0.70	0.69	0.12	0.50	0.81	0.33	0.08	0.41	
Control Delay	46.9	29.3	6.4	48.4	47.6	0.4	45.4	32.0	5.0	40.5	29.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	46.9	29.3	6.4	48.4	47.6	0.4	45.4	32.0	5.0	40.5	29.3	
LOS	D	C	A	D	D	A	D	C	A	D	C	
Approach Delay		27.2			40.4			28.5			30.0	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 142.3			
Actuated Cycle Length: 79.2			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 30.9		Intersection LOS: C	
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			

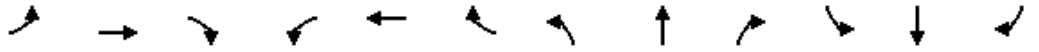
Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	74	99	242	81	61	91	777	182	10	142	23
Future Volume (vph)	96	74	99	242	81	61	91	777	182	10	142	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1484	1262	1603	1646	1490	1671	3343	1495	1444	2817	
Flt Permitted	0.95	1.00	1.00	0.95	0.57	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1484	1262	1603	956	1490	1671	3343	1495	1444	2817	
Peak-hour factor, PHF	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Adj. Flow (vph)	112	86	115	272	91	69	101	863	202	14	195	32
RTOR Reduction (vph)	0	0	82	0	0	48	0	0	141	0	10	0
Lane Group Flow (vph)	112	86	33	180	183	21	101	863	61	14	217	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	11.2	23.6	23.6	12.7	25.1	25.1	7.7	25.2	25.2	1.3	18.8	
Effective Green, g (s)	11.2	23.6	23.6	12.7	25.1	25.1	7.7	25.2	25.2	1.3	18.8	
Actuated g/C Ratio	0.13	0.28	0.28	0.15	0.30	0.30	0.09	0.30	0.30	0.02	0.23	
Clearance Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	190	421	358	244	394	450	154	1013	453	22	637	
v/s Ratio Prot	c0.08	0.06		c0.11	0.07		c0.06	c0.26		0.01	0.08	
v/s Ratio Perm			0.03		c0.07	0.01			0.04			
v/c Ratio	0.59	0.20	0.09	0.74	0.46	0.05	0.66	0.85	0.14	0.64	0.34	
Uniform Delay, d1	33.8	22.6	21.9	33.6	23.5	20.5	36.4	27.2	21.0	40.7	27.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.0	0.1	0.0	9.6	0.3	0.0	7.4	6.8	0.0	36.7	0.1	
Delay (s)	36.8	22.7	21.9	43.2	23.9	20.5	43.9	34.0	21.1	77.4	27.1	
Level of Service	D	C	C	D	C	C	D	C	C	E	C	
Approach Delay (s)		27.5			31.4			32.6			30.0	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	83.1	Sum of lost time (s)	20.3
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

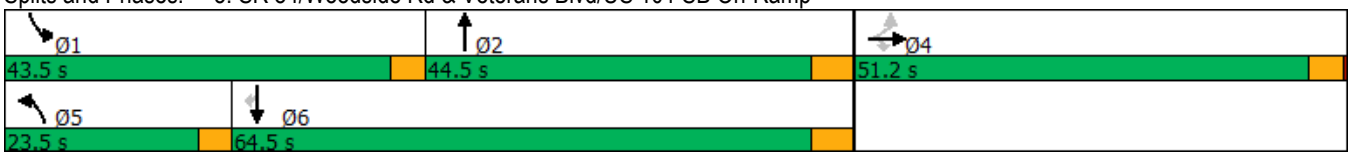


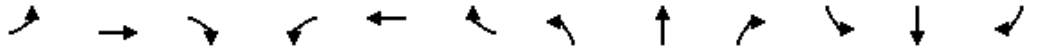
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	191	40	0	0	0	53	1578	0	83	1303	754
Future Volume (vph)	221	191	40	0	0	0	53	1578	0	83	1303	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	0		0	100		0	280		0
Storage Lanes	1		1	0		0	1		0	0		1
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor							1.00					0.99
Frt			0.850									0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1687	1776	1509	0	0	0	1719	3438	0	1671	3343	1495
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1687	1776	1509	0	0	0	1718	3438	0	1671	3343	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67									549
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		319			289			263			261	
Travel Time (s)		7.3			6.6			5.1			5.1	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	5%	5%	5%	8%	8%	8%
Adj. Flow (vph)	248	215	45	0	0	0	58	1715	0	93	1464	847
Shared Lane Traffic (%)												
Lane Group Flow (vph)	248	215	45	0	0	0	58	1715	0	93	1464	847
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1				1	2		1	2	1
Detector Template	Left	Thru	Right				Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20				20	100		20	100	20
Trailing Detector (ft)	0	0	0				0	0		0	0	0
Detector 1 Position(ft)	0	0	0				0	0		0	0	0
Detector 1 Size(ft)	20	6	20				20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases		4					5	2		1	6	
Permitted Phases	4		4									6
Detector Phase	4	4	4				5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0				4.0	12.0		4.0	12.0	12.0
Minimum Split (s)	9.2	9.2	9.2				7.5	16.5		7.5	16.5	16.5
Total Split (s)	51.2	51.2	51.2				23.5	44.5		43.5	64.5	64.5
Total Split (%)	36.8%	36.8%	36.8%				16.9%	32.0%		31.3%	46.3%	46.3%
Maximum Green (s)	47.0	47.0	47.0				20.0	40.0		40.0	60.0	60.0
Yellow Time (s)	3.7	3.7	3.7				3.5	4.5		3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5				0.0	0.0		0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.2	4.2	4.2				3.5	4.5		3.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0				2.0	2.5		2.0	2.5	2.5
Recall Mode	None	None	None				None	Min		None	Min	Min
Act Effct Green (s)	17.6	17.6	17.6				7.8	57.8		9.9	59.6	59.6
Actuated g/C Ratio	0.18	0.18	0.18				0.08	0.61		0.10	0.63	0.63
v/c Ratio	0.79	0.66	0.13				0.42	0.82		0.54	0.70	0.75
Control Delay	56.9	46.8	4.7				53.8	22.0		54.7	16.4	10.3
Queue Delay	0.0	0.0	0.0				0.0	13.1		0.0	0.0	0.0
Total Delay	56.9	46.8	4.7				53.8	35.1		54.7	16.4	10.3
LOS	E	D	A				D	D		D	B	B
Approach Delay		48.0						35.7			15.7	
Approach LOS		D						D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 95.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 26.8		Intersection LOS: C	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 5: SR 84/Woodside Rd & Veterans Blvd/US 101 SB On-Ramp





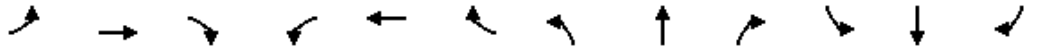
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	191	40	0	0	0	53	1578	0	83	1303	754
Future Volume (veh/h)	221	191	40	0	0	0	53	1578	0	83	1303	754
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796				1826	1826	0	1781	1781	1781
Adj Flow Rate, veh/h	248	215	45				58	1715	0	93	1464	847
Peak Hour Factor	0.89	0.89	0.89				0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7				5	5	0	8	8	8
Cap, veh/h	292	307	260				74	2121	0	119	2163	962
Arrive On Green	0.17	0.17	0.17				0.04	0.61	0.00	0.07	0.64	0.64
Sat Flow, veh/h	1711	1796	1522				1739	3561	0	1697	3385	1506
Grp Volume(v), veh/h	248	215	45				58	1715	0	93	1464	847
Grp Sat Flow(s),veh/h/ln	1711	1796	1522				1739	1735	0	1697	1692	1506
Q Serve(g_s), s	11.6	9.3	2.1				2.7	31.4	0.0	4.5	22.7	38.3
Cycle Q Clear(g_c), s	11.6	9.3	2.1				2.7	31.4	0.0	4.5	22.7	38.3
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	307	260				74	2121	0	119	2163	962
V/C Ratio(X)	0.85	0.70	0.17				0.78	0.81	0.00	0.78	0.68	0.88
Avail Cap(c_a), veh/h	973	1021	865				421	2121	0	821	2457	1093
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	33.2	32.3	29.3				39.2	12.3	0.0	37.8	9.5	12.3
Incr Delay (d2), s/veh	2.6	1.1	0.1				6.7	2.4	0.0	4.2	0.6	7.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	4.0	1.9				1.3	10.6	0.0	1.9	6.9	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	33.4	29.4				45.9	14.7	0.0	42.0	10.1	19.8
LnGrp LOS	D	C	C				D	B	A	D	B	B
Approach Vol, veh/h		508						1773			2404	
Approach Delay, s/veh		34.2						15.7			14.7	
Approach LOS		C						B			B	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	9.3	55.0		18.3	7.0	57.3
Change Period (Y+Rc), s	3.5	4.5		* 4.2	3.5	4.5
Max Green Setting (Gmax), s	40.0	40.0		* 47	20.0	60.0
Max Q Clear Time (g_c+I1), s	6.5	33.4		13.6	4.7	40.3
Green Ext Time (p_c), s	0.1	5.0		0.5	0.0	12.5

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	230	58	110	207	589	57	1460	54	307	947	89
Future Volume (vph)	249	230	58	110	207	589	57	1460	54	307	947	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	110					0	275		0
Storage Lanes	1		1	1					0	1		0
Taper Length (ft)	40			50						25		
Lane Util. Factor	0.91	0.91	0.95	0.91	0.91	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.96	1.00							
Frt		0.976				0.850		0.995			0.987	
Flt Protected	0.950	0.990		0.950	0.997		0.950			0.950		
Satd. Flow (prot)	1610	3231	0	1564	3283	1538	1671	3326	0	1626	3210	0
Flt Permitted	0.950	0.990		0.950	0.997		0.950			0.950		
Satd. Flow (perm)	1610	3231	0	1505	3277	1538	1671	3326	0	1626	3210	0
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		11				386		2				
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		624			576			625			219	
Travel Time (s)		17.0			15.7			12.2			4.3	
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Adj. Flow (vph)	286	264	67	128	241	685	62	1587	59	337	1041	98
Shared Lane Traffic (%)	29%			10%								
Lane Group Flow (vph)	203	414	0	115	254	685	62	1646	0	337	1139	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

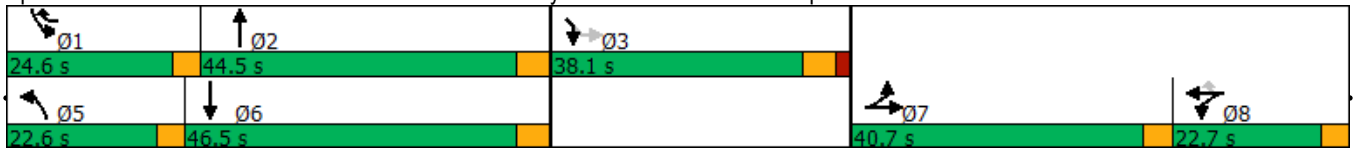


Lane Group	SEL	SER	SER2
Lane Configurations			
Traffic Volume (vph)	359	506	21
Future Volume (vph)	359	506	21
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	250	0	
Storage Lanes	2	1	
Taper Length (ft)	100		
Lane Util. Factor	0.97	0.91	0.95
Ped Bike Factor			
Frt	0.939	0.850	
Flt Protected	0.971		
Satd. Flow (prot)	3201	1400	0
Flt Permitted	0.971		
Satd. Flow (perm)	3201	1400	0
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)	30		
Link Distance (ft)	434		
Travel Time (s)	9.9		
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%
Adj. Flow (vph)	390	550	23
Shared Lane Traffic (%)		48%	
Lane Group Flow (vph)	654	309	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	24		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15	9	9
Number of Detectors	1	1	
Detector Template	Left	Right	
Leading Detector (ft)	20	20	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Detector Phase	7	7		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	4.0	4.0	16.0		4.0	10.0	
Minimum Split (s)	40.7	40.7		11.7	11.7	7.6	7.6	29.5		7.6	14.5	
Total Split (s)	40.7	40.7		22.7	22.7	24.6	22.6	44.5		24.6	46.5	
Total Split (%)	23.9%	23.9%		13.3%	13.3%	14.4%	13.2%	26.1%		14.4%	27.3%	
Maximum Green (s)	37.0	37.0		19.0	19.0	21.0	19.0	40.0		21.0	42.0	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
All-Red Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.0		0.8	1.0	
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1		0.1	0.1	
Recall Mode	Max	Max		Max	Max	None	None	Max		None	Max	
Walk Time (s)	4.0	4.0						4.0				
Flash Dont Walk (s)	33.0	33.0						21.0				
Pedestrian Calls (#/hr)	49	49						0				
Act Effct Green (s)	37.0	37.0		19.0	19.0	43.7	9.8	40.0		21.0	51.2	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.26	0.06	0.23		0.12	0.30	
v/c Ratio	0.58	0.58		0.66	0.70	1.01	0.65	2.11		1.69	1.18	
Control Delay	67.5	62.1		91.4	83.9	62.6	107.8	532.4		369.8	142.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	1.0	
Total Delay	67.5	62.1		91.4	83.9	62.6	107.8	532.4		369.8	143.7	
LOS	E	E		F	F	E	F	F		F	F	
Approach Delay		63.9			70.8			517.0			195.3	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 170.6			
Actuated Cycle Length: 170.6			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.11			
Intersection Signal Delay: 244.1		Intersection LOS: F	
Intersection Capacity Utilization 131.2%		ICU Level of Service H	
Analysis Period (min) 15			

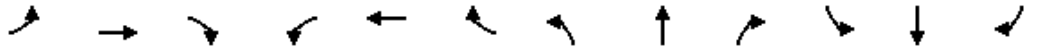
Splits and Phases: 6: SR 84/Woodside Rd & Broadway St & US 101 SB Off-Ramp





Lane Group	SEL	SER	SER2
Detector 2 Extend (s)			
Turn Type	Perm	Prot	
Protected Phases		3	
Permitted Phases	3		
Detector Phase	3	3	
Switch Phase			
Minimum Initial (s)	8.0	8.0	
Minimum Split (s)	31.1	31.1	
Total Split (s)	38.1	38.1	
Total Split (%)	22.3%	22.3%	
Maximum Green (s)	32.0	32.0	
Yellow Time (s)	4.1	4.1	
All-Red Time (s)	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.1	6.1	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	1.2	1.2	
Minimum Gap (s)	1.2	1.2	
Time Before Reduce (s)	0.8	0.8	
Time To Reduce (s)	0.1	0.1	
Recall Mode	None	None	
Walk Time (s)	4.0	4.0	
Flash Dont Walk (s)	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	
Act Effct Green (s)	32.0	32.0	
Actuated g/C Ratio	0.19	0.19	
v/c Ratio	1.09	1.18	
Control Delay	125.8	169.9	
Queue Delay	0.0	0.0	
Total Delay	125.8	169.9	
LOS	F	F	
Approach Delay	139.9		
Approach LOS	F		

Intersection Summary



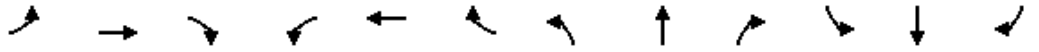
Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	230	58	110	207	589	57	1460	54	307	947	89
Future Volume (vph)	249	230	58	110	207	589	57	1460	54	307	947	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lane Util. Factor	0.91	0.91		0.91	0.91	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	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	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3230		1564	3285	1538	1671	3325		1626	3210	
Flt Permitted	0.95	0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1610	3230		1564	3285	1538	1671	3325		1626	3210	
Peak-hour factor, PHF	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	286	264	67	128	241	685	62	1587	59	337	1041	98
RTOR Reduction (vph)	0	9	0	0	0	295	0	2	0	0	0	0
Lane Group Flow (vph)	203	405	0	115	254	390	62	1644	0	337	1139	0
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	37.0	37.0		19.0	19.0	40.0	9.8	40.0		21.0	51.2	
Effective Green, g (s)	37.0	37.0		19.0	19.0	40.0	9.8	40.0		21.0	51.2	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.23	0.06	0.23		0.12	0.30	
Clearance Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	349	700		174	365	360	95	779		200	963	
v/s Ratio Prot	c0.13	0.13		0.07	0.08	c0.13	0.04	c0.49		c0.21	0.35	
v/s Ratio Perm						0.12						
v/c Ratio	0.58	0.58		0.66	0.70	1.08	0.65	2.11		1.69	1.18	
Uniform Delay, d1	59.9	59.8		72.7	73.0	65.3	78.7	65.3		74.8	59.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	3.5		18.0	10.5	71.1	11.6	504.3		329.0	92.9	
Delay (s)	66.8	63.3		90.7	83.5	136.4	90.3	569.6		403.8	152.6	
Level of Service	E	E		F	F	F	F	F		F	F	
Approach Delay (s)		64.4			118.7			552.2			210.0	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	268.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	170.6	Sum of lost time (s)	21.6
Intersection Capacity Utilization	131.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SER	SER2
Lane Configurations			
Traffic Volume (vph)	359	506	21
Future Volume (vph)	359	506	21
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	6.1	6.1	
Lane Util. Factor	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	0.94	0.85	
Flt Protected	0.97	1.00	
Satd. Flow (prot)	3202	1400	
Flt Permitted	0.97	1.00	
Satd. Flow (perm)	3202	1400	
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	390	550	23
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	654	309	0
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Heavy Vehicles (%)	5%	5%	5%
Turn Type	Perm	Prot	
Protected Phases		3	
Permitted Phases	3		
Actuated Green, G (s)	32.0	32.0	
Effective Green, g (s)	32.0	32.0	
Actuated g/C Ratio	0.19	0.19	
Clearance Time (s)	6.1	6.1	
Vehicle Extension (s)	1.2	1.2	
Lane Grp Cap (vph)	600	262	
v/s Ratio Prot		c0.22	
v/s Ratio Perm	0.20		
v/c Ratio	1.09	1.18	
Uniform Delay, d1	69.3	69.3	
Progression Factor	1.00	1.00	
Incremental Delay, d2	63.6	113.0	
Delay (s)	132.9	182.3	
Level of Service	F	F	
Approach Delay (s)	148.8		
Approach LOS	F		

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	328	104	505	351	206	117	1645	460	213	1358	78
Future Volume (vph)	175	328	104	505	351	206	117	1645	460	213	1358	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.964				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3421	0	3400	1845	1568	1770	3539	1583	3273	3374	1509
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3421	0	3392	1845	1568	1770	3539	1583	3273	3374	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				40			34			59
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			693			790			776	
Travel Time (s)		19.2			15.8			15.4			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	7%	7%	7%
Adj. Flow (vph)	199	373	118	543	377	222	122	1714	479	245	1561	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	491	0	543	377	222	122	1714	479	245	1561	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	21.2	24.2		26.2	29.2	11.2	14.2	80.0	26.2	11.2	77.0	21.2
Total Split (%)	15.0%	17.1%		18.5%	20.6%	7.9%	10.0%	56.5%	18.5%	7.9%	54.4%	15.0%
Maximum Green (s)	18.0	20.0		23.0	25.0	8.0	11.0	75.0	23.0	8.0	72.0	18.0
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	16.8	22.1		23.0	28.2	40.5	10.7	70.7	98.8	8.0	68.1	90.0
Actuated g/C Ratio	0.12	0.16		0.16	0.20	0.29	0.08	0.51	0.71	0.06	0.49	0.65
v/c Ratio	0.93	0.88		0.97	1.01	0.46	0.90	0.96	0.42	1.30	0.95	0.09
Control Delay	105.2	71.9		88.8	104.6	37.4	119.9	46.1	9.5	218.7	47.1	4.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	105.2	71.9		88.8	104.6	37.4	119.9	46.1	9.5	218.7	47.1	4.2
LOS	F	E		F	F	D	F	D	A	F	D	A
Approach Delay		81.5			84.0			42.4			67.3	
Approach LOS		F			F			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 141.6			
Actuated Cycle Length: 139.5			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 62.5		Intersection LOS: E	
Intersection Capacity Utilization 94.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	328	104	505	351	206	117	1645	460	213	1358	78
Future Volume (veh/h)	175	328	104	505	351	206	117	1645	460	213	1358	78
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1870	1870	1870	1796	1796	1796
Adj Flow Rate, veh/h	199	373	118	543	377	222	122	1714	479	245	1561	90
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	3	3	3	2	2	2	7	7	7
Cap, veh/h	222	387	120	572	349	386	142	1837	1084	193	1690	942
Arrive On Green	0.12	0.15	0.15	0.17	0.19	0.19	0.08	0.52	0.52	0.06	0.50	0.50
Sat Flow, veh/h	1795	2665	830	3428	1856	1567	1781	3554	1585	3319	3413	1522
Grp Volume(v), veh/h	199	249	242	543	377	222	122	1714	479	245	1561	90
Grp Sat Flow(s),veh/h/ln	1795	1791	1704	1714	1856	1567	1781	1777	1585	1659	1706	1522
Q Serve(g_s), s	15.1	19.0	19.5	21.6	25.9	17.2	9.3	62.1	18.9	8.0	58.7	3.3
Cycle Q Clear(g_c), s	15.1	19.0	19.5	21.6	25.9	17.2	9.3	62.1	18.9	8.0	58.7	3.3
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	260	247	572	349	386	142	1837	1084	193	1690	942
V/C Ratio(X)	0.90	0.96	0.98	0.95	1.08	0.58	0.86	0.93	0.44	1.27	0.92	0.10
Avail Cap(c_a), veh/h	234	260	247	572	349	386	142	1933	1127	193	1782	983
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	58.5	58.7	56.9	56.0	45.6	62.7	31.1	9.9	64.9	32.4	10.6
Incr Delay (d2), s/veh	30.5	43.7	51.4	25.4	71.2	1.4	36.2	8.4	0.1	156.7	8.0	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	8.7	11.8	12.0	11.4	19.0	6.9	5.6	27.7	6.4	7.6	25.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.0	102.2	110.1	82.2	127.2	47.0	98.9	39.5	10.0	221.7	40.4	10.7
LnGrp LOS	F	F	F	F	F	D	F	D	A	F	D	B
Approach Vol, veh/h		690			1142			2315			1896	
Approach Delay, s/veh		101.5			90.2			36.5			62.4	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	76.3	26.2	24.2	14.2	73.3	20.3	30.1
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	8.0	75.0	23.0	* 20	11.0	72.0	18.0	* 25
Max Q Clear Time (g_c+I1), s	10.0	64.1	23.6	21.5	11.3	60.7	17.1	27.9
Green Ext Time (p_c), s	0.0	7.2	0.0	0.0	0.0	6.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	9	9	142	7	7	12	11	298	8	8	0
Future Volume (vph)	0	9	9	142	7	7	12	11	298	8	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.994			0.875				
Flt Protected					0.957			0.998		0.950		
Satd. Flow (prot)	0	1671	0	0	1721	0	0	1580	0	1703	1792	0
Flt Permitted					0.957			0.998		0.950		
Satd. Flow (perm)	0	1671	0	0	1721	0	0	1580	0	1703	1792	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)									5	5		
Confl. Bikes (#/hr)			16			11			33			15
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Adj. Flow (vph)	0	11	11	160	8	8	14	13	339	9	9	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	176	0	0	366	0	9	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	9	9	142	7	7	12	11	298	8	8	0
Future Vol, veh/h	0	9	9	142	7	7	12	11	298	8	8	0
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles, %	6	6	6	5	5	5	5	5	5	6	6	6
Mvmt Flow	0	11	11	160	8	8	14	13	339	9	9	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.9	9.6	9.9	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	91%	100%	0%
Vol Thru, %	3%	50%	4%	0%	100%
Vol Right, %	93%	50%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	321	18	156	8	8
LT Vol	12	0	142	8	0
Through Vol	11	9	7	0	8
RT Vol	298	9	7	0	0
Lane Flow Rate	365	21	175	9	9
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.412	0.028	0.242	0.015	0.014
Departure Headway (Hd)	4.07	4.752	4.979	5.905	5.401
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	886	750	720	606	662
Service Time	2.089	2.799	3.016	3.639	3.135
HCM Lane V/C Ratio	0.412	0.028	0.243	0.015	0.014
HCM Control Delay	9.9	7.9	9.6	8.7	8.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	2	0.1	0.9	0	0

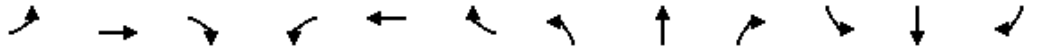
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	477	136	73	519	37	112	133	161	20	62	94
Future Volume (vph)	216	477	136	73	519	37	112	133	161	20	62	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.98		0.97	0.97	0.97		1.00	0.97	
Frt		0.967				0.850		0.918			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3302	0	1719	3438	1538	1719	1606	0	1687	1565	0
Flt Permitted	0.950			0.950			0.617			0.392		
Satd. Flow (perm)	1731	3302	0	1687	3438	1498	1085	1606	0	694	1565	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36				110		51			64	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1835			558			661	
Travel Time (s)		32.0			41.7			15.2			18.0	
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Peak Hour Factor	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	267	589	168	78	558	40	130	155	187	23	70	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	267	757	0	78	558	40	130	342	0	23	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	35.2	55.2		25.2	45.2	45.2	43.0	43.0		43.0	43.0	
Total Split (%)	28.5%	44.7%		20.4%	36.6%	36.6%	34.8%	34.8%		34.8%	34.8%	
Maximum Green (s)	30.0	50.0		20.0	40.0	40.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		24			3	3	51	51		51	51	
Act Effct Green (s)	19.2	34.2		11.1	20.8	20.8	28.8	28.8		28.8	28.8	
Actuated g/C Ratio	0.22	0.40		0.13	0.24	0.24	0.33	0.33		0.33	0.33	
v/c Ratio	0.69	0.57		0.35	0.67	0.09	0.36	0.60		0.10	0.31	
Control Delay	44.8	24.7		48.2	37.0	0.4	26.5	25.6		23.1	16.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.8	24.7		48.2	37.0	0.4	26.5	25.6		23.1	16.3	
LOS	D	C		D	D	A	C	C		C	B	
Approach Delay		30.0			36.1			25.9			17.1	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 86.2			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 29.8		Intersection LOS: C	
Intersection Capacity Utilization 83.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	477	136	73	519	37	112	133	161	20	62	94
Future Volume (vph)	216	477	136	73	519	37	112	133	161	20	62	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.97		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.92		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3313		1719	3438	1501	1684	1611		1682	1576	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.62	1.00		0.39	1.00	
Satd. Flow (perm)	1736	3313		1719	3438	1501	1094	1611		694	1576	
Peak-hour factor, PHF	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Adj. Flow (vph)	267	589	168	78	558	40	130	155	187	23	70	107
RTOR Reduction (vph)	0	22	0	0	0	29	0	34	0	0	43	0
Lane Group Flow (vph)	267	735	0	78	558	11	130	308	0	23	134	0
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	19.2	34.2		7.8	22.8	22.8	28.8	28.8		28.8	28.8	
Effective Green, g (s)	19.2	34.2		7.8	22.8	22.8	28.8	28.8		28.8	28.8	
Actuated g/C Ratio	0.22	0.40		0.09	0.26	0.26	0.33	0.33		0.33	0.33	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	386	1314		155	909	397	365	538		231	526	
v/s Ratio Prot	c0.15	c0.22		0.05	0.16			c0.19			0.09	
v/s Ratio Perm						0.01	0.12			0.03		
v/c Ratio	0.69	0.56		0.50	0.61	0.03	0.36	0.57		0.10	0.26	
Uniform Delay, d1	30.8	20.2		37.4	27.8	23.5	21.7	23.6		19.8	20.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.3	0.3		0.9	0.9	0.0	0.4	1.2		0.1	0.2	
Delay (s)	35.1	20.5		38.3	28.7	23.5	22.1	24.8		19.9	21.1	
Level of Service	D	C		D	C	C	C	C		B	C	
Approach Delay (s)		24.3			29.5			24.1			20.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	15.4
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

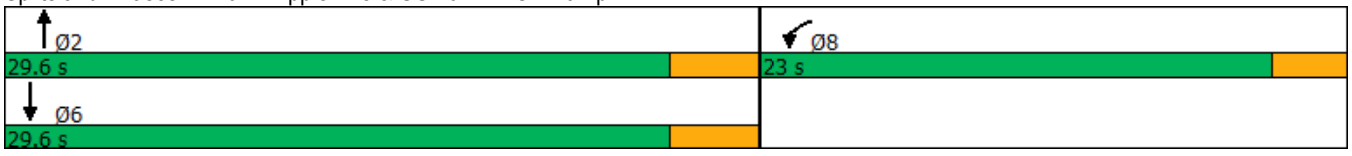


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1026	89	147	0	0	300
Future Volume (vph)	1026	89	147	0	0	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.988					
Flt Protected	0.956					
Satd. Flow (prot)	3348	0	1881	0	0	3539
Flt Permitted	0.956					
Satd. Flow (perm)	3348	0	1881	0	0	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	20					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.85	0.85	0.89	0.89	0.94	0.94
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Adj. Flow (vph)	1207	105	165	0	0	319
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1312	0	165	0	0	319
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	23.0		29.6			29.6
Total Split (%)	43.7%		56.3%			56.3%
Maximum Green (s)	20.0		26.0			26.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			7			
Act Effct Green (s)	19.2		7.5			7.5
Actuated g/C Ratio	0.57		0.22			0.22
v/c Ratio	0.68		0.39			0.40
Control Delay	8.7		13.5			12.3
Queue Delay	0.0		0.0			0.0
Total Delay	8.7		13.5			12.3
LOS	A		B			B
Approach Delay	8.7		13.5			12.3
Approach LOS	A		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 33.4			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 99.9%		ICU Level of Service F	
Analysis Period (min) 15			

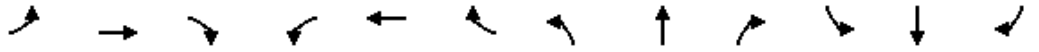
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1026	89	147	0	0	300
Future Volume (vph)	1026	89	147	0	0	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3348		1881			3539
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3348		1881			3539
Peak-hour factor, PHF	0.85	0.85	0.89	0.89	0.94	0.94
Adj. Flow (vph)	1207	105	165	0	0	319
RTOR Reduction (vph)	8	0	0	0	0	0
Lane Group Flow (vph)	1304	0	165	0	0	319
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	19.2		7.5			7.5
Effective Green, g (s)	19.2		7.5			7.5
Actuated g/C Ratio	0.58		0.23			0.23
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1930		423			797
v/s Ratio Prot	c0.39		0.09			c0.09
v/s Ratio Perm						
v/c Ratio	0.68		0.39			0.40
Uniform Delay, d1	4.9		11.0			11.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.7		0.2			0.1
Delay (s)	5.6		11.2			11.1
Level of Service	A		B			B
Approach Delay (s)	5.6		11.2			11.1
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	33.3	Sum of lost time (s)	6.6
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

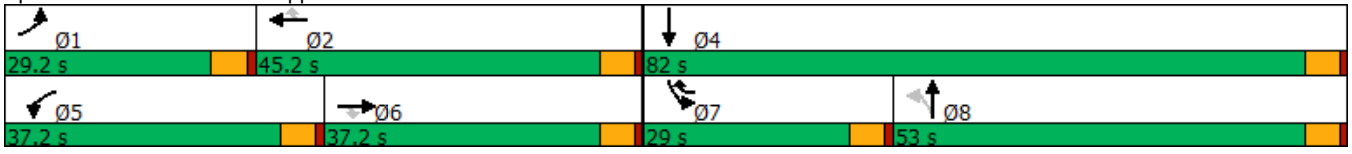


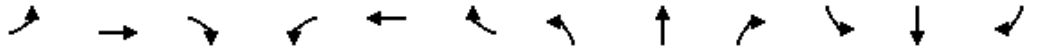
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1121	220	113	13	738	23	1195	121	291	859	15
Future Volume (vph)	110	1121	220	113	13	738	23	1195	121	291	859	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor			0.95	0.99				1.00		1.00	1.00	
Frt			0.850			0.850		0.986			0.997	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3433	5085	1583	3400	1845	3575	0	4952	0	1719	3424	0
Flt Permitted	0.950			0.950				0.898		0.950		
Satd. Flow (perm)	3433	5085	1503	3357	1845	3575	0	4451	0	1718	3424	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			121					11			1	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)			28	28			20		4	4		20
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	5%	5%	5%
Adj. Flow (vph)	118	1205	237	127	15	829	25	1299	132	338	999	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	118	1205	237	127	15	829	0	1456	0	338	1016	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	29.2	37.2	37.2	37.2	45.2	29.0	53.0	53.0		29.0	82.0	
Total Split (%)	18.7%	23.8%	23.8%	23.8%	28.9%	18.5%	33.9%	33.9%		18.5%	52.4%	
Maximum Green (s)	24.0	32.0	32.0	32.0	40.0	24.0	48.0	48.0		24.0	77.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		28	28				4	4			20	
Act Effct Green (s)	9.8	32.6	32.6	11.3	34.1	63.3		48.0		24.0	77.0	
Actuated g/C Ratio	0.07	0.24	0.24	0.08	0.25	0.46		0.35		0.18	0.56	
v/c Ratio	0.48	0.99	0.53	0.45	0.03	0.50		0.92		1.12	0.53	
Control Delay	67.5	75.2	26.1	65.1	39.5	26.9		53.0		137.8	19.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	67.5	75.2	26.1	65.1	39.5	26.9		53.0		137.8	19.6	
LOS	E	E	C	E	D	C		D		F	B	
Approach Delay		67.2			32.1			53.0			49.1	
Approach LOS		E			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 136.3			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 52.3		Intersection LOS: D	
Intersection Capacity Utilization 104.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





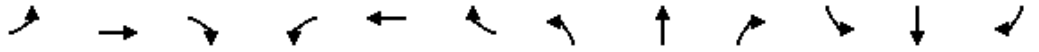
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	1121	220	113	13	738	23	1195	121	291	859	15
Future Volume (veh/h)	110	1121	220	113	13	738	23	1195	121	291	859	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	118	1205	237	127	15	829	25	1299	132	338	999	17
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	5	5	5
Cap, veh/h	234	1245	373	285	481	1535	45	1463	148	318	1939	33
Arrive On Green	0.07	0.24	0.24	0.08	0.26	0.26	0.33	0.33	0.33	0.18	0.56	0.56
Sat Flow, veh/h	3456	5106	1530	3428	1856	3392	48	4368	441	1739	3489	59
Grp Volume(v), veh/h	118	1205	237	127	15	829	522	460	473	338	497	519
Grp Sat Flow(s),veh/h/ln	1728	1702	1530	1714	1856	1131	1740	1537	1580	1739	1735	1814
Q Serve(g_s), s	4.3	30.7	18.2	4.6	0.8	23.7	19.8	37.3	37.3	24.0	23.4	23.4
Cycle Q Clear(g_c), s	4.3	30.7	18.2	4.6	0.8	23.7	37.0	37.3	37.3	24.0	23.4	23.4
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.28	1.00		0.03
Lane Grp Cap(c), veh/h	234	1245	373	285	481	1535	611	514	529	318	964	1008
V/C Ratio(X)	0.50	0.97	0.64	0.45	0.03	0.54	0.85	0.89	0.89	1.06	0.52	0.52
Avail Cap(c_a), veh/h	632	1245	373	836	566	1689	663	562	578	318	1018	1064
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	49.1	44.4	57.3	36.3	27.0	40.9	41.4	41.4	53.6	18.1	18.1
Incr Delay (d2), s/veh	0.6	18.2	2.7	0.4	0.0	0.1	9.2	15.0	14.7	68.1	0.2	0.2
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	1.9	15.1	7.2	2.0	0.4	6.5	17.6	16.3	16.7	16.5	9.3	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.7	67.3	47.1	57.7	36.3	27.1	50.1	56.5	56.1	121.7	18.3	18.3
LnGrp LOS	E	E	D	E	D	C	D	E	E	F	B	B
Approach Vol, veh/h		1560			971			1456			1354	
Approach Delay, s/veh		63.6			31.3			54.1			44.1	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	39.2		77.9	16.1	37.2	29.0	48.9				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	24.0	40.0		77.0	32.0	32.0	24.0	48.0				
Max Q Clear Time (g_c+I1), s	6.3	25.7		25.4	6.6	32.7	26.0	39.3				
Green Ext Time (p_c), s	0.2	2.2		4.9	0.2	0.0	0.0	4.6				

Intersection Summary												
HCM 6th Ctrl Delay			50.2									
HCM 6th LOS			D									

Notes

User approved pedestrian interval to be less than phase max green.



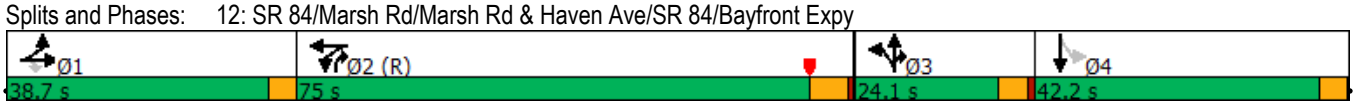
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	85	223	1926	145	10	170	26	1074	6	15	7
Future Volume (vph)	4	85	223	1926	145	10	170	26	1074	6	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00						0.99	
Frt			0.850		0.990				0.850		0.962	
Flt Protected		0.998		0.950				0.959			0.989	
Satd. Flow (prot)	0	3567	1599	4942	1820	0	0	1769	3575	0	3416	0
Flt Permitted		0.998		0.950				0.959			0.877	
Satd. Flow (perm)	0	3562	1577	4929	1820	0	0	1769	3575	0	3020	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			269		2						10	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	5	102	269	2140	161	11	193	30	1220	9	21	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	269	2140	172	0	0	223	1220	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	38.7	38.7	38.7	75.0	75.0		24.1	24.1		42.2	42.2	
Total Split (%)	21.5%	21.5%	21.5%	41.7%	41.7%		13.4%	13.4%		23.4%	23.4%	
Maximum Green (s)	35.0	35.0	35.0	68.8	68.8		19.0	19.0		38.0	38.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	8	8					12	12	
Act Effct Green (s)		13.1	13.1	111.2	111.2			19.0	135.3		20.6	
Actuated g/C Ratio		0.07	0.07	0.62	0.62			0.11	0.75		0.11	
v/c Ratio		0.41	0.74	0.70	0.15			1.20	0.45		0.11	
Control Delay		82.5	19.8	28.4	19.5			187.4	14.3		51.7	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		82.5	19.8	28.4	19.5			187.4	14.3		51.7	
LOS		F	B	C	B			F	B		D	
Approach Delay		37.6			27.7			41.0			51.7	
Approach LOS		D			C			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 180
Offset: 81 (45%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 72.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	85	223	1926	145	10	170	26	1074	6	15	7
Future Volume (vph)	4	85	223	1926	145	10	170	26	1074	6	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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	0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00		0.99	
Satd. Flow (prot)		3566	1577	4942	1820			1768	3575		3405	
Flt Permitted		1.00	1.00	0.95	1.00			0.96	1.00		0.88	
Satd. Flow (perm)		3566	1577	4942	1820			1768	3575		3019	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Adj. Flow (vph)	5	102	269	2140	161	11	193	30	1220	9	21	10
RTOR Reduction (vph)	0	0	249	0	1	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	107	20	2140	171	0	0	223	1220	0	31	0
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		13.1	13.1	110.3	110.3			19.0	135.5		18.4	
Effective Green, g (s)		13.1	13.1	110.3	110.3			19.0	135.5		18.4	
Actuated g/C Ratio		0.07	0.07	0.61	0.61			0.11	0.75		0.10	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		259	114	3028	1115			186	2691		308	
v/s Ratio Prot		c0.03		c0.43	0.09			c0.13	0.34			
v/s Ratio Perm			0.01								c0.01	
v/c Ratio		0.41	0.17	0.71	0.15			1.20	0.45		0.10	
Uniform Delay, d1		79.8	78.4	23.8	14.9			80.5	8.4		73.3	
Progression Factor		1.00	1.00	1.00	1.00			1.02	1.14		1.00	
Incremental Delay, d2		0.4	0.3	1.4	0.3			123.3	0.0		0.1	
Delay (s)		80.2	78.6	25.2	15.2			205.1	9.5		73.3	
Level of Service		F	E	C	B			F	A		E	
Approach Delay (s)		79.1			24.5			39.7			73.3	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

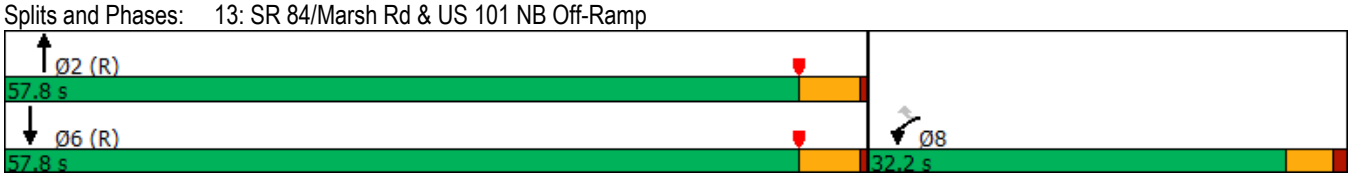


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	734	393	1300	0	0	710
Future Volume (vph)	734	393	1300	0	0	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		72				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	765	409	1444	0	0	747
Shared Lane Traffic (%)						
Lane Group Flow (vph)	765	409	1444	0	0	747
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	32.2	32.2	57.8			57.8
Total Split (%)	35.8%	35.8%	64.2%			64.2%
Maximum Green (s)	28.0	28.0	53.2			53.2
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	23.8	23.8	57.4			57.4
Actuated g/C Ratio	0.26	0.26	0.64			0.64
v/c Ratio	0.87	0.53	0.65			0.33
Control Delay	42.7	25.2	6.6			8.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	42.7	25.2	6.6			8.0
LOS	D	C	A			A
Approach Delay	36.6		6.6			8.0
Approach LOS	D		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 66 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 99.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	734	393	1300	0	0	710
Future Volume (veh/h)	734	393	1300	0	0	710
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	765	409	1444	0	0	747
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	847	683	2296	0	0	2296
Arrive On Green	0.25	0.25	0.65	0.00	0.00	0.65
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	765	409	1444	0	0	747
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	19.8	11.9	21.8	0.0	0.0	8.4
Cycle Q Clear(g_c), s	19.8	11.9	21.8	0.0	0.0	8.4
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	847	683	2296	0	0	2296
V/C Ratio(X)	0.90	0.60	0.63	0.00	0.00	0.33
Avail Cap(c_a), veh/h	1050	847	2296	0	0	2296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	32.7	29.7	9.3	0.0	0.0	6.9
Incr Delay (d2), s/veh	8.4	0.3	1.3	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	3.8	7.3	0.0	0.0	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.0	30.0	10.6	0.0	0.0	7.3
LnGrp LOS	D	C	B	A	A	A
Approach Vol, veh/h	1174		1444			747
Approach Delay, s/veh	37.2		10.6			7.3
Approach LOS	D		B			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		63.2			63.2	26.8
Change Period (Y+Rc), s		4.6			4.6	4.2
Max Green Setting (Gmax), s		53.2			53.2	28.0
Max Q Clear Time (g_c+I1), s		23.8			10.4	21.8
Green Ext Time (p_c), s		8.7			3.6	0.8

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

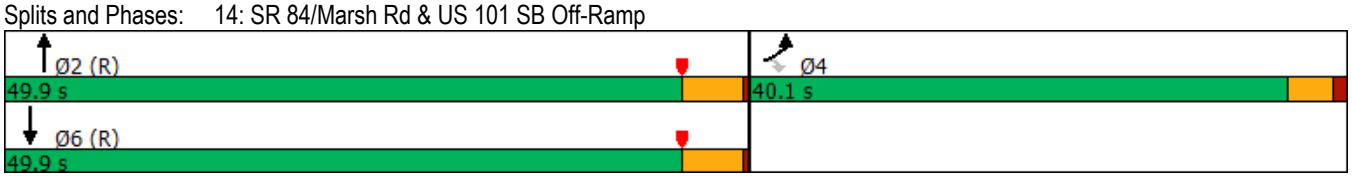


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	938	464	0	743	1324	0
Future Volume (vph)	938	464	0	743	1324	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		21				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	957	473	0	774	1455	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	957	473	0	774	1455	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	40.1	40.1		49.9	49.9	
Total Split (%)	44.6%	44.6%		55.4%	55.4%	
Maximum Green (s)	36.0	36.0		45.3	45.3	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	30.6	30.6		50.7	50.7	
Actuated g/C Ratio	0.34	0.34		0.56	0.56	
v/c Ratio	0.84	0.88		0.38	0.74	
Control Delay	34.9	45.3		12.4	24.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	34.9	45.3		12.4	24.7	
LOS	C	D		B	C	
Approach Delay	38.3			12.4	24.7	
Approach LOS	D			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 72 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	938	464	0	743	1324	0
Future Volume (veh/h)	938	464	0	743	1324	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	957	473	0	774	1455	0
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1108	508	0	2059	2026	0
Arrive On Green	0.33	0.33	0.00	0.57	0.57	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	957	473	0	774	1455	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	23.9	26.6	0.0	10.5	26.9	0.0
Cycle Q Clear(g_c), s	23.9	26.6	0.0	10.5	26.9	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1108	508	0	2059	2026	0
V/C Ratio(X)	0.86	0.93	0.00	0.38	0.72	0.00
Avail Cap(c_a), veh/h	1349	619	0	2059	2026	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	29.2	0.0	10.4	13.9	0.0
Incr Delay (d2), s/veh	4.5	17.3	0.0	0.5	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	11.9	0.0	3.9	9.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.8	46.5	0.0	10.9	16.1	0.0
LnGrp LOS	C	D	A	B	B	A
Approach Vol, veh/h	1430			774	1455	
Approach Delay, s/veh	37.3			10.9	16.1	
Approach LOS	D			B	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		56.3		33.7		56.3
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		45.3		36.0		45.3
Max Q Clear Time (g_c+I1), s		12.5		28.6		28.9
Green Ext Time (p_c), s		2.0		1.0		4.2

Intersection Summary		
HCM 6th Ctrl Delay		23.3
HCM 6th LOS		C

Existing PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	95	233	10	25	135
Future Volume (vph)	4	95	233	10	25	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					0.850
Flt Protected				0.954	0.950	
Satd. Flow (prot)	1591	0	0	1795	1736	1553
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	1591	0	0	1795	1736	1553
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles (%)	4%	4%	1%	1%	4%	4%
Adj. Flow (vph)	5	108	333	14	45	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	113	0	0	347	45	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	95	233	10	25	135
Future Vol, veh/h	4	95	233	10	25	135
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles, %	4	4	1	1	4	4
Mvmt Flow	5	108	333	14	45	245
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	8.4	12.5	10.2
HCM LOS	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	96%
Vol Thru, %	0%	0%	4%	4%
Vol Right, %	0%	100%	96%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	25	135	99	243
LT Vol	25	0	0	233
Through Vol	0	0	4	10
RT Vol	0	135	95	0
Lane Flow Rate	45	245	112	347
Geometry Grp	5	5	2	2
Degree of Util (X)	0.078	0.338	0.142	0.478
Departure Headway (Hd)	6.175	4.964	4.554	4.956
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	577	719	780	722
Service Time	3.944	2.732	2.628	3.012
HCM Lane V/C Ratio	0.078	0.341	0.144	0.481
HCM Control Delay	9.5	10.3	8.4	12.5
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.3	1.5	0.5	2.6



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	3	160	328	2
Future Volume (vph)	0	0	3	160	328	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1736	3471	3536	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1736	3471	3536	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.56	0.56	0.74	0.74
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Adj. Flow (vph)	0	0	5	286	443	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	5	286	446	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	12.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	3	160	328	2
Future Vol, veh/h	0	0	3	160	328	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	56	56	74	74
Heavy Vehicles, %	2	2	4	4	2	2
Mvmt Flow	0	0	5	286	443	3

Major/Minor	Minor2		Major2	
Conflicting Flow All	445	445	-	0
Stage 1	445	445	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.88	6.58	-	-
Critical Hdwy Stg 1	5.88	5.58	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.54	4.04	-	-
Pot Cap-1 Maneuver	536	502	-	-
Stage 1	607	568	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	536	0	-	-
Mov Cap-2 Maneuver	536	0	-	-
Stage 1	607	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

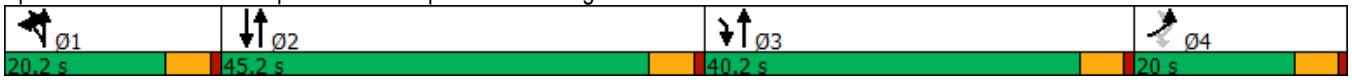
Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	536	-	-	-	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Control Delay (s)	11.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	46	27	13	163	328	0	0	47	2
Future Volume (vph)	1	0	46	27	13	163	328	0	0	47	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	60		265			0	0	0	
Storage Lanes		1	1		1			0	0	1	
Taper Length (ft)		25			50				25		
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.865	
Flt Protected		0.950			0.950						
Satd. Flow (prot)	0	1736	1553	0	1671	3343	3539	0	0	1522	0
Flt Permitted		0.950			0.950						
Satd. Flow (perm)	0	1736	1553	0	1671	3343	3539	0	0	1522	0
Right Turn on Red			Yes								No
Satd. Flow (RTOR)			109								
Link Speed (mph)		30				35	35		30		
Link Distance (ft)		369				675	1774		538		
Travel Time (s)		8.4				13.1	34.6		12.2		
Peak Hour Factor	0.78	0.78	0.78	0.71	0.71	0.71	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	2%	2%	8%	8%	8%
Adj. Flow (vph)	1	0	59	38	18	230	437	0	0	57	2
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1	59	0	56	230	437	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)		12				12	12		0		
Link Offset(ft)		0				0	0		0		
Crosswalk Width(ft)		16				16	16		16		
Two way Left Turn Lane											
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	1	2	2			1	
Detector Template	Left	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel											
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)						94	94				
Detector 2 Size(ft)						6	6				
Detector 2 Type						Cl+Ex	Cl+Ex				
Detector 2 Channel											
Detector 2 Extend (s)						0.0	0.0				
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Permitted Phases	4		4								
Detector Phase	4	4	4	1	1	2	2			3	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	20.0	20.0	20.0	20.2	20.2		45.2			40.2	
Total Split (%)	15.9%	15.9%	15.9%	16.1%	16.1%		36.0%			32.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0	15.0		40.0			35.0	
Yellow Time (s)	4.0	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0	24.0								
Pedestrian Calls (#/hr)	0	0	0								
Act Effct Green (s)		11.8	11.8		11.1	45.5	30.9			12.2	
Actuated g/C Ratio		0.21	0.21		0.20	0.83	0.56			0.22	
v/c Ratio		0.00	0.14		0.17	0.08	0.22			0.17	
Control Delay		28.0	2.4		27.9	2.6	17.0			27.4	
Queue Delay		0.0	0.0		0.0	0.0	0.0			0.0	
Total Delay		28.0	2.4		27.9	2.6	17.0			27.4	
LOS		C	A		C	A	B			C	
Approach Delay		2.9				7.6	17.0		27.4		
Approach LOS		A				A	B		C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 54.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.22			
Intersection Signal Delay: 13.5		Intersection LOS: B	
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	46	27	13	163	328	0	0	47	2
Future Volume (vph)	1	0	46	27	13	163	328	0	0	47	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00	1.00		1.00	0.95	0.95			1.00	
Frt		1.00	0.85		1.00	1.00	1.00			0.86	
Flt Protected		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1736	1553		1671	3343	3539			1522	
Flt Permitted		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1736	1553		1671	3343	3539			1522	
Peak-hour factor, PHF	0.78	0.78	0.78	0.71	0.71	0.71	0.75	0.75	0.82	0.82	0.82
Adj. Flow (vph)	1	0	59	38	18	230	437	0	0	57	2
RTOR Reduction (vph)	0	0	55	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	4	0	56	230	437	0	0	59	0
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	2%	2%	8%	8%	8%
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	
Permitted Phases	4		4								
Actuated Green, G (s)		4.7	4.7		4.7	47.4	27.2			5.1	
Effective Green, g (s)		4.7	4.7		4.7	47.4	27.2			5.1	
Actuated g/C Ratio		0.08	0.08		0.08	0.76	0.44			0.08	
Clearance Time (s)		5.0	5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0	3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		130	117		126	2543	1545			124	
v/s Ratio Prot					c0.03	0.07	c0.12			c0.04	
v/s Ratio Perm		0.00	c0.00								
v/c Ratio		0.01	0.04		0.44	0.09	0.28			0.48	
Uniform Delay, d1		26.6	26.7		27.6	1.9	11.3			27.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.0	0.1		3.4	0.0	0.1			3.9	
Delay (s)		26.7	26.8		30.9	1.9	11.4			31.2	
Level of Service		C	C		C	A	B			C	
Approach Delay (s)		26.8				7.6	11.4		31.2		
Approach LOS		C				A	B		C		

Intersection Summary			
HCM 2000 Control Delay	12.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	20.6
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	454	89	195	418	4
Future Volume (vph)	8	454	89	195	418	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.855	0.850			0.999	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1589	1504	1687	3374	3535	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1589	1504	1687	3374	3535	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	274	286			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.81	0.81	0.71	0.71	0.74	0.74
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%
Adj. Flow (vph)	10	560	125	275	565	5
Shared Lane Traffic (%)		49%				
Lane Group Flow (vph)	284	286	125	275	570	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	25.0	25.0	37.2	74.4	37.2	
Total Split (%)	25.2%	25.2%	37.4%	74.8%	37.4%	
Maximum Green (s)	20.0	20.0	32.0	69.2	32.0	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	11.1	11.1	11.3	26.4	14.4	
Actuated g/C Ratio	0.23	0.23	0.23	0.55	0.30	
v/c Ratio	0.49	0.51	0.32	0.15	0.54	
Control Delay	7.1	6.9	21.1	4.9	17.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.1	6.9	21.1	4.9	17.4	
LOS	A	A	C	A	B	
Approach Delay	7.0			10.0	17.4	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 48.3			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	454	89	195	418	4
Future Volume (vph)	8	454	89	195	418	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.86	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1590	1504	1687	3374	3534	
Flt Permitted	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1590	1504	1687	3374	3534	
Peak-hour factor, PHF	0.81	0.81	0.71	0.71	0.74	0.74
Adj. Flow (vph)	10	560	125	275	565	5
RTOR Reduction (vph)	212	221	0	0	1	0
Lane Group Flow (vph)	72	65	125	275	569	0
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	11.1	11.1	8.2	27.8	14.4	
Effective Green, g (s)	11.1	11.1	8.2	27.8	14.4	
Actuated g/C Ratio	0.23	0.23	0.17	0.57	0.29	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	359	340	281	1910	1036	
v/s Ratio Prot	c0.05		c0.07	0.08	c0.16	
v/s Ratio Perm		0.04				
v/c Ratio	0.20	0.19	0.44	0.14	0.55	
Uniform Delay, d1	15.4	15.4	18.4	5.0	14.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.2	1.1	0.0	0.6	
Delay (s)	15.6	15.6	19.5	5.1	15.2	
Level of Service	B	B	B	A	B	
Approach Delay (s)	15.6			9.6	15.2	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	15.4
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

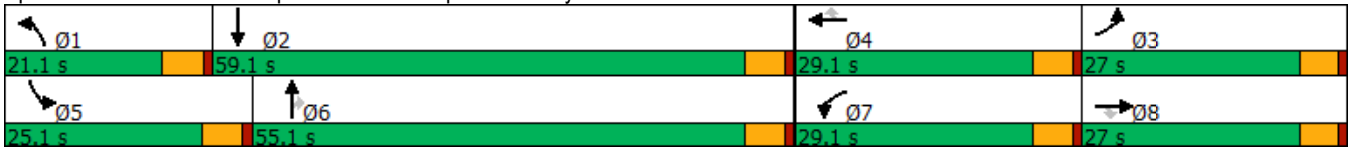
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	132	94	165	61	10	38	229	250	85	718	69
Future Volume (vph)	45	132	94	165	61	10	38	229	250	85	718	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	75		50	200		250	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99					0.98					1.00	
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950	0.977		0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	1665	1712	1568	1687	3374	1509	1770	3486	0
Flt Permitted	0.950			0.950	0.424		0.950			0.950		
Satd. Flow (perm)	1724	1827	1553	1665	743	1537	1687	3374	1509	1770	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			98			309		9	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			337			574			1022	
Travel Time (s)		12.7			7.7			11.2			19.9	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Adj. Flow (vph)	58	169	121	192	71	12	47	283	309	96	807	78
Shared Lane Traffic (%)				32%								
Lane Group Flow (vph)	58	169	121	131	132	12	47	283	309	96	885	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	7 4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	15.0	15.0	13.1	13.1	13.1	13.1	13.1	13.1	14.1	32.1	
Total Split (s)	27.0	27.0	27.0	29.1	29.1	29.1	21.1	55.1	55.1	25.1	59.1	
Total Split (%)	19.8%	19.8%	19.8%	21.3%	21.3%	21.3%	15.5%	40.4%	40.4%	18.4%	43.4%	
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0	24.0	16.0	50.0	50.0	20.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)					7.0	7.0					7.0	
Flash Dont Walk (s)					18.0	18.0					20.0	
Pedestrian Calls (#/hr)					5	5					0	
Act Effct Green (s)	14.6	19.8	19.8	10.9	10.9	26.1	8.7	19.4	19.4	10.3	23.5	
Actuated g/C Ratio	0.19	0.26	0.26	0.14	0.14	0.34	0.11	0.25	0.25	0.13	0.30	
v/c Ratio	0.18	0.36	0.25	0.56	0.55	0.02	0.25	0.33	0.51	0.41	0.83	
Control Delay	39.5	31.0	8.1	46.1	45.4	0.1	42.1	26.1	6.3	42.8	33.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	39.5	31.0	8.1	46.1	45.4	0.1	42.1	26.1	6.3	42.8	33.5	
LOS	D	C	A	D	D	A	D	C	A	D	C	
Approach Delay		24.4			43.7			17.7			34.4	
Approach LOS		C			D			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 136.3			
Actuated Cycle Length: 77.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 29.2		Intersection LOS: C	
Intersection Capacity Utilization 62.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	132	94	165	61	10	38	229	250	85	718	69
Future Volume (vph)	45	132	94	165	61	10	38	229	250	85	718	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	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	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1665	1713	1542	1687	3374	1509	1770	3485	
Flt Permitted	0.95	1.00	1.00	0.95	0.42	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1827	1553	1665	743	1542	1687	3374	1509	1770	3485	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Adj. Flow (vph)	58	169	121	192	71	12	47	283	309	96	807	78
RTOR Reduction (vph)	0	0	89	0	0	9	0	0	230	0	6	0
Lane Group Flow (vph)	58	169	32	131	132	3	47	283	79	96	879	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	14.6	21.5	21.5	10.9	17.8	17.8	4.2	20.5	20.5	7.2	23.5	
Effective Green, g (s)	14.6	21.5	21.5	10.9	17.8	17.8	4.2	20.5	20.5	7.2	23.5	
Actuated g/C Ratio	0.18	0.27	0.27	0.14	0.22	0.22	0.05	0.25	0.25	0.09	0.29	
Clearance Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	315	488	415	225	296	341	88	860	384	158	1018	
v/s Ratio Prot	0.03	c0.09		c0.08	0.06		0.03	0.08		c0.05	c0.25	
v/s Ratio Perm			0.02		c0.04	0.00			0.05			
v/c Ratio	0.18	0.35	0.08	0.58	0.45	0.01	0.53	0.33	0.21	0.61	0.86	
Uniform Delay, d1	27.9	23.8	22.0	32.6	27.0	24.4	37.1	24.4	23.5	35.2	26.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.2	0.0	2.5	0.4	0.0	3.1	0.1	0.1	4.5	7.4	
Delay (s)	28.0	23.9	22.1	35.1	27.4	24.4	40.2	24.4	23.6	39.7	34.4	
Level of Service	C	C	C	D	C	C	D	C	C	D	C	
Approach Delay (s)		24.0			30.9			25.2			34.9	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	20.3
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

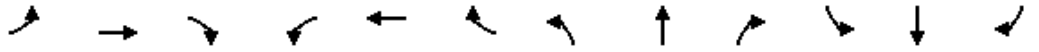
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	230	37	0	0	0	146	1205	0	399	1169	621
Future Volume (vph)	144	230	37	0	0	0	146	1205	0	399	1169	621
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	0		0	100		0	280		0
Storage Lanes	1		1	0		0	1		0	0		1
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	1900	1615	0	0	0	1752	3505	0	1770	3539	1583
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1805	1900	1615	0	0	0	1752	3505	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67									505
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		319			289			263			261	
Travel Time (s)		7.3			6.6			5.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	157	250	40	0	0	0	154	1268	0	407	1193	634
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	250	40	0	0	0	154	1268	0	407	1193	634
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1				1	2		1	2	1
Detector Template	Left	Thru	Right				Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20				20	100		20	100	20
Trailing Detector (ft)	0	0	0				0	0		0	0	0
Detector 1 Position(ft)	0	0	0				0	0		0	0	0
Detector 1 Size(ft)	20	6	20				20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases		4					5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4									6
Detector Phase	4	4	4				5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0				4.0	12.0		4.0	12.0	12.0
Minimum Split (s)	9.2	9.2	9.2				7.5	16.5		7.5	16.5	16.5
Total Split (s)	51.2	51.2	51.2				23.5	44.5		43.5	64.5	64.5
Total Split (%)	36.8%	36.8%	36.8%				16.9%	32.0%		31.3%	46.3%	46.3%
Maximum Green (s)	47.0	47.0	47.0				20.0	40.0		40.0	60.0	60.0
Yellow Time (s)	3.7	3.7	3.7				3.5	4.5		3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5				0.0	0.0		0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.2	4.2	4.2				3.5	4.5		3.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0				2.0	2.5		2.0	2.5	2.5
Recall Mode	None	None	None				None	Min		None	Min	Min
Act Effct Green (s)	16.9	16.9	16.9				13.3	40.8		27.1	54.6	54.6
Actuated g/C Ratio	0.17	0.17	0.17				0.14	0.42		0.28	0.56	0.56
v/c Ratio	0.50	0.76	0.12				0.64	0.86		0.83	0.60	0.57
Control Delay	43.2	54.3	4.0				54.3	35.4		48.1	17.1	5.6
Queue Delay	0.0	0.0	0.0				0.0	5.1		0.0	0.0	0.0
Total Delay	43.2	54.3	4.0				54.3	40.6		48.1	17.1	5.6
LOS	D	D	A				D	D		D	B	A
Approach Delay		45.9						42.0			19.5	
Approach LOS		D						D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 97.2			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 30.2		Intersection LOS: C	
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: SR 84/Woodside Rd & Veterans Blvd/US 101 SB On-Ramp





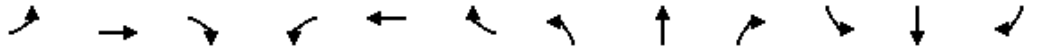
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	230	37	0	0	0	146	1205	0	399	1169	621
Future Volume (veh/h)	144	230	37	0	0	0	146	1205	0	399	1169	621
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	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
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				1856	1856	0	1870	1870	1870
Adj Flow Rate, veh/h	157	250	40				154	1268	0	407	1193	634
Peak Hour Factor	0.92	0.92	0.92				0.95	0.95	0.95	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				3	3	0	2	2	2
Cap, veh/h	290	304	258				192	1510	0	453	2039	909
Arrive On Green	0.16	0.16	0.16				0.11	0.43	0.00	0.25	0.57	0.57
Sat Flow, veh/h	1810	1900	1610				1767	3618	0	1781	3554	1585
Grp Volume(v), veh/h	157	250	40				154	1268	0	407	1193	634
Grp Sat Flow(s),veh/h/ln	1810	1900	1610				1767	1763	0	1781	1777	1585
Q Serve(g_s), s	6.2	9.9	1.7				6.6	24.9	0.0	17.1	16.7	22.0
Cycle Q Clear(g_c), s	6.2	9.9	1.7				6.6	24.9	0.0	17.1	16.7	22.0
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	290	304	258				192	1510	0	453	2039	909
V/C Ratio(X)	0.54	0.82	0.16				0.80	0.84	0.00	0.90	0.59	0.70
Avail Cap(c_a), veh/h	1098	1153	977				456	1821	0	920	2754	1228
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	29.9	31.5	28.0				33.7	19.8	0.0	27.9	10.6	11.7
Incr Delay (d2), s/veh	0.6	2.1	0.1				2.9	2.9	0.0	2.7	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.5	0.0				2.9	9.7	0.0	7.2	5.5	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.5	33.6	28.1				36.6	22.7	0.0	30.6	10.8	12.6
LnGrp LOS	C	C	C				D	C	A	C	B	B
Approach Vol, veh/h		447						1422			2234	
Approach Delay, s/veh		32.0						24.2			14.9	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	23.2	37.7		16.6	11.9	48.9
Change Period (Y+Rc), s	3.5	4.5		* 4.2	3.5	4.5
Max Green Setting (Gmax), s	40.0	40.0		* 47	20.0	60.0
Max Q Clear Time (g_c+I1), s	19.1	26.9		11.9	8.6	24.0
Green Ext Time (p_c), s	0.6	6.3		0.5	0.1	11.9

Intersection Summary	
HCM 6th Ctrl Delay	20.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



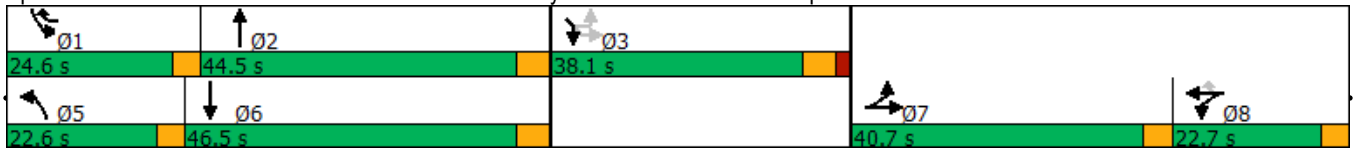
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	322	107	191	245	572	77	1080	22	100	1048	59
Future Volume (vph)	330	322	107	191	245	572	77	1080	22	100	1048	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	110					0	275		0
Storage Lanes	1		1	1					0	1		0
Taper Length (ft)	40			50						25		
Lane Util. Factor	0.91	0.91	0.95	0.91	0.91	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.98	1.00			1.00			1.00	
Frt		0.968				0.850		0.997			0.992	
Flt Protected	0.950	0.992		0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1610	3217	0	1626	3396	1599	1752	3493	0	1787	3543	0
Flt Permitted	0.950	0.992		0.950	0.992		0.950			0.950		
Satd. Flow (perm)	1610	3217	0	1593	3385	1599	1752	3493	0	1787	3543	0
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		17				358		1				
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		624			576			625			219	
Travel Time (s)		17.0			15.7			12.2			4.3	
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	367	358	119	210	269	629	85	1187	24	125	1310	74
Shared Lane Traffic (%)	24%			26%								
Lane Group Flow (vph)	279	565	0	155	324	629	85	1211	0	125	1384	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	SEL2	SEL	SER	SER2
Lane Configurations				
Traffic Volume (vph)	1	453	516	41
Future Volume (vph)	1	453	516	41
Ideal Flow (vphpl)	1900	1900	1900	1900
Storage Length (ft)		250	0	
Storage Lanes		2	1	
Taper Length (ft)		100		
Lane Util. Factor	0.95	0.97	0.91	0.95
Ped Bike Factor				
Frt		0.948	0.850	
Flt Protected		0.968		
Satd. Flow (prot)	0	3316	1441	0
Flt Permitted		0.968		
Satd. Flow (perm)	0	3316	1441	0
Right Turn on Red				No
Satd. Flow (RTOR)				
Link Speed (mph)		30		
Link Distance (ft)		434		
Travel Time (s)		9.9		
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles (%)	2%	2%	2%	2%
Adj. Flow (vph)	1	521	593	47
Shared Lane Traffic (%)			46%	
Lane Group Flow (vph)	0	795	367	0
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Left	Left	Right	Right
Median Width(ft)		24		
Link Offset(ft)		0		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9
Number of Detectors	1	1	1	
Detector Template	Left	Left	Right	
Leading Detector (ft)	20	20	20	
Trailing Detector (ft)	0	0	0	
Detector 1 Position(ft)	0	0	0	
Detector 1 Size(ft)	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel				
Detector 1 Extend (s)	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Detector Phase	7	7		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	4.0	4.0	16.0		4.0	10.0	
Minimum Split (s)	40.7	40.7		11.7	11.7	7.6	7.6	29.5		7.6	14.5	
Total Split (s)	40.7	40.7		22.7	22.7	24.6	22.6	44.5		24.6	46.5	
Total Split (%)	23.9%	23.9%		13.3%	13.3%	14.4%	13.2%	26.1%		14.4%	27.3%	
Maximum Green (s)	37.0	37.0		19.0	19.0	21.0	19.0	40.0		21.0	42.0	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
All-Red Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.0		0.8	1.0	
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1		0.1	0.1	
Recall Mode	Max	Max		Max	Max	None	None	Max		None	Max	
Walk Time (s)	4.0	4.0						4.0				
Flash Dont Walk (s)	33.0	33.0						21.0				
Pedestrian Calls (#/hr)	32	32						0				
Act Effct Green (s)	37.0	37.0		19.0	19.0	40.7	11.6	40.0		18.0	46.5	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.24	0.07	0.24		0.11	0.28	
v/c Ratio	0.79	0.78		0.84	0.84	0.95	0.71	1.45		0.65	1.41	
Control Delay	78.5	68.7		107.6	92.5	51.8	105.7	253.5		88.0	233.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	1.1	
Total Delay	78.5	68.7		107.6	92.5	51.8	105.7	253.5		88.0	234.5	
LOS	E	E		F	F	D	F	F		F	F	
Approach Delay		71.9			71.5			243.8			222.4	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 170.6			
Actuated Cycle Length: 167.7			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.45			
Intersection Signal Delay: 171.8		Intersection LOS: F	
Intersection Capacity Utilization 116.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 6: SR 84/Woodside Rd & Broadway St & US 101 SB Off-Ramp





Lane Group	SEL2	SEL	SER	SER2
Detector 2 Extend (s)				
Turn Type	Perm	Perm	Prot	
Protected Phases			3	
Permitted Phases	3	3		
Detector Phase	3	3	3	
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	
Minimum Split (s)	31.1	31.1	31.1	
Total Split (s)	38.1	38.1	38.1	
Total Split (%)	22.3%	22.3%	22.3%	
Maximum Green (s)	32.0	32.0	32.0	
Yellow Time (s)	4.1	4.1	4.1	
All-Red Time (s)	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	
Total Lost Time (s)		6.1	6.1	
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	1.2	1.2	1.2	
Minimum Gap (s)	1.2	1.2	1.2	
Time Before Reduce (s)	0.8	0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	
Recall Mode	None	None	None	
Walk Time (s)	4.0	4.0	4.0	
Flash Dont Walk (s)	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)		32.0	32.0	
Actuated g/C Ratio		0.19	0.19	
v/c Ratio		1.26	1.33	
Control Delay		180.8	222.7	
Queue Delay		0.0	0.0	
Total Delay		180.8	222.7	
LOS		F	F	
Approach Delay		194.0		
Approach LOS		F		

Intersection Summary

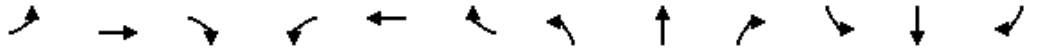
Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	322	107	191	245	572	77	1080	22	100	1048	59
Future Volume (vph)	330	322	107	191	245	572	77	1080	22	100	1048	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lane Util. Factor	0.91	0.91		0.91	0.91	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	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	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.99		0.95	0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3220		1626	3395	1599	1752	3494		1787	3543	
Flt Permitted	0.95	0.99		0.95	0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1610	3220		1626	3395	1599	1752	3494		1787	3543	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	367	358	119	210	269	629	85	1187	24	125	1310	74
RTOR Reduction (vph)	0	13	0	0	0	279	0	1	0	0	0	0
Lane Group Flow (vph)	279	552	0	155	324	350	85	1210	0	125	1384	0
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	37.0	37.0		19.0	19.0	37.0	11.6	40.1		18.0	46.5	
Effective Green, g (s)	37.0	37.0		19.0	19.0	37.0	11.6	40.1		18.0	46.5	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.22	0.07	0.24		0.11	0.28	
Clearance Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	355	710		184	384	352	121	835		191	982	
v/s Ratio Prot	c0.17	0.17		0.10	0.10	c0.11	0.05	0.35		0.07	c0.39	
v/s Ratio Perm						0.11						
v/c Ratio	0.79	0.78		0.84	0.84	0.99	0.70	1.45		0.65	1.41	
Uniform Delay, d1	61.6	61.5		72.9	72.9	65.2	76.4	63.8		71.9	60.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.0	8.2		35.0	19.8	46.1	14.0	209.0		6.0	190.3	
Delay (s)	77.6	69.6		107.9	92.7	111.4	90.4	272.8		77.9	250.9	
Level of Service	E	E		F	F	F	F	F		E	F	
Approach Delay (s)		72.3			105.4			260.8			236.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	188.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	167.7	Sum of lost time (s)	21.6
Intersection Capacity Utilization	116.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL2	SEL	SER	SER2
Lane Configurations				
Traffic Volume (vph)	1	453	516	41
Future Volume (vph)	1	453	516	41
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		6.1	6.1	
Lane Util. Factor		0.97	0.91	
Frpb, ped/bikes		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	
Frt		0.95	0.85	
Flt Protected		0.97	1.00	
Satd. Flow (prot)		3319	1441	
Flt Permitted		0.97	1.00	
Satd. Flow (perm)		3319	1441	
Peak-hour factor, PHF	0.92	0.87	0.87	0.87
Adj. Flow (vph)	1	521	593	47
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	795	367	0
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Heavy Vehicles (%)	2%	2%	2%	2%
Turn Type	Perm	Perm	Prot	
Protected Phases			3	
Permitted Phases	3	3		
Actuated Green, G (s)		32.0	32.0	
Effective Green, g (s)		32.0	32.0	
Actuated g/C Ratio		0.19	0.19	
Clearance Time (s)		6.1	6.1	
Vehicle Extension (s)		1.2	1.2	
Lane Grp Cap (vph)		633	274	
v/s Ratio Prot			c0.25	
v/s Ratio Perm		0.24		
v/c Ratio		1.26	1.34	
Uniform Delay, d1		67.8	67.8	
Progression Factor		1.00	1.00	
Incremental Delay, d2		127.7	175.3	
Delay (s)		195.6	243.2	
Level of Service		F	F	
Approach Delay (s)		210.6		
Approach LOS		F		

Intersection Summary



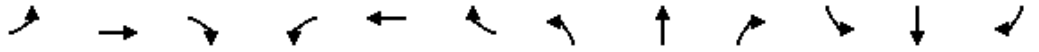
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	376	101	526	379	225	136	1234	563	202	1381	48
Future Volume (vph)	148	376	101	526	379	225	136	1234	563	202	1381	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.968				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3411	0	3467	1881	1599	1752	3505	1568	3467	3574	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3411	0	3461	1881	1599	1752	3505	1568	3467	3574	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				70			37			64
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			693			790			776	
Travel Time (s)		19.2			15.8			15.4			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			4									
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	172	437	117	566	408	242	146	1327	605	213	1454	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	554	0	566	408	242	146	1327	605	213	1454	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	21.2	24.2		26.2	29.2	11.2	14.2	68.0	26.2	11.2	65.0	21.2
Total Split (%)	16.4%	18.7%		20.2%	22.5%	8.6%	11.0%	52.5%	20.2%	8.6%	50.2%	16.4%
Maximum Green (s)	18.0	20.0		23.0	25.0	8.0	11.0	63.0	23.0	8.0	60.0	18.0
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	14.7	22.3		21.9	29.5	41.8	11.1	58.0	84.9	8.1	55.0	74.7
Actuated g/C Ratio	0.12	0.18		0.17	0.23	0.33	0.09	0.46	0.67	0.06	0.44	0.59
v/c Ratio	0.84	0.89		0.94	0.93	0.42	0.95	0.82	0.57	0.96	0.93	0.05
Control Delay	87.3	66.9		77.0	76.9	26.7	119.0	35.1	12.9	110.8	45.6	2.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.3	66.9		77.0	76.9	26.7	119.0	35.1	12.9	110.8	45.6	2.0
LOS	F	E		E	E	C	F	D	B	F	D	A
Approach Delay		71.8			66.9			34.5			52.4	
Approach LOS		E			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129.6			
Actuated Cycle Length: 126			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 51.4		Intersection LOS: D	
Intersection Capacity Utilization 89.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	376	101	526	379	225	136	1234	563	202	1381	48
Future Volume (veh/h)	148	376	101	526	379	225	136	1234	563	202	1381	48
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	172	437	117	566	408	242	146	1327	605	213	1454	51
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	1	1	1
Cap, veh/h	198	450	119	616	431	468	158	1649	1014	227	1588	886
Arrive On Green	0.11	0.16	0.16	0.18	0.23	0.23	0.09	0.47	0.47	0.07	0.44	0.44
Sat Flow, veh/h	1781	2764	733	3483	1885	1593	1767	3526	1572	3483	3582	1598
Grp Volume(v), veh/h	172	279	275	566	408	242	146	1327	605	213	1454	51
Grp Sat Flow(s),veh/h/ln	1781	1777	1720	1742	1885	1593	1767	1763	1572	1742	1791	1598
Q Serve(g_s), s	11.7	19.2	19.5	19.6	26.2	15.5	10.1	39.4	27.3	7.5	46.7	1.8
Cycle Q Clear(g_c), s	11.7	19.2	19.5	19.6	26.2	15.5	10.1	39.4	27.3	7.5	46.7	1.8
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	290	280	616	431	468	158	1649	1014	227	1588	886
V/C Ratio(X)	0.87	0.97	0.98	0.92	0.95	0.52	0.92	0.80	0.60	0.94	0.92	0.06
Avail Cap(c_a), veh/h	261	290	280	653	431	468	158	1810	1085	227	1751	959
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.7	51.0	51.2	49.6	46.6	36.1	55.4	27.9	12.6	57.1	32.0	12.6
Incr Delay (d2), s/veh	17.2	43.0	47.9	17.0	29.8	0.5	48.3	2.2	0.5	42.3	7.1	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	6.2	12.0	12.1	10.0	15.8	6.1	6.6	16.5	9.2	4.6	21.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.9	94.1	99.0	66.6	76.4	36.5	103.8	30.1	13.1	99.4	39.1	12.6
LnGrp LOS	E	F	F	E	E	D	F	C	B	F	D	B
Approach Vol, veh/h		726			1216			2078			1718	
Approach Delay, s/veh		90.4			63.9			30.3			45.8	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	62.4	24.9	24.2	14.2	59.4	16.9	32.3
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	8.0	63.0	23.0	* 20	11.0	60.0	18.0	* 25
Max Q Clear Time (g_c+I1), s	9.5	41.4	21.6	21.5	12.1	48.7	13.7	28.2
Green Ext Time (p_c), s	0.0	8.6	0.1	0.0	0.0	5.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	49.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	8	12	261	6	5	10	9	219	8	11	0
Future Volume (vph)	0	8	12	261	6	5	10	9	219	8	11	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.920			0.998			0.876				
Flt Protected					0.954			0.998		0.950		
Satd. Flow (prot)	0	1748	0	0	1774	0	0	1613	0	1805	1900	0
Flt Permitted					0.954			0.998		0.950		
Satd. Flow (perm)	0	1748	0	0	1774	0	0	1613	0	1805	1900	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)			2			26			7			2
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	0	11	16	335	8	6	11	10	235	11	15	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	349	0	0	256	0	11	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

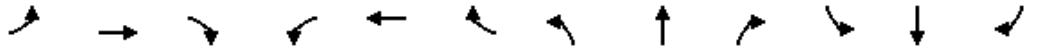
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	10.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	12	261	6	5	10	9	219	8	11	0
Future Vol, veh/h	0	8	12	261	6	5	10	9	219	8	11	0
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	2	2	2	3	3	3	0	0	0
Mvmt Flow	0	11	16	335	8	6	11	10	235	11	15	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	7.9	12	9.6	8.8
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	96%	100%	0%
Vol Thru, %	4%	40%	2%	0%	100%
Vol Right, %	92%	60%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	238	20	272	8	11
LT Vol	10	0	261	8	0
Through Vol	9	8	6	0	11
RT Vol	219	12	5	0	0
Lane Flow Rate	256	27	349	11	15
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.318	0.034	0.464	0.018	0.023
Departure Headway (Hd)	4.479	4.624	4.79	6.205	5.699
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	801	768	750	575	625
Service Time	2.518	2.69	2.836	3.965	3.459
HCM Lane V/C Ratio	0.32	0.035	0.465	0.019	0.024
HCM Control Delay	9.6	7.9	12	9.1	8.6
HCM Lane LOS	A	A	B	A	A
HCM 95th-tile Q	1.4	0.1	2.5	0.1	0.1



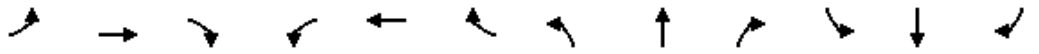
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	467	151	71	575	39	154	84	91	57	158	142
Future Volume (vph)	160	467	151	71	575	39	154	84	91	57	158	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.97		0.97	0.98	0.99		1.00	0.97	
Frt		0.963				0.850		0.922			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3358	0	1770	3539	1583	1770	1694	0	1770	1674	0
Flt Permitted	0.950			0.950			0.452			0.595		
Satd. Flow (perm)	1778	3358	0	1714	3539	1533	823	1694	0	1104	1674	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42				110		46			38	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1835			558			661	
Travel Time (s)		32.0			41.7			15.2			18.0	
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	174	508	164	81	653	44	186	101	110	66	182	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	672	0	81	653	44	186	211	0	66	345	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	35.2	55.2		25.2	45.2	45.2	43.0	43.0		43.0	43.0	
Total Split (%)	28.5%	44.7%		20.4%	36.6%	36.6%	34.8%	34.8%		34.8%	34.8%	
Maximum Green (s)	30.0	50.0		20.0	40.0	40.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		36			6	6	57	57		57	57	
Act Effct Green (s)	13.9	29.7		10.1	22.5	22.5	41.3	41.3		41.3	41.3	
Actuated g/C Ratio	0.15	0.32		0.11	0.24	0.24	0.44	0.44		0.44	0.44	
v/c Ratio	0.66	0.61		0.42	0.77	0.10	0.51	0.27		0.14	0.45	
Control Delay	51.1	28.7		49.2	39.8	0.4	27.7	15.7		19.5	20.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	51.1	28.7		49.2	39.8	0.4	27.7	15.7		19.5	20.2	
LOS	D	C		D	D	A	C	B		B	C	
Approach Delay		33.3			38.6			21.3			20.1	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 93.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 30.8		Intersection LOS: C	
Intersection Capacity Utilization 87.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	467	151	71	575	39	154	84	91	57	158	142
Future Volume (vph)	160	467	151	71	575	39	154	84	91	57	158	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3375		1770	3539	1537	1735	1697		1764	1686	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.45	1.00		0.60	1.00	
Satd. Flow (perm)	1787	3375		1770	3539	1537	826	1697		1105	1686	
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Adj. Flow (vph)	174	508	164	81	653	44	186	101	110	66	182	163
RTOR Reduction (vph)	0	29	0	0	0	33	0	26	0	0	21	0
Lane Group Flow (vph)	174	643	0	81	653	11	186	185	0	66	324	0
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	13.9	29.7		7.9	23.7	23.7	41.3	41.3		41.3	41.3	
Effective Green, g (s)	13.9	29.7		7.9	23.7	23.7	41.3	41.3		41.3	41.3	
Actuated g/C Ratio	0.15	0.31		0.08	0.25	0.25	0.44	0.44		0.44	0.44	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	263	1062		148	889	386	361	743		483	738	
v/s Ratio Prot	c0.10	0.19		0.05	c0.18			0.11			0.19	
v/s Ratio Perm						0.01	c0.23			0.06		
v/c Ratio	0.66	0.61		0.55	0.73	0.03	0.52	0.25		0.14	0.44	
Uniform Delay, d1	38.0	27.3		41.5	32.4	26.6	19.2	16.7		15.8	18.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.8	0.7		2.2	2.7	0.0	0.9	0.1		0.1	0.3	
Delay (s)	42.8	28.0		43.7	35.2	26.6	20.2	16.8		15.9	18.7	
Level of Service	D	C		D	D	C	C	B		B	B	
Approach Delay (s)		31.0			35.6			18.4			18.3	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	94.3	Sum of lost time (s)	15.4
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

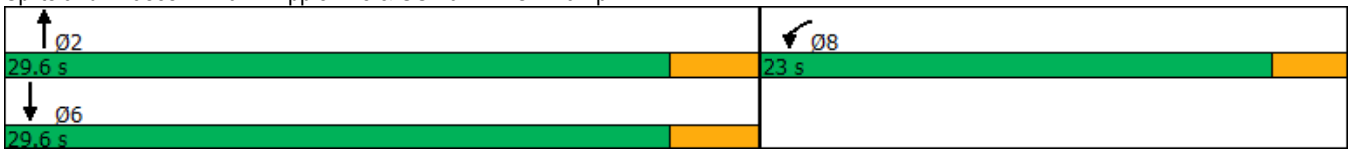


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1130	103	206	0	0	203
Future Volume (vph)	1130	103	206	0	0	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.987					
Flt Protected	0.956					
Satd. Flow (prot)	3410	0	1863	0	0	3574
Flt Permitted	0.956					
Satd. Flow (perm)	3410	0	1863	0	0	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	21					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.93	0.93	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	1215	111	258	0	0	254
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1326	0	258	0	0	254
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	23.0		29.6			29.6
Total Split (%)	43.7%		56.3%			56.3%
Maximum Green (s)	20.0		26.0			26.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	19.3		8.1			8.1
Actuated g/C Ratio	0.57		0.24			0.24
v/c Ratio	0.68		0.58			0.30
Control Delay	8.0		17.1			11.4
Queue Delay	0.0		0.0			0.0
Total Delay	8.0		17.1			11.4
LOS	A		B			B
Approach Delay	8.0		17.1			11.4
Approach LOS	A		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 34.1			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.8		Intersection LOS: A	
Intersection Capacity Utilization 87.2%		ICU Level of Service E	
Analysis Period (min) 15			

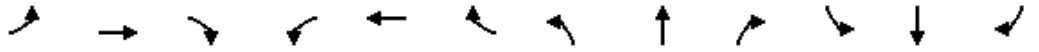
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1130	103	206	0	0	203
Future Volume (vph)	1130	103	206	0	0	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3412		1863			3574
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3412		1863			3574
Peak-hour factor, PHF	0.93	0.93	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1215	111	258	0	0	254
RTOR Reduction (vph)	9	0	0	0	0	0
Lane Group Flow (vph)	1317	0	258	0	0	254
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	19.3		8.1			8.1
Effective Green, g (s)	19.3		8.1			8.1
Actuated g/C Ratio	0.57		0.24			0.24
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1936		443			851
v/s Ratio Prot	c0.39		c0.14			0.07
v/s Ratio Perm						
v/c Ratio	0.68		0.58			0.30
Uniform Delay, d1	5.2		11.5			10.6
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.8		1.3			0.1
Delay (s)	6.0		12.7			10.7
Level of Service	A		B			B
Approach Delay (s)	6.0		12.7			10.7
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	34.0	Sum of lost time (s)	6.6
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

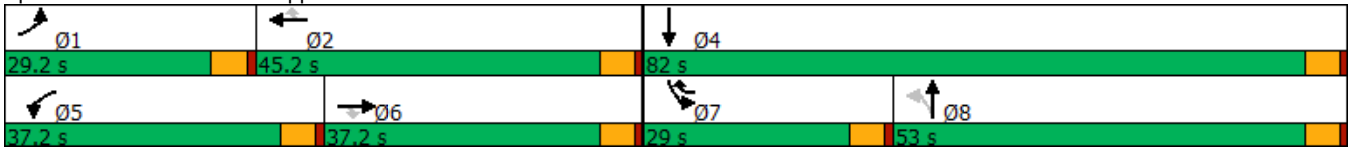


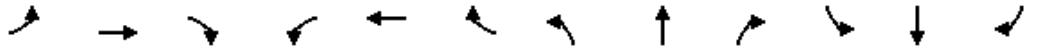
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	947	289	322	21	949	13	628	104	196	999	22
Future Volume (vph)	114	947	289	322	21	949	13	628	104	196	999	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.97	0.99		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.979			0.997	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3467	5136	1599	3467	1881	3646	0	4962	0	1770	3525	0
Flt Permitted	0.950			0.950				0.902		0.950		
Satd. Flow (perm)	3460	5136	1555	3446	1881	3568	0	4480	0	1768	3525	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			121					20			2	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)	1		11	11		1	16		2	2		16
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	128	1064	325	383	25	1130	15	714	118	218	1110	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	1064	325	383	25	1130	0	847	0	218	1134	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	29.2	37.2	37.2	37.2	45.2	29.0	53.0	53.0		29.0	82.0	
Total Split (%)	18.7%	23.8%	23.8%	23.8%	28.9%	18.5%	33.9%	33.9%		18.5%	52.4%	
Maximum Green (s)	24.0	32.0	32.0	32.0	40.0	24.0	48.0	48.0		24.0	77.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		11	11				2	2			16	
Act Effct Green (s)	10.0	32.7	32.7	18.1	40.8	61.0		29.2		20.0	54.2	
Actuated g/C Ratio	0.08	0.27	0.27	0.15	0.34	0.51		0.24		0.17	0.45	
v/c Ratio	0.44	0.77	0.64	0.74	0.04	0.62		0.77		0.74	0.72	
Control Delay	60.9	46.7	32.8	59.2	30.8	20.7		47.4		65.7	29.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	60.9	46.7	32.8	59.2	30.8	20.7		47.4		65.7	29.8	
LOS	E	D	C	E	C	C		D		E	C	
Approach Delay		44.9			30.5			47.4			35.6	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 120.7			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 38.7		Intersection LOS: D	
Intersection Capacity Utilization 93.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	947	289	322	21	949	13	628	104	196	999	22
Future Volume (veh/h)	114	947	289	322	21	949	13	628	104	196	999	22
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		0.94	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	1064	325	383	25	1130	15	714	118	218	1110	24
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	304	1370	420	466	589	1635	47	1055	171	252	1586	34
Arrive On Green	0.09	0.27	0.27	0.13	0.31	0.31	0.25	0.25	0.25	0.14	0.45	0.45
Sat Flow, veh/h	3483	5147	1578	3483	1885	3578	36	4146	671	1781	3554	77
Grp Volume(v), veh/h	128	1064	325	383	25	1130	310	268	270	218	555	579
Grp Sat Flow(s),veh/h/ln	1742	1716	1578	1742	1885	1193	1769	1549	1535	1781	1777	1854
Q Serve(g_s), s	3.5	19.1	19.1	10.7	0.9	25.2	1.0	15.6	15.9	12.0	25.2	25.2
Cycle Q Clear(g_c), s	3.5	19.1	19.1	10.7	0.9	25.2	15.0	15.6	15.9	12.0	25.2	25.2
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.44	1.00		0.04
Lane Grp Cap(c), veh/h	304	1370	420	466	589	1635	488	394	391	252	793	827
V/C Ratio(X)	0.42	0.78	0.77	0.82	0.04	0.69	0.63	0.68	0.69	0.86	0.70	0.70
Avail Cap(c_a), veh/h	835	1645	504	1113	753	1946	859	743	736	427	1367	1426
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	34.0	33.9	42.2	24.0	21.8	33.3	33.6	33.7	42.0	22.3	22.3
Incr Delay (d2), s/veh	0.3	1.6	4.8	1.4	0.0	0.6	0.5	0.8	0.8	4.2	0.4	0.4
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	1.5	8.0	7.7	4.6	0.4	7.0	6.8	5.9	6.0	5.5	10.2	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.6	35.6	38.8	43.6	24.0	22.3	33.8	34.4	34.6	46.3	22.7	22.7
LnGrp LOS	D	D	D	D	C	C	C	C	C	D	C	C
Approach Vol, veh/h		1517			1538			847			1352	
Approach Delay, s/veh		36.9			27.7			34.2			26.5	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.9	36.5		49.7	18.6	31.8	19.2	30.5
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0
Max Green Setting (Gmax), s	24.0	40.0		77.0	32.0	32.0	24.0	48.0
Max Q Clear Time (g_c+I1), s	5.5	27.2		27.2	12.7	21.1	14.0	17.9
Green Ext Time (p_c), s	0.2	2.9		5.8	0.7	4.6	0.2	4.1

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

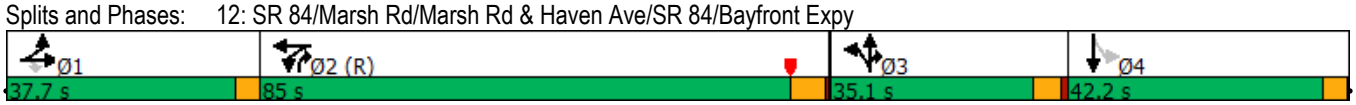
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	163	265	1664	80	4	218	0	1723	16	33	4
Future Volume (vph)	2	163	265	1664	80	4	218	0	1723	16	33	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00			0.99			1.00	
Frt			0.850		0.993				0.850		0.989	
Flt Protected		0.999		0.950				0.950			0.985	
Satd. Flow (prot)	0	3571	1599	4942	1827	0	0	1752	3575	0	3510	0
Flt Permitted		0.999		0.950				0.950			0.800	
Satd. Flow (perm)	0	3569	1577	4929	1827	0	0	1744	3575	0	2851	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			294		1						4	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Peak Hour Factor	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	2	181	294	1681	81	4	234	0	1853	25	52	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	294	1681	85	0	0	234	1853	0	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	37.7	37.7	37.7	85.0	85.0		35.1	35.1		42.2	42.2	
Total Split (%)	18.9%	18.9%	18.9%	42.5%	42.5%		17.6%	17.6%		21.1%	21.1%	
Maximum Green (s)	34.0	34.0	34.0	78.8	78.8		30.0	30.0		38.0	38.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	7	7					2	2	
Act Effct Green (s)		16.7	16.7	118.7	118.7			29.6	153.4		15.8	
Actuated g/C Ratio		0.08	0.08	0.59	0.59			0.15	0.77		0.08	
v/c Ratio		0.61	0.73	0.57	0.08			0.90	0.68		0.36	
Control Delay		96.3	18.4	28.5	21.1			116.3	22.2		85.4	
Queue Delay		0.0	0.0	0.0	0.0			0.0	1.0		0.0	
Total Delay		96.3	18.4	28.5	21.1			116.3	23.2		85.4	
LOS		F	B	C	C			F	C		F	
Approach Delay		48.3			28.2			33.6			85.4	
Approach LOS		D			C			C			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 200			
Actuated Cycle Length: 200			
Offset: 100 (50%), Referenced to phase 2:WBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 34.0		Intersection LOS: C	
Intersection Capacity Utilization 70.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	163	265	1664	80	4	218	0	1723	16	33	4
Future Volume (vph)	2	163	265	1664	80	4	218	0	1723	16	33	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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		1.00	
Frt		1.00	0.85	1.00	0.99			1.00	0.85		0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)		3572	1577	4942	1827			1752	3575		3510	
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00		0.80	
Satd. Flow (perm)		3572	1577	4942	1827			1752	3575		2851	
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Adj. Flow (vph)	2	181	294	1681	81	4	234	0	1853	25	52	6
RTOR Reduction (vph)	0	0	269	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	183	25	1681	85	0	0	234	1853	0	79	0
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		16.7	16.7	118.7	118.7			29.6	154.5		15.8	
Effective Green, g (s)		16.7	16.7	118.7	118.7			29.6	154.5		15.8	
Actuated g/C Ratio		0.08	0.08	0.59	0.59			0.15	0.77		0.08	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		298	131	2933	1084			259	2761		225	
v/s Ratio Prot		c0.05		0.34	0.05			c0.13	c0.52			
v/s Ratio Perm			0.02								c0.03	
v/c Ratio		0.61	0.19	0.57	0.08			0.90	0.67		0.35	
Uniform Delay, d1		88.5	85.3	25.0	17.3			83.8	10.7		87.3	
Progression Factor		1.00	1.00	1.00	1.00			1.13	1.48		1.00	
Incremental Delay, d2		2.6	0.3	0.8	0.1			20.0	0.3		0.3	
Delay (s)		91.2	85.6	25.9	17.5			115.0	16.2		87.6	
Level of Service		F	F	C	B			F	B		F	
Approach Delay (s)		87.7			25.5			27.2			87.6	
Approach LOS		F			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

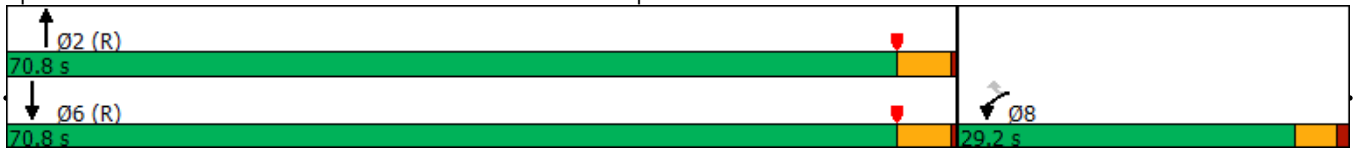


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	605	177	2003	0	0	785
Future Volume (vph)	605	177	2003	0	0	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2646	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		23				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	658	192	2131	0	0	844
Shared Lane Traffic (%)						
Lane Group Flow (vph)	658	192	2131	0	0	844
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	29.2	29.2	70.8			70.8
Total Split (%)	29.2%	29.2%	70.8%			70.8%
Maximum Green (s)	25.0	25.0	66.2			66.2
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	22.3	22.3	68.9			68.9
Actuated g/C Ratio	0.22	0.22	0.69			0.69
v/c Ratio	0.88	0.32	0.88			0.35
Control Delay	51.9	29.2	16.7			10.5
Queue Delay	0.0	0.0	3.0			0.0
Total Delay	51.9	29.2	19.7			10.5
LOS	D	C	B			B
Approach Delay	46.8		19.7			10.5
Approach LOS	D		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 86 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 23.7		Intersection LOS: C	
Intersection Capacity Utilization 117.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	605	177	2003	0	0	785
Future Volume (veh/h)	605	177	2003	0	0	785
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	658	192	2131	0	0	844
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	724	585	2458	0	0	2458
Arrive On Green	0.21	0.21	0.70	0.00	0.00	0.70
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	658	192	2131	0	0	844
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	19.0	6.0	46.3	0.0	0.0	9.5
Cycle Q Clear(g_c), s	19.0	6.0	46.3	0.0	0.0	9.5
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	724	585	2458	0	0	2458
V/C Ratio(X)	0.91	0.33	0.87	0.00	0.00	0.34
Avail Cap(c_a), veh/h	843	681	2458	0	0	2458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	33.2	11.6	0.0	0.0	6.0
Incr Delay (d2), s/veh	11.5	0.1	4.4	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	2.0	15.8	0.0	0.0	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.8	33.3	16.0	0.0	0.0	6.4
LnGrp LOS	D	C	B	A	A	A
Approach Vol, veh/h	850		2131			844
Approach Delay, s/veh	46.1		16.0			6.4
Approach LOS	D		B			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		74.3			74.3	25.7
Change Period (Y+Rc), s		4.6			4.6	4.2
Max Green Setting (Gmax), s		66.2			66.2	25.0
Max Q Clear Time (g_c+I1), s		48.3			11.5	21.0
Green Ext Time (p_c), s		11.8			4.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

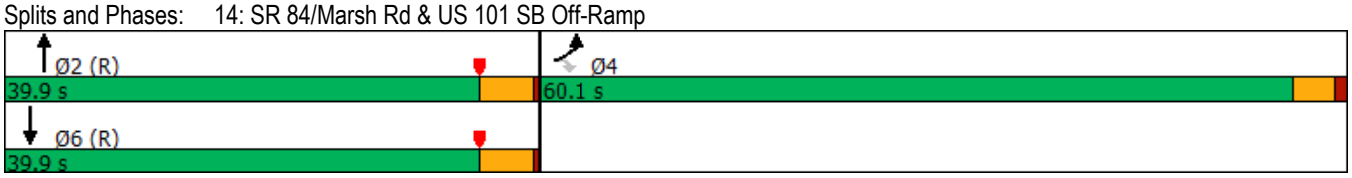


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1428	504	0	962	1061	0
Future Volume (vph)	1428	504	0	962	1061	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		11				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	1503	531	0	1069	1192	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1503	531	0	1069	1192	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	60.1	60.1		39.9	39.9	
Total Split (%)	60.1%	60.1%		39.9%	39.9%	
Maximum Green (s)	56.0	56.0		35.3	35.3	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	52.1	52.1		39.2	39.2	
Actuated g/C Ratio	0.52	0.52		0.39	0.39	
v/c Ratio	0.87	0.66		0.76	0.87	
Control Delay	26.8	21.1		31.7	54.1	
Queue Delay	0.4	0.0		0.0	0.0	
Total Delay	27.2	21.1		31.7	54.1	
LOS	C	C		C	D	
Approach Delay	25.6			31.7	54.1	
Approach LOS	C			C	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 35.0		Intersection LOS: D	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1428	504	0	962	1061	0
Future Volume (veh/h)	1428	504	0	962	1061	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	1503	531	0	1069	1192	0
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1572	721	0	1602	1576	0
Arrive On Green	0.47	0.47	0.00	0.45	0.45	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	1503	531	0	1069	1192	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	42.9	27.9	0.0	23.5	28.2	0.0
Cycle Q Clear(g_c), s	42.9	27.9	0.0	23.5	28.2	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1572	721	0	1602	1576	0
V/C Ratio(X)	0.96	0.74	0.00	0.67	0.76	0.00
Avail Cap(c_a), veh/h	1889	867	0	1602	1576	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.7	21.7	0.0	21.8	23.1	0.0
Incr Delay (d2), s/veh	10.3	2.0	0.0	2.2	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	10.1	0.0	9.8	11.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.0	23.7	0.0	24.0	26.5	0.0
LnGrp LOS	D	C	A	C	C	A
Approach Vol, veh/h	2034			1069	1192	
Approach Delay, s/veh	32.8			24.0	26.5	
Approach LOS	C			C	C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		49.3		50.7		49.3
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		35.3		56.0		35.3
Max Q Clear Time (g_c+I1), s		25.5		44.9		30.2
Green Ext Time (p_c), s		2.4		1.7		1.8

Intersection Summary	
HCM 6th Ctrl Delay	28.9
HCM 6th LOS	C

Existing Full Project AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	3	328	37	3	371	248
Future Volume (vph)	3	328	37	3	371	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.866					0.850
Flt Protected				0.956	0.950	
Satd. Flow (prot)	1296	0	0	1730	1752	1568
Flt Permitted				0.956	0.950	
Satd. Flow (perm)	1296	0	0	1730	1752	1568
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles (%)	27%	27%	5%	5%	3%	3%
Adj. Flow (vph)	4	410	48	4	523	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	414	0	0	52	523	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	29.4
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	328	37	3	371	248
Future Vol, veh/h	3	328	37	3	371	248
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles, %	27	27	5	5	3	3
Mvmt Flow	4	410	48	4	523	349
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	19.4	10.7	35.3
HCM LOS	C	B	E

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	93%
Vol Thru, %	0%	0%	1%	7%
Vol Right, %	0%	100%	99%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	371	248	331	40
LT Vol	371	0	0	37
Through Vol	0	0	3	3
RT Vol	0	248	328	0
Lane Flow Rate	523	349	414	52
Geometry Grp	5	5	2	2
Degree of Util (X)	0.94	0.511	0.664	0.099
Departure Headway (Hd)	6.479	5.265	5.779	6.868
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	685	629	522
Service Time	4.21	2.996	3.779	4.913
HCM Lane V/C Ratio	0.936	0.509	0.658	0.1
HCM Control Delay	49.9	13.4	19.4	10.7
HCM Lane LOS	E	B	C	B
HCM 95th-tile Q	12	2.9	5	0.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	18	619	364	1
Future Volume (vph)	0	0	18	619	364	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1719	3438	3059	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1719	3438	3059	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.72	0.72	0.83	0.83
Heavy Vehicles (%)	2%	2%	5%	5%	18%	18%
Adj. Flow (vph)	0	0	25	860	439	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	25	860	440	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	18	619	364	1
Future Vol, veh/h	0	0	18	619	364	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	72	72	83	83
Heavy Vehicles, %	2	2	5	5	18	18
Mvmt Flow	0	0	25	860	439	1

Major/Minor	Minor2		Major2	
Conflicting Flow All	440	440	-	0
Stage 1	440	440	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.9	6.6	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.55	4.05	-	-
Pot Cap-1 Maneuver	538	~ 503	-	-
Stage 1	608	~ 568	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	538	0	-	-
Mov Cap-2 Maneuver	538	0	-	-
Stage 1	608	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	538	-	-	-	-
HCM Lane V/C Ratio	0.046	-	-	-	-
HCM Control Delay (s)	12	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	294	213	161	37	0
Future Volume (vph)	0	294	213	161	37	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			484	416	
Travel Time (s)	10.1			11.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	320	232	175	40	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	320	0	232	175	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	294	213	161	37	0
Future Vol, veh/h	0	294	213	161	37	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	320	232	175	40	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.3	11.1	8.7
HCM LOS	B	B	A

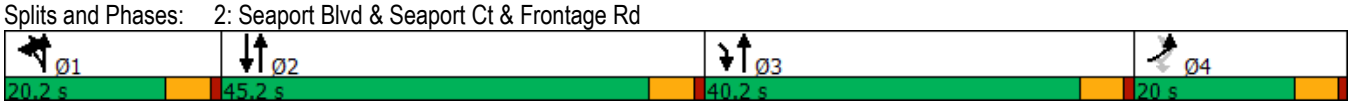
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	213	161	294	37
LT Vol	213	0	0	0
Through Vol	0	161	0	37
RT Vol	0	0	294	0
Lane Flow Rate	232	175	320	40
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.372	0.257	0.393	0.059
Departure Headway (Hd)	5.792	5.288	4.422	5.257
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	618	674	815	674
Service Time	3.567	3.062	2.452	3.347
HCM Lane V/C Ratio	0.375	0.26	0.393	0.059
HCM Control Delay	12	9.9	10.3	8.7
HCM Lane LOS	B	A	B	A
HCM 95th-tile Q	1.7	1	1.9	0.2

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	13	28	13	637	363	1	0	33	1
Future Volume (vph)	0	13	28	13	637	363	1	0	33	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60		265			0	0	0	
Storage Lanes	1	1		1			0	0	1	
Taper Length (ft)	25			50				25		
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00						
Frt		0.850							0.865	
Flt Protected				0.950						
Satd. Flow (prot)	1759	1495	0	1626	3252	3085	0	0	1015	0
Flt Permitted				0.950						
Satd. Flow (perm)	1759	1474	0	1622	3252	3085	0	0	1015	0
Right Turn on Red		Yes								No
Satd. Flow (RTOR)		615								
Link Speed (mph)	30				35	35		30		
Link Distance (ft)	369				675	1774		538		
Travel Time (s)	8.4				13.1	34.6		12.2		
Confl. Peds. (#/hr)		2	1							1
Peak Hour Factor	0.54	0.54	0.76	0.76	0.76	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles (%)	8%	8%	11%	11%	11%	17%	17%	62%	62%	62%
Adj. Flow (vph)	0	24	37	17	838	432	1	0	39	1
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	24	0	54	838	433	0	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	12				12	12		0		
Link Offset(ft)	0				0	0		0		
Crosswalk Width(ft)	16				16	16		16		
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	2	2			1	
Detector Template	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)					94	94				
Detector 2 Size(ft)					6	6				
Detector 2 Type					Cl+Ex	Cl+Ex				
Detector 2 Channel										
Detector 2 Extend (s)					0.0	0.0				

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Detector Phase	4	4	1	1	2	2			3	
Switch Phase										
Minimum Initial (s)	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	20.0	20.0	20.2	20.2		45.2			40.2	
Total Split (%)	15.9%	15.9%	16.1%	16.1%		36.0%			32.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0		40.0			35.0	
Yellow Time (s)	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0								
Pedestrian Calls (#/hr)	2	2								
Act Effct Green (s)		14.7		11.9	60.3	42.7			13.2	
Actuated g/C Ratio		0.22		0.17	0.88	0.63			0.19	
v/c Ratio		0.03		0.19	0.29	0.22			0.20	
Control Delay		0.1		38.5	3.7	17.2			39.5	
Queue Delay		0.0		0.0	0.0	0.0			0.0	
Total Delay		0.1		38.5	3.7	17.2			39.5	
LOS		A		D	A	B			D	
Approach Delay	0.1				5.8	17.2		39.5		
Approach LOS	A				A	B		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 68.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.29			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 46.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	13	28	13	637	363	1	0	33	1
Future Volume (vph)	0	13	28	13	637	363	1	0	33	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00		1.00	0.95	0.95			1.00	
Frpb, ped/bikes		0.99		1.00	1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00			1.00	
Frt		0.85		1.00	1.00	1.00			0.86	
Flt Protected		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1475		1626	3252	3084			1015	
Flt Permitted		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1475		1626	3252	3084			1015	
Peak-hour factor, PHF	0.54	0.54	0.76	0.76	0.76	0.84	0.84	0.85	0.85	0.85
Adj. Flow (vph)	0	24	37	17	838	432	1	0	39	1
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	2	0	54	838	433	0	0	40	0
Confl. Peds. (#/hr)		2	1							1
Heavy Vehicles (%)	8%	8%	11%	11%	11%	17%	17%	62%	62%	62%
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Actuated Green, G (s)		5.1		5.3	60.6	39.0			5.9	
Effective Green, g (s)		5.1		5.3	60.6	39.0			5.9	
Actuated g/C Ratio		0.07		0.07	0.80	0.51			0.08	
Clearance Time (s)		5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		99		113	2596	1584			78	
v/s Ratio Prot				0.03	c0.26	0.14			c0.04	
v/s Ratio Perm		c0.00								
v/c Ratio		0.02		0.48	0.32	0.27			0.51	
Uniform Delay, d1		33.1		34.0	2.1	10.4			33.6	
Progression Factor		1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.1		4.3	0.1	0.1			7.4	
Delay (s)		33.1		38.3	2.2	10.6			41.0	
Level of Service		C		D	A	B			D	
Approach Delay (s)	33.1				4.4	10.6		41.0		
Approach LOS	C				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	20.6
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	66	473	673	403	6
Future Volume (vph)	5	66	473	673	403	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.870	0.850			0.998	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1441	1346	1736	3471	2771	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1441	1346	1736	3471	2771	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	40	46			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.77	0.77	0.83	0.83	0.81	0.81
Heavy Vehicles (%)	14%	14%	4%	4%	30%	30%
Adj. Flow (vph)	6	86	570	811	498	7
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	46	46	570	811	505	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	25.0	25.0	37.2	74.4	37.2	
Total Split (%)	25.2%	25.2%	37.4%	74.8%	37.4%	
Maximum Green (s)	20.0	20.0	32.0	69.2	32.0	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.3	10.3	32.4	57.9	18.7	
Actuated g/C Ratio	0.14	0.14	0.44	0.79	0.26	
v/c Ratio	0.19	0.20	0.74	0.29	0.71	
Control Delay	15.3	13.1	27.3	3.3	31.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	15.3	13.1	27.3	3.3	31.4	
LOS	B	B	C	A	C	
Approach Delay	14.2			13.2	31.4	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
Cycle Length: 99.4
Actuated Cycle Length: 73
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 17.9 Intersection LOS: B
Intersection Capacity Utilization 58.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	66	473	673	403	6
Future Volume (vph)	5	66	473	673	403	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.87	0.85	1.00	1.00	1.00	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1440	1346	1736	3471	2771	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1440	1346	1736	3471	2771	
Peak-hour factor, PHF	0.77	0.77	0.83	0.83	0.81	0.81
Adj. Flow (vph)	6	86	570	811	498	7
RTOR Reduction (vph)	36	41	0	0	1	0
Lane Group Flow (vph)	10	5	570	811	504	0
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	14%	14%	4%	4%	30%	30%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	7.5	7.5	32.5	56.5	18.8	
Effective Green, g (s)	7.5	7.5	32.5	56.5	18.8	
Actuated g/C Ratio	0.10	0.10	0.44	0.76	0.25	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	145	136	760	2643	702	
v/s Ratio Prot	c0.01		c0.33	0.23	c0.18	
v/s Ratio Perm		0.00				
v/c Ratio	0.07	0.03	0.75	0.31	0.72	
Uniform Delay, d1	30.2	30.1	17.4	2.8	25.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.1	4.2	0.1	3.5	
Delay (s)	30.3	30.2	21.6	2.8	28.8	
Level of Service	C	C	C	A	C	
Approach Delay (s)	30.2			10.6	28.8	
Approach LOS	C			B	C	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	74.2	Sum of lost time (s)	15.4
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

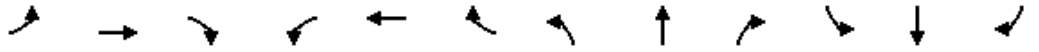
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	74	98	241	81	63	91	965	181	12	397	60
Future Volume (vph)	116	74	98	241	81	63	91	965	181	12	397	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	75		50	200		250	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850			0.850		0.980	
Flt Protected	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (prot)	1410	1484	1262	1603	1645	1509	1671	3343	1495	1444	2821	0
Flt Permitted	0.950			0.950	0.445		0.950			0.950		
Satd. Flow (perm)	1408	1484	1262	1603	751	1489	1669	3343	1495	1444	2821	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			133			180		12	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			337			574			1022	
Travel Time (s)		12.7			7.7			11.2			19.9	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Adj. Flow (vph)	135	86	114	271	91	71	101	1072	201	16	544	82
Shared Lane Traffic (%)				34%								
Lane Group Flow (vph)	135	86	114	179	183	71	101	1072	201	16	626	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	7 4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	13.1	13.1	23.1	23.1	23.1	14.1	32.1	
Total Split (s)	27.0	27.0	27.0	29.1	29.1	29.1	41.1	69.1	69.1	17.1	45.1	
Total Split (%)	19.0%	19.0%	19.0%	20.4%	20.4%	20.4%	28.9%	48.6%	48.6%	12.0%	31.7%	
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0	24.0	36.0	64.0	64.0	12.0	40.0	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)					7.0	7.0					7.0	
Flash Dont Walk (s)					18.0	18.0					20.0	
Pedestrian Calls (#/hr)					1	1					1	
Act Effct Green (s)	13.3	24.2	24.2	14.3	14.3	25.2	10.3	38.4	38.4	9.4	27.4	
Actuated g/C Ratio	0.14	0.25	0.25	0.15	0.15	0.26	0.11	0.39	0.39	0.10	0.28	
v/c Ratio	0.70	0.23	0.28	0.76	0.76	0.15	0.57	0.81	0.29	0.12	0.78	
Control Delay	62.9	38.7	7.0	62.8	62.0	0.6	59.2	33.0	5.8	51.9	38.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.9	38.7	7.0	62.8	62.0	0.6	59.2	33.0	5.8	51.9	38.6	
LOS	E	D	A	E	E	A	E	C	A	D	D	
Approach Delay		37.7			52.3			31.0			38.9	
Approach LOS		D			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 142.3			
Actuated Cycle Length: 97.3			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 36.9		Intersection LOS: D	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

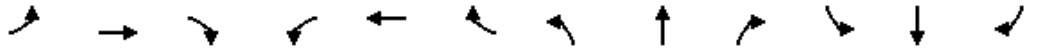
Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	74	98	241	81	63	91	965	181	12	397	60
Future Volume (vph)	116	74	98	241	81	63	91	965	181	12	397	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1484	1262	1603	1646	1489	1671	3343	1495	1444	2822	
Flt Permitted	0.95	1.00	1.00	0.95	0.45	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1484	1262	1603	751	1489	1671	3343	1495	1444	2822	
Peak-hour factor, PHF	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Adj. Flow (vph)	135	86	114	271	91	71	101	1072	201	16	544	82
RTOR Reduction (vph)	0	0	86	0	0	53	0	0	111	0	8	0
Lane Group Flow (vph)	135	86	28	179	183	18	101	1072	90	16	618	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	13.3	24.2	24.2	14.3	25.2	25.2	10.3	38.4	38.4	2.9	31.0	
Effective Green, g (s)	13.3	24.2	24.2	14.3	25.2	25.2	10.3	38.4	38.4	2.9	31.0	
Actuated g/C Ratio	0.13	0.24	0.24	0.14	0.25	0.25	0.10	0.38	0.38	0.03	0.31	
Clearance Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	187	358	305	229	316	374	171	1282	573	41	873	
v/s Ratio Prot	c0.10	0.06		c0.11	0.08		c0.06	c0.32		0.01	0.22	
v/s Ratio Perm			0.02		c0.06	0.01			0.06			
v/c Ratio	0.72	0.24	0.09	0.78	0.58	0.05	0.59	0.84	0.16	0.39	0.71	
Uniform Delay, d1	41.6	30.5	29.4	41.4	32.8	28.4	42.9	28.0	20.2	47.7	30.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.0	0.1	0.0	14.7	1.6	0.0	3.6	4.7	0.0	2.2	2.2	
Delay (s)	52.7	30.7	29.5	56.1	34.4	28.4	46.5	32.7	20.3	50.0	32.7	
Level of Service	D	C	C	E	C	C	D	C	C	D	C	
Approach Delay (s)		39.1			42.4			31.9			33.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	100.1	Sum of lost time (s)	20.3
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

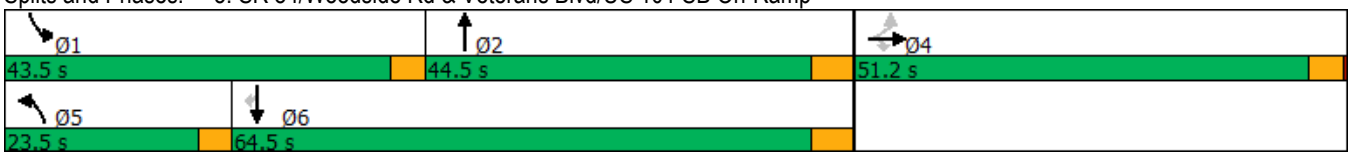


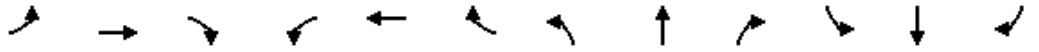
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	191	40	0	0	0	53	1632	0	102	1377	783
Future Volume (vph)	237	191	40	0	0	0	53	1632	0	102	1377	783
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	0		0	100		0	280		0
Storage Lanes	1		1	0		0	1		0	0		1
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor							1.00					0.99
Frt			0.850									0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1687	1776	1509	0	0	0	1719	3438	0	1671	3343	1495
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1687	1776	1509	0	0	0	1718	3438	0	1671	3343	1474
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67									541
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		319			289			263			261	
Travel Time (s)		7.3			6.6			5.1			5.1	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	5%	5%	5%	8%	8%	8%
Adj. Flow (vph)	266	215	45	0	0	0	58	1774	0	115	1547	880
Shared Lane Traffic (%)												
Lane Group Flow (vph)	266	215	45	0	0	0	58	1774	0	115	1547	880
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1				1	2		1	2	1
Detector Template	Left	Thru	Right				Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20				20	100		20	100	20
Trailing Detector (ft)	0	0	0				0	0		0	0	0
Detector 1 Position(ft)	0	0	0				0	0		0	0	0
Detector 1 Size(ft)	20	6	20				20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases		4					5	2		1	6	
Permitted Phases	4		4									6
Detector Phase	4	4	4				5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0				4.0	12.0		4.0	12.0	12.0
Minimum Split (s)	9.2	9.2	9.2				7.5	16.5		7.5	16.5	16.5
Total Split (s)	51.2	51.2	51.2				23.5	44.5		43.5	64.5	64.5
Total Split (%)	36.8%	36.8%	36.8%				16.9%	32.0%		31.3%	46.3%	46.3%
Maximum Green (s)	47.0	47.0	47.0				20.0	40.0		40.0	60.0	60.0
Yellow Time (s)	3.7	3.7	3.7				3.5	4.5		3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5				0.0	0.0		0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.2	4.2	4.2				3.5	4.5		3.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0				2.0	2.5		2.0	2.5	2.5
Recall Mode	None	None	None				None	Min		None	Min	Min
Act Effct Green (s)	19.1	19.1	19.1				7.8	55.3		11.3	60.8	60.8
Actuated g/C Ratio	0.19	0.19	0.19				0.08	0.56		0.12	0.62	0.62
v/c Ratio	0.81	0.62	0.13				0.42	0.92		0.60	0.75	0.79
Control Delay	57.5	44.9	4.5				55.3	30.0		56.0	18.6	12.6
Queue Delay	0.0	0.0	0.0				0.0	45.6		0.0	0.0	0.0
Total Delay	57.5	44.9	4.5				55.3	75.7		56.0	18.6	12.6
LOS	E	D	A				E	E		E	B	B
Approach Delay		47.8						75.0			18.2	
Approach LOS		D						E			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 98			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 42.6		Intersection LOS: D	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: SR 84/Woodside Rd & Veterans Blvd/US 101 SB On-Ramp





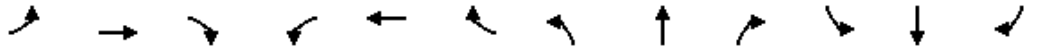
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	191	40	0	0	0	53	1632	0	102	1377	783
Future Volume (veh/h)	237	191	40	0	0	0	53	1632	0	102	1377	783
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1796	1796	1796				1826	1826	0	1781	1781	1781
Adj Flow Rate, veh/h	266	215	45				58	1774	0	115	1547	880
Peak Hour Factor	0.89	0.89	0.89				0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	7	7	7				5	5	0	8	8	8
Cap, veh/h	307	322	273				74	2072	0	145	2166	964
Arrive On Green	0.18	0.18	0.18				0.04	0.60	0.00	0.09	0.64	0.64
Sat Flow, veh/h	1711	1796	1522				1739	3561	0	1697	3385	1506
Grp Volume(v), veh/h	266	215	45				58	1774	0	115	1547	880
Grp Sat Flow(s),veh/h/ln	1711	1796	1522				1739	1735	0	1697	1692	1506
Q Serve(g_s), s	13.4	9.9	2.2				2.9	37.3	0.0	5.9	26.8	44.8
Cycle Q Clear(g_c), s	13.4	9.9	2.2				2.9	37.3	0.0	5.9	26.8	44.8
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	322	273				74	2072	0	145	2166	964
V/C Ratio(X)	0.87	0.67	0.16				0.78	0.86	0.00	0.79	0.71	0.91
Avail Cap(c_a), veh/h	909	955	809				393	2072	0	767	2297	1022
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	35.2	33.8	30.7				41.9	14.7	0.0	39.7	10.6	13.8
Incr Delay (d2), s/veh	2.9	0.9	0.1				6.6	3.7	0.0	3.7	0.9	11.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	4.3	0.0				1.4	13.4	0.0	2.5	8.5	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.1	34.7	30.8				48.5	18.4	0.0	43.4	11.5	25.4
LnGrp LOS	D	C	C				D	B	A	D	B	C
Approach Vol, veh/h		526						1832			2542	
Approach Delay, s/veh		36.1						19.4			17.7	
Approach LOS		D						B			B	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	11.1	57.3		20.1	7.3	61.1
Change Period (Y+Rc), s	3.5	4.5		* 4.2	3.5	4.5
Max Green Setting (Gmax), s	40.0	40.0		* 47	20.0	60.0
Max Q Clear Time (g_c+I1), s	7.9	39.3		15.4	4.9	46.8
Green Ext Time (p_c), s	0.1	0.6		0.5	0.0	9.8

Intersection Summary	
HCM 6th Ctrl Delay	20.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	230	58	110	207	601	57	1503	54	328	1000	89
Future Volume (vph)	249	230	58	110	207	601	57	1503	54	328	1000	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	110					0	275		0
Storage Lanes	1		1	1					0	1		0
Taper Length (ft)	40			50						25		
Lane Util. Factor	0.91	0.91	0.95	0.91	0.91	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.96	1.00							
Frt		0.976				0.850		0.995			0.988	
Flt Protected	0.950	0.990		0.950	0.997		0.950			0.950		
Satd. Flow (prot)	1610	3231	0	1564	3283	1538	1671	3326	0	1626	3213	0
Flt Permitted	0.950	0.990		0.950	0.997		0.950			0.950		
Satd. Flow (perm)	1610	3231	0	1505	3277	1538	1671	3326	0	1626	3213	0
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		11				386		2				
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		624			576			625			219	
Travel Time (s)		17.0			15.7			12.2			4.3	
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Adj. Flow (vph)	286	264	67	128	241	699	62	1634	59	360	1099	98
Shared Lane Traffic (%)	29%			10%								
Lane Group Flow (vph)	203	414	0	115	254	699	62	1693	0	360	1197	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



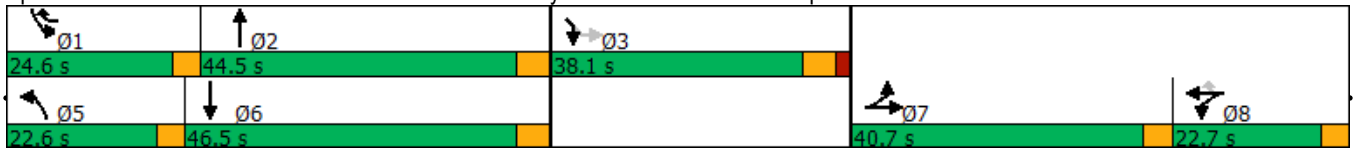
Lane Group	SEL	SER	SER2
Lane Configurations			
Traffic Volume (vph)	344	484	21
Future Volume (vph)	344	484	21
Ideal Flow (vphpl)	1900	1900	1900
Storage Length (ft)	250	0	
Storage Lanes	2	1	
Taper Length (ft)	100		
Lane Util. Factor	0.97	0.91	0.95
Ped Bike Factor			
Frt	0.940	0.850	
Flt Protected	0.971		
Satd. Flow (prot)	3204	1400	0
Flt Permitted	0.971		
Satd. Flow (perm)	3204	1400	0
Right Turn on Red			No
Satd. Flow (RTOR)			
Link Speed (mph)	30		
Link Distance (ft)	434		
Travel Time (s)	9.9		
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Peak Hour Factor	0.92	0.92	0.92
Heavy Vehicles (%)	5%	5%	5%
Adj. Flow (vph)	374	526	23
Shared Lane Traffic (%)		48%	
Lane Group Flow (vph)	626	297	0
Enter Blocked Intersection	No	No	No
Lane Alignment	Left	Right	Right
Median Width(ft)	24		
Link Offset(ft)	0		
Crosswalk Width(ft)	16		
Two way Left Turn Lane			
Headway Factor	1.00	1.00	1.00
Turning Speed (mph)	15	9	9
Number of Detectors	1	1	
Detector Template	Left	Right	
Leading Detector (ft)	20	20	
Trailing Detector (ft)	0	0	
Detector 1 Position(ft)	0	0	
Detector 1 Size(ft)	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	
Detector 1 Channel			
Detector 1 Extend (s)	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	
Detector 2 Position(ft)			
Detector 2 Size(ft)			
Detector 2 Type			
Detector 2 Channel			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Detector Phase	7	7		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	4.0	4.0	16.0		4.0	10.0	
Minimum Split (s)	40.7	40.7		11.7	11.7	7.6	7.6	29.5		7.6	14.5	
Total Split (s)	40.7	40.7		22.7	22.7	24.6	22.6	44.5		24.6	46.5	
Total Split (%)	23.9%	23.9%		13.3%	13.3%	14.4%	13.2%	26.1%		14.4%	27.3%	
Maximum Green (s)	37.0	37.0		19.0	19.0	21.0	19.0	40.0		21.0	42.0	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
All-Red Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.0		0.8	1.0	
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1		0.1	0.1	
Recall Mode	Max	Max		Max	Max	None	None	Max		None	Max	
Walk Time (s)	4.0	4.0						4.0				
Flash Dont Walk (s)	33.0	33.0						21.0				
Pedestrian Calls (#/hr)	49	49						0				
Act Effct Green (s)	37.0	37.0		19.0	19.0	43.7	9.8	40.0		21.0	51.2	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.26	0.06	0.23		0.12	0.30	
v/c Ratio	0.58	0.58		0.66	0.70	1.03	0.65	2.17		1.80	1.24	
Control Delay	67.5	62.1		91.4	83.9	68.2	107.8	558.5		417.1	165.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	1.0	
Total Delay	67.5	62.1		91.4	83.9	68.2	107.8	558.5		417.1	166.2	
LOS	E	E		F	F	E	F	F		F	F	
Approach Delay		63.9			74.4			542.6			224.2	
Approach LOS		E			E			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 170.6
Actuated Cycle Length: 170.6
Natural Cycle: 145
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 2.17
Intersection Signal Delay: 259.7 — Intersection LOS: F
Intersection Capacity Utilization 132.9% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 6: SR 84/Woodside Rd & Broadway St & US 101 SB Off-Ramp





Lane Group	SEL	SER	SER2
Detector 2 Extend (s)			
Turn Type	Perm	Prot	
Protected Phases		3	
Permitted Phases	3		
Detector Phase	3	3	
Switch Phase			
Minimum Initial (s)	8.0	8.0	
Minimum Split (s)	31.1	31.1	
Total Split (s)	38.1	38.1	
Total Split (%)	22.3%	22.3%	
Maximum Green (s)	32.0	32.0	
Yellow Time (s)	4.1	4.1	
All-Red Time (s)	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.1	6.1	
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	1.2	1.2	
Minimum Gap (s)	1.2	1.2	
Time Before Reduce (s)	0.8	0.8	
Time To Reduce (s)	0.1	0.1	
Recall Mode	None	None	
Walk Time (s)	4.0	4.0	
Flash Dont Walk (s)	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	
Act Effct Green (s)	32.0	32.0	
Actuated g/C Ratio	0.19	0.19	
v/c Ratio	1.04	1.13	
Control Delay	113.5	155.7	
Queue Delay	0.0	0.0	
Total Delay	113.5	155.7	
LOS	F	F	
Approach Delay	127.1		
Approach LOS	F		

Intersection Summary

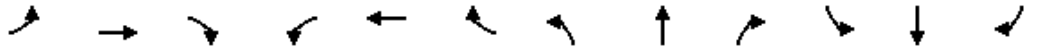
Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	230	58	110	207	601	57	1503	54	328	1000	89
Future Volume (vph)	249	230	58	110	207	601	57	1503	54	328	1000	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lane Util. Factor	0.91	0.91		0.91	0.91	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	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	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3230		1564	3285	1538	1671	3325		1626	3212	
Flt Permitted	0.95	0.99		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1610	3230		1564	3285	1538	1671	3325		1626	3212	
Peak-hour factor, PHF	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	286	264	67	128	241	699	62	1634	59	360	1099	98
RTOR Reduction (vph)	0	9	0	0	0	295	0	2	0	0	0	0
Lane Group Flow (vph)	203	405	0	115	254	404	62	1691	0	360	1197	0
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	37.0	37.0		19.0	19.0	40.0	9.8	40.0		21.0	51.2	
Effective Green, g (s)	37.0	37.0		19.0	19.0	40.0	9.8	40.0		21.0	51.2	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.23	0.06	0.23		0.12	0.30	
Clearance Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	349	700		174	365	360	95	779		200	963	
v/s Ratio Prot	c0.13	0.13		0.07	0.08	c0.14	0.04	c0.51		c0.22	0.37	
v/s Ratio Perm						0.12						
v/c Ratio	0.58	0.58		0.66	0.70	1.12	0.65	2.17		1.80	1.24	
Uniform Delay, d1	59.9	59.8		72.7	73.0	65.3	78.7	65.3		74.8	59.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.9	3.5		18.0	10.5	84.3	11.6	531.3		379.2	118.2	
Delay (s)	66.8	63.3		90.7	83.5	149.6	90.3	596.6		454.0	177.9	
Level of Service	E	E		F	F	F	F	F		F	F	
Approach Delay (s)		64.4			127.5			578.8			241.7	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	285.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.37		
Actuated Cycle Length (s)	170.6	Sum of lost time (s)	21.6
Intersection Capacity Utilization	132.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SEL	SER	SER2
Lane Configurations			
Traffic Volume (vph)	344	484	21
Future Volume (vph)	344	484	21
Ideal Flow (vphpl)	1900	1900	1900
Total Lost time (s)	6.1	6.1	
Lane Util. Factor	0.97	0.91	
Frpb, ped/bikes	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	
Frt	0.94	0.85	
Flt Protected	0.97	1.00	
Satd. Flow (prot)	3203	1400	
Flt Permitted	0.97	1.00	
Satd. Flow (perm)	3203	1400	
Peak-hour factor, PHF	0.92	0.92	0.92
Adj. Flow (vph)	374	526	23
RTOR Reduction (vph)	0	0	0
Lane Group Flow (vph)	626	297	0
Confl. Peds. (#/hr)			
Confl. Bikes (#/hr)			
Heavy Vehicles (%)	5%	5%	5%
Turn Type	Perm	Prot	
Protected Phases		3	
Permitted Phases	3		
Actuated Green, G (s)	32.0	32.0	
Effective Green, g (s)	32.0	32.0	
Actuated g/C Ratio	0.19	0.19	
Clearance Time (s)	6.1	6.1	
Vehicle Extension (s)	1.2	1.2	
Lane Grp Cap (vph)	600	262	
v/s Ratio Prot		c0.21	
v/s Ratio Perm	0.20		
v/c Ratio	1.04	1.13	
Uniform Delay, d1	69.3	69.3	
Progression Factor	1.00	1.00	
Incremental Delay, d2	48.5	96.5	
Delay (s)	117.8	165.8	
Level of Service	F	F	
Approach Delay (s)	133.2		
Approach LOS	F		

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	328	104	505	351	213	117	1681	460	217	1385	78
Future Volume (vph)	175	328	104	505	351	213	117	1681	460	217	1385	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.964				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3421	0	3400	1845	1568	1770	3539	1583	3273	3374	1509
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3421	0	3392	1845	1568	1770	3539	1583	3273	3374	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				40			34			59
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			693			790			776	
Travel Time (s)		19.2			15.8			15.4			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	7%	7%	7%
Adj. Flow (vph)	199	373	118	543	377	229	122	1751	479	249	1592	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	199	491	0	543	377	229	122	1751	479	249	1592	90
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	21.2	24.2		26.2	29.2	11.2	14.2	80.0	26.2	11.2	77.0	21.2
Total Split (%)	15.0%	17.1%		18.5%	20.6%	7.9%	10.0%	56.5%	18.5%	7.9%	54.4%	15.0%
Maximum Green (s)	18.0	20.0		23.0	25.0	8.0	11.0	75.0	23.0	8.0	72.0	18.0
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	17.0	22.1		23.1	28.2	40.5	10.7	72.3	100.4	8.0	69.7	91.7
Actuated g/C Ratio	0.12	0.16		0.16	0.20	0.29	0.08	0.51	0.71	0.06	0.49	0.65
v/c Ratio	0.93	0.88		0.98	1.02	0.48	0.92	0.97	0.42	1.35	0.96	0.09
Control Delay	106.7	73.5		91.8	108.4	38.6	123.1	47.9	9.4	234.0	48.4	4.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	106.7	73.5		91.8	108.4	38.6	123.1	47.9	9.4	234.0	48.4	4.2
LOS	F	E		F	F	D	F	D	A	F	D	A
Approach Delay		83.1			86.6			43.9			70.3	
Approach LOS		F			F			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 141.6			
Actuated Cycle Length: 141.2			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.35			
Intersection Signal Delay: 64.7		Intersection LOS: E	
Intersection Capacity Utilization 95.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	328	104	505	351	213	117	1681	460	217	1385	78
Future Volume (veh/h)	175	328	104	505	351	213	117	1681	460	217	1385	78
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1870	1870	1870	1796	1796	1796
Adj Flow Rate, veh/h	199	373	118	543	377	229	122	1751	479	249	1592	90
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	3	3	3	2	2	2	7	7	7
Cap, veh/h	222	383	119	566	344	381	141	1854	1089	191	1707	950
Arrive On Green	0.12	0.14	0.14	0.17	0.19	0.19	0.08	0.52	0.52	0.06	0.50	0.50
Sat Flow, veh/h	1795	2665	830	3428	1856	1567	1781	3554	1585	3319	3413	1522
Grp Volume(v), veh/h	199	249	242	543	377	229	122	1751	479	249	1592	90
Grp Sat Flow(s),veh/h/ln	1795	1791	1704	1714	1856	1567	1781	1777	1585	1659	1706	1522
Q Serve(g_s), s	15.2	19.2	19.8	21.9	25.8	18.0	9.4	64.7	18.9	8.0	60.9	3.3
Cycle Q Clear(g_c), s	15.2	19.2	19.8	21.9	25.8	18.0	9.4	64.7	18.9	8.0	60.9	3.3
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	222	257	245	566	344	381	141	1854	1089	191	1707	950
V/C Ratio(X)	0.90	0.97	0.99	0.96	1.10	0.60	0.87	0.94	0.44	1.31	0.93	0.09
Avail Cap(c_a), veh/h	232	257	245	566	344	381	141	1914	1116	191	1765	975
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.1	59.3	59.5	57.7	56.7	46.8	63.4	31.4	9.8	65.6	32.6	10.5
Incr Delay (d2), s/veh	31.1	46.5	54.5	27.5	77.2	1.9	38.4	10.0	0.1	170.2	9.2	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	8.9	12.1	12.2	11.7	19.4	7.3	5.8	29.2	6.4	7.9	26.4	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.2	105.8	114.0	85.2	133.9	48.7	101.8	41.4	9.9	235.9	41.8	10.5
LnGrp LOS	F	F	F	F	F	D	F	D	A	F	D	B
Approach Vol, veh/h		690			1149			2352			1931	
Approach Delay, s/veh		104.5			93.9			38.1			65.4	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	77.6	26.2	24.2	14.2	74.6	20.4	30.0
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	8.0	75.0	23.0	* 20	11.0	72.0	18.0	* 25
Max Q Clear Time (g_c+I1), s	10.0	66.7	23.9	21.8	11.4	62.9	17.2	27.8
Green Ext Time (p_c), s	0.0	6.0	0.0	0.0	0.0	5.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	64.6
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	9	9	171	7	15	12	4	314	12	8	0
Future Volume (vph)	0	9	9	171	7	15	12	4	314	12	8	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.989			0.872				
Flt Protected					0.958			0.998		0.950		
Satd. Flow (prot)	0	1671	0	0	1714	0	0	1575	0	1703	1792	0
Flt Permitted					0.958			0.998		0.950		
Satd. Flow (perm)	0	1671	0	0	1714	0	0	1575	0	1703	1792	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)									5	5		
Confl. Bikes (#/hr)			16			11			33			15
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Adj. Flow (vph)	0	11	11	192	8	17	14	5	357	14	9	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	0	217	0	0	376	0	14	9	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

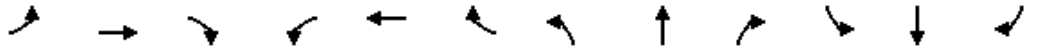
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	9	9	171	7	15	12	4	314	12	8	0
Future Vol, veh/h	0	9	9	171	7	15	12	4	314	12	8	0
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles, %	6	6	6	5	5	5	5	5	5	6	6	6
Mvmt Flow	0	11	11	192	8	17	14	5	357	14	9	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.1	10.2	10.4	8.7
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	89%	100%	0%
Vol Thru, %	1%	50%	4%	0%	100%
Vol Right, %	95%	50%	8%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	330	18	193	12	8
LT Vol	12	0	171	12	0
Through Vol	4	9	7	0	8
RT Vol	314	9	15	0	0
Lane Flow Rate	375	21	217	14	9
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.435	0.029	0.301	0.024	0.014
Departure Headway (Hd)	4.174	4.864	5.004	6.046	5.541
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	863	731	716	591	644
Service Time	2.201	2.925	3.052	3.793	3.288
HCM Lane V/C Ratio	0.435	0.029	0.303	0.024	0.014
HCM Control Delay	10.4	8.1	10.2	8.9	8.4
HCM Lane LOS	B	A	B	A	A
HCM 95th-tile Q	2.2	0.1	1.3	0.1	0



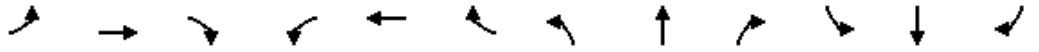
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	477	89	102	519	37	106	149	177	20	91	94
Future Volume (vph)	209	477	89	102	519	37	106	149	177	20	91	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98		0.97	0.97	0.97		1.00	0.97	
Frt		0.976				0.850		0.918			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3349	0	1719	3438	1538	1719	1607	0	1687	1599	0
Flt Permitted	0.950			0.950			0.573			0.352		
Satd. Flow (perm)	1731	3349	0	1685	3438	1498	1010	1607	0	623	1599	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				110		50			44	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1835			558			661	
Travel Time (s)		32.0			41.7			15.2			18.0	
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Peak Hour Factor	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	258	589	110	110	558	40	123	173	206	23	103	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	258	699	0	110	558	40	123	379	0	23	210	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	35.2	55.2		25.2	45.2	45.2	43.0	43.0		43.0	43.0	
Total Split (%)	28.5%	44.7%		20.4%	36.6%	36.6%	34.8%	34.8%		34.8%	34.8%	
Maximum Green (s)	30.0	50.0		20.0	40.0	40.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		24			3	3	51	51		51	51	
Act Effct Green (s)	18.7	32.5		12.1	20.8	20.8	29.4	29.4		29.4	29.4	
Actuated g/C Ratio	0.22	0.38		0.14	0.24	0.24	0.34	0.34		0.34	0.34	
v/c Ratio	0.69	0.55		0.45	0.67	0.09	0.36	0.65		0.11	0.37	
Control Delay	45.1	26.3		48.2	36.8	0.4	26.3	27.2		23.1	19.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.1	26.3		48.2	36.8	0.4	26.3	27.2		23.1	19.5	
LOS	D	C		D	D	A	C	C		C	B	
Approach Delay		31.3			36.5			27.0			19.8	
Approach LOS		C			D			C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 86.1			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 30.8		Intersection LOS: C	
Intersection Capacity Utilization 83.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	477	89	102	519	37	106	149	177	20	91	94
Future Volume (vph)	209	477	89	102	519	37	106	149	177	20	91	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	0.97		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3359		1719	3438	1501	1686	1613		1683	1607	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.57	1.00		0.35	1.00	
Satd. Flow (perm)	1736	3359		1719	3438	1501	1018	1613		624	1607	
Peak-hour factor, PHF	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Adj. Flow (vph)	258	589	110	110	558	40	123	173	206	23	103	107
RTOR Reduction (vph)	0	13	0	0	0	29	0	33	0	0	29	0
Lane Group Flow (vph)	258	686	0	110	558	11	123	346	0	23	181	0
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	18.7	32.5		8.9	22.7	22.7	29.5	29.5		29.5	29.5	
Effective Green, g (s)	18.7	32.5		8.9	22.7	22.7	29.5	29.5		29.5	29.5	
Actuated g/C Ratio	0.22	0.38		0.10	0.26	0.26	0.34	0.34		0.34	0.34	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	376	1264		177	904	394	347	551		213	549	
v/s Ratio Prot	c0.15	0.20		0.06	c0.16			c0.21			0.11	
v/s Ratio Perm						0.01	0.12			0.04		
v/c Ratio	0.69	0.54		0.62	0.62	0.03	0.35	0.63		0.11	0.33	
Uniform Delay, d1	31.1	21.1		37.1	28.0	23.6	21.3	23.8		19.4	21.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.1	0.3		4.8	0.9	0.0	0.5	1.9		0.2	0.3	
Delay (s)	35.2	21.3		41.9	28.9	23.6	21.7	25.7		19.6	21.3	
Level of Service	D	C		D	C	C	C	C		B	C	
Approach Delay (s)		25.1			30.6			24.8			21.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	86.3	Sum of lost time (s)	15.4
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

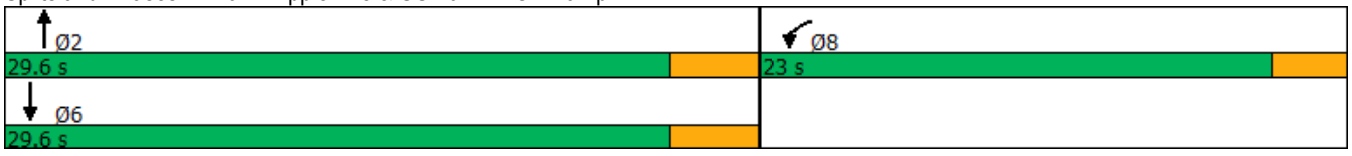


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1049	97	140	0	0	305
Future Volume (vph)	1049	97	140	0	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.987					
Flt Protected	0.956					
Satd. Flow (prot)	3344	0	1881	0	0	3539
Flt Permitted	0.956					
Satd. Flow (perm)	3344	0	1881	0	0	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	22					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.85	0.85	0.89	0.89	0.94	0.94
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Adj. Flow (vph)	1234	114	157	0	0	324
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1348	0	157	0	0	324
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	23.0		29.6			29.6
Total Split (%)	43.7%		56.3%			56.3%
Maximum Green (s)	20.0		26.0			26.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			7			
Act Effct Green (s)	20.1		7.5			7.5
Actuated g/C Ratio	0.59		0.22			0.22
v/c Ratio	0.68		0.38			0.42
Control Delay	8.9		13.7			12.8
Queue Delay	0.0		0.0			0.0
Total Delay	8.9		13.7			12.8
LOS	A		B			B
Approach Delay	8.9		13.7			12.8
Approach LOS	A		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 34.3			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 10.0		Intersection LOS: B	
Intersection Capacity Utilization 100.3%		ICU Level of Service G	
Analysis Period (min) 15			

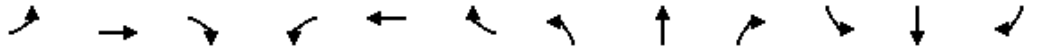
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1049	97	140	0	0	305
Future Volume (vph)	1049	97	140	0	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3346		1881			3539
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3346		1881			3539
Peak-hour factor, PHF	0.85	0.85	0.89	0.89	0.94	0.94
Adj. Flow (vph)	1234	114	157	0	0	324
RTOR Reduction (vph)	9	0	0	0	0	0
Lane Group Flow (vph)	1339	0	157	0	0	324
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	20.1		7.5			7.5
Effective Green, g (s)	20.1		7.5			7.5
Actuated g/C Ratio	0.59		0.22			0.22
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1966		412			776
v/s Ratio Prot	c0.40		0.08			c0.09
v/s Ratio Perm						
v/c Ratio	0.68		0.38			0.42
Uniform Delay, d1	4.8		11.4			11.5
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.8		0.2			0.1
Delay (s)	5.6		11.6			11.6
Level of Service	A		B			B
Approach Delay (s)	5.6		11.6			11.6
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	34.2	Sum of lost time (s)	6.6
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

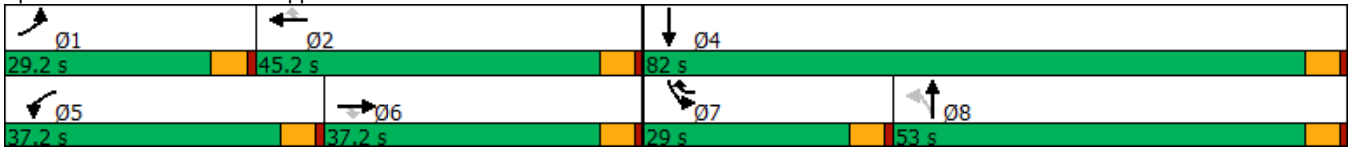


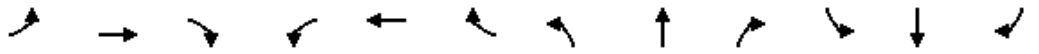
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	1067	209	113	13	732	23	1212	121	291	882	15
Future Volume (vph)	103	1067	209	113	13	732	23	1212	121	291	882	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor			0.95	0.99				1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.998	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3433	5085	1583	3400	1845	3575	0	4957	0	1719	3428	0
Flt Permitted	0.950			0.950				0.897		0.950		
Satd. Flow (perm)	3433	5085	1503	3354	1845	3575	0	4450	0	1718	3428	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			121					11			1	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)			28	28			20		4	4		20
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	5%	5%	5%
Adj. Flow (vph)	111	1147	225	127	15	822	25	1317	132	338	1026	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	1147	225	127	15	822	0	1474	0	338	1043	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	29.2	37.2	37.2	37.2	45.2	29.0	53.0	53.0		29.0	82.0	
Total Split (%)	18.7%	23.8%	23.8%	23.8%	28.9%	18.5%	33.9%	33.9%		18.5%	52.4%	
Maximum Green (s)	24.0	32.0	32.0	32.0	40.0	24.0	48.0	48.0		24.0	77.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		28	28				4	4			20	
Act Effct Green (s)	9.6	32.6	32.6	11.3	34.2	63.4		48.0		24.0	77.0	
Actuated g/C Ratio	0.07	0.24	0.24	0.08	0.25	0.47		0.35		0.18	0.56	
v/c Ratio	0.46	0.94	0.50	0.45	0.03	0.49		0.94		1.12	0.54	
Control Delay	67.1	66.3	24.3	65.1	39.3	26.6		54.4		137.8	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	67.1	66.3	24.3	65.1	39.3	26.6		54.4		137.8	19.9	
LOS	E	E	C	E	D	C		D		F	B	
Approach Delay		60.0			31.9			54.4			48.7	
Approach LOS		E			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 136.3			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.12			
Intersection Signal Delay: 50.4		Intersection LOS: D	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





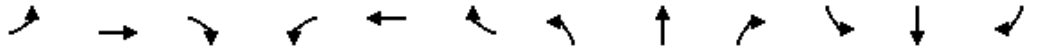
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	1067	209	113	13	732	23	1212	121	291	882	15
Future Volume (veh/h)	103	1067	209	113	13	732	23	1212	121	291	882	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.95	1.00		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	111	1147	225	127	15	822	25	1317	132	338	1026	17
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	5	5	5
Cap, veh/h	233	1234	370	284	478	1527	45	1476	147	318	1948	32
Arrive On Green	0.07	0.24	0.24	0.08	0.26	0.26	0.34	0.34	0.34	0.18	0.56	0.56
Sat Flow, veh/h	3456	5106	1530	3428	1856	3390	48	4373	435	1739	3491	58
Grp Volume(v), veh/h	111	1147	225	127	15	822	528	466	480	338	510	533
Grp Sat Flow(s),veh/h/ln	1728	1702	1530	1714	1856	1130	1737	1537	1582	1739	1735	1814
Q Serve(g_s), s	4.1	28.9	17.2	4.6	0.8	23.6	20.2	37.9	37.9	24.0	24.2	24.2
Cycle Q Clear(g_c), s	4.1	28.9	17.2	4.6	0.8	23.6	37.6	37.9	37.9	24.0	24.2	24.2
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.28	1.00		0.03
Lane Grp Cap(c), veh/h	233	1234	370	284	478	1527	615	519	534	318	968	1012
V/C Ratio(X)	0.48	0.93	0.61	0.45	0.03	0.54	0.86	0.90	0.90	1.06	0.53	0.53
Avail Cap(c_a), veh/h	631	1243	373	835	565	1687	661	561	578	318	1016	1063
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.1	48.7	44.3	57.4	36.5	27.2	40.8	41.4	41.4	53.7	18.2	18.2
Incr Delay (d2), s/veh	0.6	11.9	2.0	0.4	0.0	0.1	9.7	15.7	15.4	68.5	0.2	0.2
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	1.8	13.6	6.7	2.0	0.4	6.4	17.9	16.7	17.1	16.5	9.6	10.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.6	60.7	46.3	57.8	36.5	27.3	50.5	57.1	56.8	122.3	18.3	18.3
LnGrp LOS	E	E	D	E	D	C	D	E	E	F	B	B
Approach Vol, veh/h		1483			964			1474			1381	
Approach Delay, s/veh		58.4			31.5			54.6			43.8	
Approach LOS		E			C			D			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.0	39.0		78.4	16.1	37.0	29.0	49.4				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	24.0	40.0		77.0	32.0	32.0	24.0	48.0				
Max Q Clear Time (g_c+I1), s	6.1	25.6		26.2	6.6	30.9	26.0	39.9				
Green Ext Time (p_c), s	0.2	2.2		5.1	0.2	0.7	0.0	4.5				

Intersection Summary												
HCM 6th Ctrl Delay			48.7									
HCM 6th LOS			D									

Notes

User approved pedestrian interval to be less than phase max green.

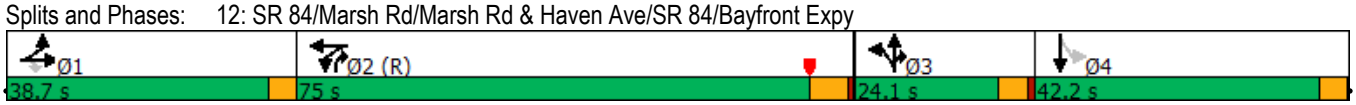


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	85	223	1933	145	10	170	26	1075	6	15	7
Future Volume (vph)	4	85	223	1933	145	10	170	26	1075	6	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00						0.99	
Frt			0.850		0.990				0.850		0.962	
Flt Protected		0.998		0.950				0.959			0.989	
Satd. Flow (prot)	0	3567	1599	4942	1820	0	0	1769	3575	0	3416	0
Flt Permitted		0.998		0.950				0.959			0.877	
Satd. Flow (perm)	0	3562	1577	4929	1820	0	0	1769	3575	0	3020	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			269		2						10	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	5	102	269	2148	161	11	193	30	1222	9	21	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	269	2148	172	0	0	223	1222	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	38.7	38.7	38.7	75.0	75.0		24.1	24.1		42.2	42.2	
Total Split (%)	21.5%	21.5%	21.5%	41.7%	41.7%		13.4%	13.4%		23.4%	23.4%	
Maximum Green (s)	35.0	35.0	35.0	68.8	68.8		19.0	19.0		38.0	38.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	8	8					12	12	
Act Effct Green (s)		13.1	13.1	111.2	111.2			19.0	135.3		20.6	
Actuated g/C Ratio		0.07	0.07	0.62	0.62			0.11	0.75		0.11	
v/c Ratio		0.41	0.74	0.70	0.15			1.20	0.45		0.11	
Control Delay		82.5	19.8	28.5	19.5			187.5	14.3		51.7	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.0		0.0	
Total Delay		82.5	19.8	28.5	19.5			187.5	14.3		51.7	
LOS		F	B	C	B			F	B		D	
Approach Delay		37.6			27.8			41.0			51.7	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 180			
Actuated Cycle Length: 180			
Offset: 81 (45%), Referenced to phase 2:WBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 33.5		Intersection LOS: C	
Intersection Capacity Utilization 72.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	85	223	1933	145	10	170	26	1075	6	15	7
Future Volume (vph)	4	85	223	1933	145	10	170	26	1075	6	15	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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	0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00		0.99	
Satd. Flow (prot)		3566	1577	4942	1820			1768	3575		3405	
Flt Permitted		1.00	1.00	0.95	1.00			0.96	1.00		0.88	
Satd. Flow (perm)		3566	1577	4942	1820			1768	3575		3019	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Adj. Flow (vph)	5	102	269	2148	161	11	193	30	1222	9	21	10
RTOR Reduction (vph)	0	0	249	0	1	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	107	20	2148	171	0	0	223	1222	0	31	0
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		13.1	13.1	110.3	110.3			19.0	135.5		18.4	
Effective Green, g (s)		13.1	13.1	110.3	110.3			19.0	135.5		18.4	
Actuated g/C Ratio		0.07	0.07	0.61	0.61			0.11	0.75		0.10	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		259	114	3028	1115			186	2691		308	
v/s Ratio Prot		c0.03		c0.43	0.09			c0.13	0.34			
v/s Ratio Perm			0.01								c0.01	
v/c Ratio		0.41	0.17	0.71	0.15			1.20	0.45		0.10	
Uniform Delay, d1		79.8	78.4	23.9	14.9			80.5	8.4		73.3	
Progression Factor		1.00	1.00	1.00	1.00			1.02	1.14		1.00	
Incremental Delay, d2		0.4	0.3	1.4	0.3			123.3	0.0		0.1	
Delay (s)		80.2	78.6	25.3	15.2			205.1	9.5		73.3	
Level of Service		F	E	C	B			F	A		E	
Approach Delay (s)		79.1			24.6			39.7			73.3	
Approach LOS		E			C			D			E	

Intersection Summary			
HCM 2000 Control Delay	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

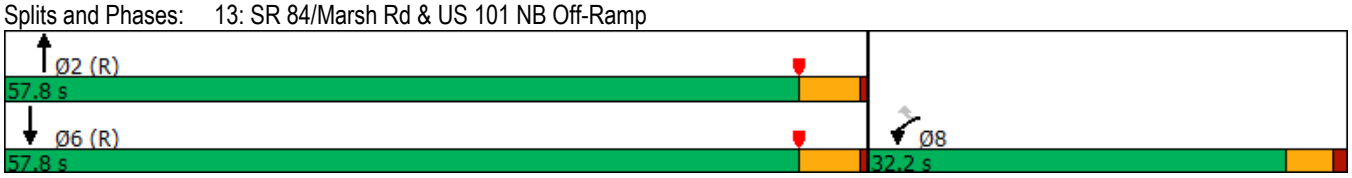


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	734	393	1301	0	0	710
Future Volume (vph)	734	393	1301	0	0	710
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		71				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	765	409	1446	0	0	747
Shared Lane Traffic (%)						
Lane Group Flow (vph)	765	409	1446	0	0	747
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	32.2	32.2	57.8			57.8
Total Split (%)	35.8%	35.8%	64.2%			64.2%
Maximum Green (s)	28.0	28.0	53.2			53.2
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	23.8	23.8	57.4			57.4
Actuated g/C Ratio	0.26	0.26	0.64			0.64
v/c Ratio	0.87	0.53	0.65			0.33
Control Delay	42.7	25.3	6.6			8.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	42.7	25.3	6.6			8.0
LOS	D	C	A			A
Approach Delay	36.6		6.6			8.0
Approach LOS	D		A			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 66 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 99.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	734	393	1301	0	0	710
Future Volume (veh/h)	734	393	1301	0	0	710
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	765	409	1446	0	0	747
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	847	683	2296	0	0	2296
Arrive On Green	0.25	0.25	0.65	0.00	0.00	0.65
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	765	409	1446	0	0	747
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	19.8	11.9	21.8	0.0	0.0	8.4
Cycle Q Clear(g_c), s	19.8	11.9	21.8	0.0	0.0	8.4
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	847	683	2296	0	0	2296
V/C Ratio(X)	0.90	0.60	0.63	0.00	0.00	0.33
Avail Cap(c_a), veh/h	1050	847	2296	0	0	2296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	32.7	29.7	9.3	0.0	0.0	6.9
Incr Delay (d2), s/veh	8.4	0.3	1.3	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	3.8	7.3	0.0	0.0	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	41.0	30.0	10.6	0.0	0.0	7.3
LnGrp LOS	D	C	B	A	A	A
Approach Vol, veh/h	1174		1446			747
Approach Delay, s/veh	37.2		10.6			7.3
Approach LOS	D		B			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		63.2			63.2	26.8
Change Period (Y+Rc), s		4.6			4.6	4.2
Max Green Setting (Gmax), s		53.2			53.2	28.0
Max Q Clear Time (g_c+I1), s		23.8			10.4	21.8
Green Ext Time (p_c), s		8.7			3.6	0.8

Intersection Summary	
HCM 6th Ctrl Delay	19.1
HCM 6th LOS	B

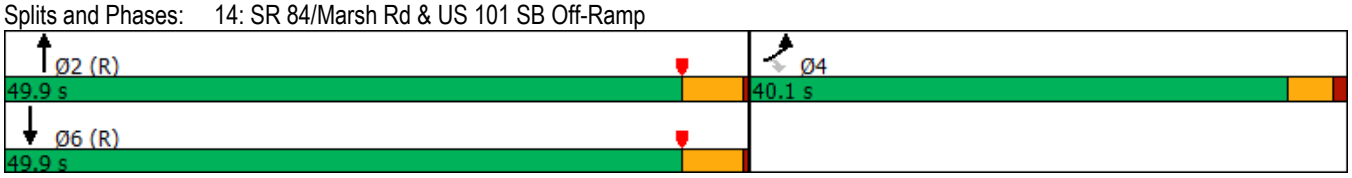


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	939	464	0	743	1324	0
Future Volume (vph)	939	464	0	743	1324	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		21				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	958	473	0	774	1455	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	958	473	0	774	1455	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	40.1	40.1		49.9	49.9	
Total Split (%)	44.6%	44.6%		55.4%	55.4%	
Maximum Green (s)	36.0	36.0		45.3	45.3	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	30.6	30.6		50.7	50.7	
Actuated g/C Ratio	0.34	0.34		0.56	0.56	
v/c Ratio	0.85	0.88		0.38	0.74	
Control Delay	34.9	45.3		12.4	24.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	34.9	45.3		12.4	24.6	
LOS	C	D		B	C	
Approach Delay	38.3			12.4	24.6	
Approach LOS	D			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 72 (80%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 27.4		Intersection LOS: C	
Intersection Capacity Utilization 96.5%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	939	464	0	743	1324	0
Future Volume (veh/h)	939	464	0	743	1324	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	958	473	0	774	1455	0
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1108	508	0	2059	2026	0
Arrive On Green	0.33	0.33	0.00	0.57	0.57	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	958	473	0	774	1455	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	24.0	26.6	0.0	10.5	26.9	0.0
Cycle Q Clear(g_c), s	24.0	26.6	0.0	10.5	26.9	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1108	508	0	2059	2026	0
V/C Ratio(X)	0.86	0.93	0.00	0.38	0.72	0.00
Avail Cap(c_a), veh/h	1349	619	0	2059	2026	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.3	29.2	0.0	10.4	13.9	0.0
Incr Delay (d2), s/veh	4.5	17.3	0.0	0.5	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.0	11.9	0.0	3.9	9.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	32.8	46.5	0.0	10.9	16.1	0.0
LnGrp LOS	C	D	A	B	B	A
Approach Vol, veh/h	1431			774	1455	
Approach Delay, s/veh	37.3			10.9	16.1	
Approach LOS	D			B	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		56.3		33.7		56.3
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		45.3		36.0		45.3
Max Q Clear Time (g_c+I1), s		12.5		28.6		28.9
Green Ext Time (p_c), s		2.0		1.0		4.2

Intersection Summary		
HCM 6th Ctrl Delay	23.3	
HCM 6th LOS	C	

Existing Full Project PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	278	233	10	371	135
Future Volume (vph)	4	278	233	10	371	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.867					0.850
Flt Protected				0.954	0.950	
Satd. Flow (prot)	1584	0	0	1795	1736	1553
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	1584	0	0	1795	1736	1553
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles (%)	4%	4%	1%	1%	4%	4%
Adj. Flow (vph)	5	316	333	14	675	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	321	0	0	347	675	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	88.6
Intersection LOS	F

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	278	233	10	371	135
Future Vol, veh/h	4	278	233	10	371	135
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles, %	4	4	1	1	4	4
Mvmt Flow	5	316	333	14	675	245
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	16.7	21.6	139
HCM LOS	C	C	F

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	96%
Vol Thru, %	0%	0%	1%	4%
Vol Right, %	0%	100%	99%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	371	135	282	243
LT Vol	371	0	0	233
Through Vol	0	0	4	10
RT Vol	0	135	278	0
Lane Flow Rate	675	245	320	347
Geometry Grp	5	5	2	2
Degree of Util (X)	1.335	0.402	0.528	0.63
Departure Headway (Hd)	7.123	5.902	6.566	7.18
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	513	614	554	507
Service Time	4.823	3.602	4.566	5.18
HCM Lane V/C Ratio	1.316	0.399	0.578	0.684
HCM Control Delay	185	12.5	16.7	21.6
HCM Lane LOS	F	B	C	C
HCM 95th-tile Q	29.7	1.9	3.1	4.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	3	506	511	2
Future Volume (vph)	0	0	3	506	511	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1736	3471	3536	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1736	3471	3536	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.56	0.56	0.74	0.74
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Adj. Flow (vph)	0	0	5	904	691	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	5	904	694	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	3	506	511	2
Future Vol, veh/h	0	0	3	506	511	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	56	56	74	74
Heavy Vehicles, %	2	2	4	4	2	2
Mvmt Flow	0	0	5	904	691	3

Major/Minor	Minor2		Major2	
Conflicting Flow All	693	693	-	0
Stage 1	693	693	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.88	6.58	-	-
Critical Hdwy Stg 1	5.88	5.58	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.54	4.04	-	-
Pot Cap-1 Maneuver	373	~ 361	-	-
Stage 1	452	~ 438	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	373	0	-	-
Mov Cap-2 Maneuver	373	0	-	-
Stage 1	452	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	373	-	-	-	-
HCM Lane V/C Ratio	0.014	-	-	-	-
HCM Control Delay (s)	14.8	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	183	346	33	99	0
Future Volume (vph)	0	183	346	33	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			485	412	
Travel Time (s)	10.1			11.0	9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	199	376	36	108	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	199	0	376	36	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	183	346	33	99	0
Future Vol, veh/h	0	183	346	33	99	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	199	376	36	108	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.4	15.3	9
HCM LOS	A	C	A

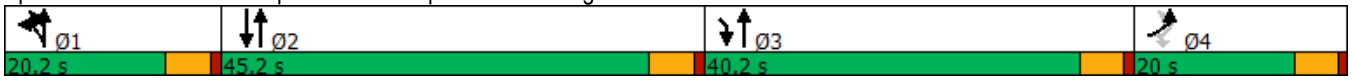
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	346	33	183	99
LT Vol	346	0	0	0
Through Vol	0	33	0	99
RT Vol	0	0	183	0
Lane Flow Rate	376	36	199	108
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.585	0.051	0.259	0.151
Departure Headway (Hd)	5.595	5.092	4.686	5.038
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	643	698	764	705
Service Time	3.361	2.858	2.731	3.116
HCM Lane V/C Ratio	0.585	0.052	0.26	0.153
HCM Control Delay	16	8.1	9.4	9
HCM Lane LOS	C	A	A	A
HCM 95th-tile Q	3.8	0.2	1	0.5

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	46	27	13	509	511	0	0	47	2
Future Volume (vph)	1	0	46	27	13	509	511	0	0	47	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	60		265			0	0	0	
Storage Lanes		1	1		1			0	0	1	
Taper Length (ft)		25			50				25		
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.865	
Flt Protected		0.950			0.950						
Satd. Flow (prot)	0	1736	1553	0	1671	3343	3539	0	0	1522	0
Flt Permitted		0.950			0.950						
Satd. Flow (perm)	0	1736	1553	0	1671	3343	3539	0	0	1522	0
Right Turn on Red			Yes								No
Satd. Flow (RTOR)			109								
Link Speed (mph)		30				35	35		30		
Link Distance (ft)		369				675	1774		538		
Travel Time (s)		8.4				13.1	34.6		12.2		
Peak Hour Factor	0.78	0.78	0.78	0.71	0.71	0.71	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	2%	2%	8%	8%	8%
Adj. Flow (vph)	1	0	59	38	18	717	681	0	0	57	2
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1	59	0	56	717	681	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)		12				12	12		0		
Link Offset(ft)		0				0	0		0		
Crosswalk Width(ft)		16				16	16		16		
Two way Left Turn Lane											
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	1	2	2			1	
Detector Template	Left	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel											
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)						94	94				
Detector 2 Size(ft)						6	6				
Detector 2 Type						Cl+Ex	Cl+Ex				
Detector 2 Channel											
Detector 2 Extend (s)						0.0	0.0				
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Permitted Phases	4		4								
Detector Phase	4	4	4	1	1	2	2			3	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	20.0	20.0	20.0	20.2	20.2		45.2			40.2	
Total Split (%)	15.9%	15.9%	15.9%	16.1%	16.1%		36.0%			32.0%	
Maximum Green (s)	15.0	15.0	15.0	15.0	15.0		40.0			35.0	
Yellow Time (s)	4.0	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0	24.0								
Pedestrian Calls (#/hr)	0	0	0								
Act Effct Green (s)		11.6	11.6		11.2	62.3	39.9			12.3	
Actuated g/C Ratio		0.15	0.15		0.15	0.81	0.52			0.16	
v/c Ratio		0.00	0.18		0.23	0.26	0.37			0.24	
Control Delay		38.0	2.5		39.1	2.9	18.2			38.7	
Queue Delay		0.0	0.0		0.0	0.0	0.0			0.0	
Total Delay		38.0	2.5		39.1	2.9	18.2			38.7	
LOS		D	A		D	A	B			D	
Approach Delay		3.1				5.5	18.2		38.7		
Approach LOS		A				A	B		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 76.6			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 12.2		Intersection LOS: B	
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	46	27	13	509	511	0	0	47	2
Future Volume (vph)	1	0	46	27	13	509	511	0	0	47	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00	1.00		1.00	0.95	0.95			1.00	
Frt		1.00	0.85		1.00	1.00	1.00			0.86	
Flt Protected		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1736	1553		1671	3343	3539			1522	
Flt Permitted		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1736	1553		1671	3343	3539			1522	
Peak-hour factor, PHF	0.78	0.78	0.78	0.71	0.71	0.71	0.75	0.75	0.82	0.82	0.82
Adj. Flow (vph)	1	0	59	38	18	717	681	0	0	57	2
RTOR Reduction (vph)	0	0	54	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	5	0	56	717	681	0	0	59	0
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	2%	2%	8%	8%	8%
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	
Permitted Phases	4		4								
Actuated Green, G (s)		7.1	7.1		7.2	62.9	37.5			7.8	
Effective Green, g (s)		7.1	7.1		7.2	62.9	37.5			7.8	
Actuated g/C Ratio		0.09	0.09		0.09	0.78	0.47			0.10	
Clearance Time (s)		5.0	5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0	3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		153	137		150	2621	1654			148	
v/s Ratio Prot					0.03	c0.21	c0.19			c0.04	
v/s Ratio Perm		0.00	c0.00								
v/c Ratio		0.01	0.04		0.37	0.27	0.41			0.40	
Uniform Delay, d1		33.3	33.4		34.4	2.4	14.1			34.0	
Progression Factor		1.00	1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.0	0.1		2.1	0.1	0.2			2.4	
Delay (s)		33.4	33.5		36.5	2.5	14.3			36.4	
Level of Service		C	C		D	A	B			D	
Approach Delay (s)		33.5				4.9	14.3		36.4		
Approach LOS		C				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	80.2	Sum of lost time (s)	20.6
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	454	89	541	601	4
Future Volume (vph)	8	454	89	541	601	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.855	0.850			0.999	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1589	1504	1687	3374	3535	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1589	1504	1687	3374	3535	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	274	286			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.81	0.81	0.71	0.71	0.74	0.74
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%
Adj. Flow (vph)	10	560	125	762	812	5
Shared Lane Traffic (%)		49%				
Lane Group Flow (vph)	284	286	125	762	817	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	25.0	25.0	37.2	74.4	37.2	
Total Split (%)	25.2%	25.2%	37.4%	74.8%	37.4%	
Maximum Green (s)	20.0	20.0	32.0	69.2	32.0	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	11.2	11.2	11.7	32.9	20.6	
Actuated g/C Ratio	0.20	0.20	0.21	0.60	0.37	
v/c Ratio	0.52	0.54	0.35	0.38	0.62	
Control Delay	8.3	8.0	25.5	5.7	17.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	8.3	8.0	25.5	5.7	17.3	
LOS	A	A	C	A	B	
Approach Delay	8.1			8.5	17.3	
Approach LOS	A			A	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 55			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 11.6		Intersection LOS: B	
Intersection Capacity Utilization 47.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	454	89	541	601	4
Future Volume (vph)	8	454	89	541	601	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.86	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1590	1504	1687	3374	3536	
Flt Permitted	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1590	1504	1687	3374	3536	
Peak-hour factor, PHF	0.81	0.81	0.71	0.71	0.74	0.74
Adj. Flow (vph)	10	560	125	762	812	5
RTOR Reduction (vph)	219	228	0	0	1	0
Lane Group Flow (vph)	65	58	125	762	816	0
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	11.2	11.2	8.5	34.3	20.6	
Effective Green, g (s)	11.2	11.2	8.5	34.3	20.6	
Actuated g/C Ratio	0.20	0.20	0.15	0.62	0.37	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	319	302	257	2077	1307	
v/s Ratio Prot	c0.04		c0.07	0.23	c0.23	
v/s Ratio Perm		0.04				
v/c Ratio	0.20	0.19	0.49	0.37	0.62	
Uniform Delay, d1	18.5	18.5	21.6	5.3	14.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.2	1.5	0.1	0.9	
Delay (s)	18.8	18.7	23.1	5.4	15.3	
Level of Service	B	B	C	A	B	
Approach Delay (s)	18.7			7.9	15.3	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	15.4
Intersection Capacity Utilization	47.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

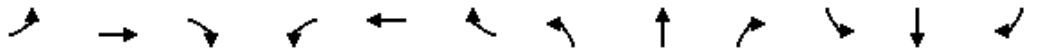
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	132	87	164	61	12	38	530	249	87	882	86
Future Volume (vph)	88	132	87	164	61	12	38	530	249	87	882	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	75		50	200		250	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99					0.98					1.00	
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950	0.977		0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	1665	1712	1568	1687	3374	1509	1770	3486	0
Flt Permitted	0.950			0.950	0.555		0.950			0.950		
Satd. Flow (perm)	1724	1827	1553	1665	973	1537	1687	3374	1509	1770	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			98			307		9	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			337			574			1022	
Travel Time (s)		12.7			7.7			11.2			19.9	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Adj. Flow (vph)	113	169	112	191	71	14	47	654	307	98	991	97
Shared Lane Traffic (%)				32%								
Lane Group Flow (vph)	113	169	112	130	132	14	47	654	307	98	1088	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	7 4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	15.0	15.0	13.1	13.1	13.1	13.1	13.1	13.1	14.1	32.1	
Total Split (s)	27.0	27.0	27.0	29.1	29.1	29.1	21.1	55.1	55.1	25.1	59.1	
Total Split (%)	19.8%	19.8%	19.8%	21.3%	21.3%	21.3%	15.5%	40.4%	40.4%	18.4%	43.4%	
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0	24.0	16.0	50.0	50.0	20.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)					7.0	7.0					7.0	
Flash Dont Walk (s)					18.0	18.0					20.0	
Pedestrian Calls (#/hr)					5	5					0	
Act Effct Green (s)	10.9	24.5	24.5	11.4	11.4	25.0	8.5	30.6	30.6	10.4	32.2	
Actuated g/C Ratio	0.12	0.26	0.26	0.12	0.12	0.27	0.09	0.33	0.33	0.11	0.34	
v/c Ratio	0.56	0.36	0.23	0.64	0.63	0.03	0.31	0.60	0.44	0.50	0.91	
Control Delay	54.5	36.3	8.7	57.6	56.6	0.1	51.6	29.5	5.1	53.5	40.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	54.5	36.3	8.7	57.6	56.6	0.1	51.6	29.5	5.1	53.5	40.8	
LOS	D	D	A	E	E	A	D	C	A	D	D	
Approach Delay		33.7			54.2			23.1			41.9	
Approach LOS		C			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 136.3			
Actuated Cycle Length: 94			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 35.3		Intersection LOS: D	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd

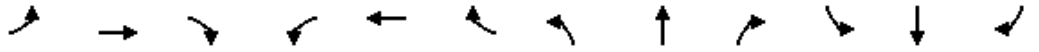




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	132	87	164	61	12	38	530	249	87	882	86
Future Volume (vph)	88	132	87	164	61	12	38	530	249	87	882	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	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	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1665	1713	1540	1687	3374	1509	1770	3485	
Flt Permitted	0.95	1.00	1.00	0.95	0.56	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1827	1553	1665	973	1540	1687	3374	1509	1770	3485	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Adj. Flow (vph)	113	169	112	191	71	14	47	654	307	98	991	97
RTOR Reduction (vph)	0	0	83	0	0	10	0	0	208	0	6	0
Lane Group Flow (vph)	113	169	29	130	132	4	47	654	99	98	1082	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	10.9	24.5	24.5	11.4	25.0	25.0	6.3	30.6	30.6	7.9	32.2	
Effective Green, g (s)	10.9	24.5	24.5	11.4	25.0	25.0	6.3	30.6	30.6	7.9	32.2	
Actuated g/C Ratio	0.12	0.26	0.26	0.12	0.26	0.26	0.07	0.32	0.32	0.08	0.34	
Clearance Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	199	472	401	200	345	406	112	1090	487	147	1184	
v/s Ratio Prot	c0.07	0.09		c0.08	0.05		0.03	0.19		c0.06	c0.31	
v/s Ratio Perm			0.02		c0.05	0.00			0.07			
v/c Ratio	0.57	0.36	0.07	0.65	0.38	0.01	0.42	0.60	0.20	0.67	0.91	
Uniform Delay, d1	39.7	28.7	26.5	39.7	28.5	25.7	42.4	26.9	23.2	42.1	29.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	0.2	0.0	5.6	0.3	0.0	0.9	0.6	0.1	8.5	10.6	
Delay (s)	41.9	28.8	26.5	45.4	28.8	25.7	43.4	27.5	23.3	50.6	40.5	
Level of Service	D	C	C	D	C	C	D	C	C	D	D	
Approach Delay (s)		31.9			36.5			27.0			41.4	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	94.7	Sum of lost time (s)	20.3
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



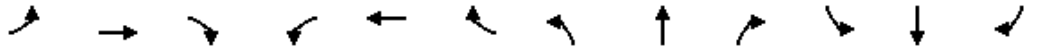
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	230	37	0	0	0	146	1257	0	405	1244	634
Future Volume (vph)	177	230	37	0	0	0	146	1257	0	405	1244	634
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	0		0	100		0	280		0
Storage Lanes	1		1	0		0	1		0	0		1
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	1900	1615	0	0	0	1752	3505	0	1770	3539	1583
Flt Permitted	0.950						0.950			0.950		
Satd. Flow (perm)	1805	1900	1615	0	0	0	1752	3505	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			67									484
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		319			289			263			261	
Travel Time (s)		7.3			6.6			5.1			5.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	192	250	40	0	0	0	154	1323	0	413	1269	647
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	250	40	0	0	0	154	1323	0	413	1269	647
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1				1	2		1	2	1
Detector Template	Left	Thru	Right				Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100	20				20	100		20	100	20
Trailing Detector (ft)	0	0	0				0	0		0	0	0
Detector 1 Position(ft)	0	0	0				0	0		0	0	0
Detector 1 Size(ft)	20	6	20				20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex				Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94						94			94	
Detector 2 Size(ft)		6						6			6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Perm	NA	Perm				Prot	NA		Prot	NA	Perm
Protected Phases		4					5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4									6
Detector Phase	4	4	4				5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0				4.0	12.0		4.0	12.0	12.0
Minimum Split (s)	9.2	9.2	9.2				7.5	16.5		7.5	16.5	16.5
Total Split (s)	51.2	51.2	51.2				23.5	44.5		43.5	64.5	64.5
Total Split (%)	36.8%	36.8%	36.8%				16.9%	32.0%		31.3%	46.3%	46.3%
Maximum Green (s)	47.0	47.0	47.0				20.0	40.0		40.0	60.0	60.0
Yellow Time (s)	3.7	3.7	3.7				3.5	4.5		3.5	4.5	4.5
All-Red Time (s)	0.5	0.5	0.5				0.0	0.0		0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0				0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.2	4.2	4.2				3.5	4.5		3.5	4.5	4.5
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0				2.0	2.5		2.0	2.5	2.5
Recall Mode	None	None	None				None	Min		None	Min	Min
Act Effct Green (s)	17.0	17.0	17.0				13.3	40.7		27.6	55.0	55.0
Actuated g/C Ratio	0.17	0.17	0.17				0.14	0.42		0.28	0.56	0.56
v/c Ratio	0.61	0.76	0.12				0.65	0.91		0.83	0.64	0.59
Control Delay	47.2	54.5	4.0				54.6	39.3		47.8	17.8	6.3
Queue Delay	0.0	0.0	0.0				0.0	12.1		0.0	0.0	0.0
Total Delay	47.2	54.5	4.0				54.6	51.4		47.8	17.8	6.3
LOS	D	D	A				D	D		D	B	A
Approach Delay		47.4						51.8			20.0	
Approach LOS		D						D			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 97.8			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 34.0		Intersection LOS: C	
Intersection Capacity Utilization 79.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 5: SR 84/Woodside Rd & Veterans Blvd/US 101 SB On-Ramp





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	177	230	37	0	0	0	146	1257	0	405	1244	634
Future Volume (veh/h)	177	230	37	0	0	0	146	1257	0	405	1244	634
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				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
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900				1856	1856	0	1870	1870	1870
Adj Flow Rate, veh/h	192	250	40				154	1323	0	413	1269	647
Peak Hour Factor	0.92	0.92	0.92				0.95	0.95	0.95	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				3	3	0	2	2	2
Cap, veh/h	287	302	256				191	1532	0	457	2070	923
Arrive On Green	0.16	0.16	0.16				0.11	0.43	0.00	0.26	0.58	0.58
Sat Flow, veh/h	1810	1900	1610				1767	3618	0	1781	3554	1585
Grp Volume(v), veh/h	192	250	40				154	1323	0	413	1269	647
Grp Sat Flow(s),veh/h/ln	1810	1900	1610				1767	1763	0	1781	1777	1585
Q Serve(g_s), s	8.1	10.3	1.7				6.9	27.5	0.0	18.2	18.8	23.3
Cycle Q Clear(g_c), s	8.1	10.3	1.7				6.9	27.5	0.0	18.2	18.8	23.3
Prop In Lane	1.00		1.00				1.00		0.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	302	256				191	1532	0	457	2070	923
V/C Ratio(X)	0.67	0.83	0.16				0.81	0.86	0.00	0.90	0.61	0.70
Avail Cap(c_a), veh/h	1049	1101	933				436	1739	0	879	2630	1173
HCM Platoon Ratio	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
Uniform Delay (d), s/veh	32.1	33.0	29.4				35.3	20.8	0.0	29.2	11.0	11.9
Incr Delay (d2), s/veh	1.0	2.2	0.1				3.0	4.2	0.0	2.8	0.2	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	4.8	1.7				3.0	11.1	0.0	7.7	6.3	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.1	35.3	29.5				38.4	24.9	0.0	32.0	11.2	13.1
LnGrp LOS	C	D	C				D	C	A	C	B	B
Approach Vol, veh/h		482						1477			2329	
Approach Delay, s/veh		33.9						26.3			15.4	
Approach LOS		C						C			B	

Timer - Assigned Phs	1	2		4	5	6
Phs Duration (G+Y+Rc), s	24.3	39.7		17.1	12.3	51.7
Change Period (Y+Rc), s	3.5	4.5		* 4.2	3.5	4.5
Max Green Setting (Gmax), s	40.0	40.0		* 47	20.0	60.0
Max Q Clear Time (g_c+I1), s	20.2	29.5		12.3	8.9	25.3
Green Ext Time (p_c), s	0.6	5.7		0.5	0.1	12.8

Intersection Summary	
HCM 6th Ctrl Delay	21.3
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

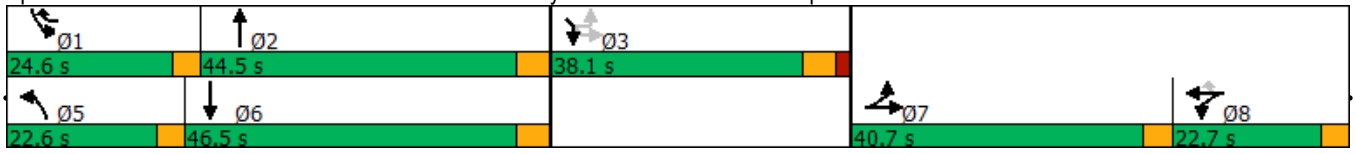
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	322	107	191	245	581	77	1123	22	113	1109	59
Future Volume (vph)	330	322	107	191	245	581	77	1123	22	113	1109	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		400	110					0	275		0
Storage Lanes	1		1	1					0	1		0
Taper Length (ft)	40			50						25		
Lane Util. Factor	0.91	0.91	0.95	0.91	0.91	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99		0.98	1.00			1.00			1.00	
Frt		0.968				0.850		0.997			0.992	
Flt Protected	0.950	0.992		0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1610	3217	0	1626	3396	1599	1752	3493	0	1787	3543	0
Flt Permitted	0.950	0.992		0.950	0.992		0.950			0.950		
Satd. Flow (perm)	1610	3217	0	1593	3385	1599	1752	3493	0	1787	3543	0
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)		17				358		1				
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		624			576			625			219	
Travel Time (s)		17.0			15.7			12.2			4.3	
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	367	358	119	210	269	638	85	1234	24	141	1386	74
Shared Lane Traffic (%)	24%			26%								
Lane Group Flow (vph)	279	565	0	155	324	638	85	1258	0	141	1460	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	SEL2	SEL	SER	SER2
Lane Configurations				
Traffic Volume (vph)	1	448	490	41
Future Volume (vph)	1	448	490	41
Ideal Flow (vphpl)	1900	1900	1900	1900
Storage Length (ft)		250	0	
Storage Lanes		2	1	
Taper Length (ft)		100		
Lane Util. Factor	0.95	0.97	0.91	0.95
Ped Bike Factor				
Frt		0.951	0.850	
Flt Protected		0.968		
Satd. Flow (prot)	0	3327	1441	0
Flt Permitted		0.968		
Satd. Flow (perm)	0	3327	1441	0
Right Turn on Red				No
Satd. Flow (RTOR)				
Link Speed (mph)		30		
Link Distance (ft)		434		
Travel Time (s)		9.9		
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Peak Hour Factor	0.92	0.87	0.87	0.87
Heavy Vehicles (%)	2%	2%	2%	2%
Adj. Flow (vph)	1	515	563	47
Shared Lane Traffic (%)			45%	
Lane Group Flow (vph)	0	769	357	0
Enter Blocked Intersection	No	No	No	No
Lane Alignment	Left	Left	Right	Right
Median Width(ft)		24		
Link Offset(ft)		0		
Crosswalk Width(ft)		16		
Two way Left Turn Lane				
Headway Factor	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	9
Number of Detectors	1	1	1	
Detector Template	Left	Left	Right	
Leading Detector (ft)	20	20	20	
Trailing Detector (ft)	0	0	0	
Detector 1 Position(ft)	0	0	0	
Detector 1 Size(ft)	20	20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel				
Detector 1 Extend (s)	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	
Detector 2 Position(ft)				
Detector 2 Size(ft)				
Detector 2 Type				
Detector 2 Channel				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Detector Phase	7	7		8	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0	4.0	4.0	16.0		4.0	10.0	
Minimum Split (s)	40.7	40.7		11.7	11.7	7.6	7.6	29.5		7.6	14.5	
Total Split (s)	40.7	40.7		22.7	22.7	24.6	22.6	44.5		24.6	46.5	
Total Split (%)	23.9%	23.9%		13.3%	13.3%	14.4%	13.2%	26.1%		14.4%	27.3%	
Maximum Green (s)	37.0	37.0		19.0	19.0	21.0	19.0	40.0		21.0	42.0	
Yellow Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
All-Red Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.0		0.8	1.0	
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1		0.1	0.1	
Recall Mode	Max	Max		Max	Max	None	None	Max		None	Max	
Walk Time (s)	4.0	4.0						4.0				
Flash Dont Walk (s)	33.0	33.0						21.0				
Pedestrian Calls (#/hr)	32	32						0				
Act Effct Green (s)	37.0	37.0		19.0	19.0	41.7	11.6	40.0		19.0	47.4	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.25	0.07	0.24		0.11	0.28	
v/c Ratio	0.79	0.79		0.85	0.85	0.96	0.71	1.52		0.70	1.47	
Control Delay	79.4	69.4		108.8	93.5	53.2	106.4	280.6		91.0	256.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	1.0	
Total Delay	79.4	69.4		108.8	93.5	53.2	106.4	280.6		91.0	257.5	
LOS	E	E		F	F	D	F	F		F	F	
Approach Delay		72.7			72.6			269.6			242.8	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 170.6			
Actuated Cycle Length: 168.7			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.52			
Intersection Signal Delay: 181.9		Intersection LOS: F	
Intersection Capacity Utilization 116.6%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 6: SR 84/Woodside Rd & Broadway St & US 101 SB Off-Ramp





Lane Group	SEL2	SEL	SER	SER2
Detector 2 Extend (s)				
Turn Type	Perm	Perm	Prot	
Protected Phases			3	
Permitted Phases	3	3		
Detector Phase	3	3	3	
Switch Phase				
Minimum Initial (s)	8.0	8.0	8.0	
Minimum Split (s)	31.1	31.1	31.1	
Total Split (s)	38.1	38.1	38.1	
Total Split (%)	22.3%	22.3%	22.3%	
Maximum Green (s)	32.0	32.0	32.0	
Yellow Time (s)	4.1	4.1	4.1	
All-Red Time (s)	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	
Total Lost Time (s)		6.1	6.1	
Lead/Lag				
Lead-Lag Optimize?				
Vehicle Extension (s)	1.2	1.2	1.2	
Minimum Gap (s)	1.2	1.2	1.2	
Time Before Reduce (s)	0.8	0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	
Recall Mode	None	None	None	
Walk Time (s)	4.0	4.0	4.0	
Flash Dont Walk (s)	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0	0	
Act Effct Green (s)		32.0	32.0	
Actuated g/C Ratio		0.19	0.19	
v/c Ratio		1.22	1.31	
Control Delay		166.8	212.4	
Queue Delay		0.0	0.0	
Total Delay		166.8	212.4	
LOS		F	F	
Approach Delay		181.2		
Approach LOS		F		

Intersection Summary

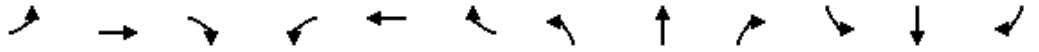
Movement	EBL	EBT	EBR	WBL	WBT	WBR2	NBL2	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	322	107	191	245	581	77	1123	22	113	1109	59
Future Volume (vph)	330	322	107	191	245	581	77	1123	22	113	1109	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Lane Util. Factor	0.91	0.91		0.91	0.91	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	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	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.99		0.95	0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1610	3219		1626	3395	1599	1752	3494		1787	3545	
Flt Permitted	0.95	0.99		0.95	0.99	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1610	3219		1626	3395	1599	1752	3494		1787	3545	
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	367	358	119	210	269	638	85	1234	24	141	1386	74
RTOR Reduction (vph)	0	13	0	0	0	277	0	1	0	0	0	0
Lane Group Flow (vph)	279	552	0	155	324	361	85	1257	0	141	1460	0
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases						8						
Actuated Green, G (s)	37.0	37.0		19.0	19.0	38.0	11.6	40.0		19.0	47.4	
Effective Green, g (s)	37.0	37.0		19.0	19.0	38.0	11.6	40.0		19.0	47.4	
Actuated g/C Ratio	0.22	0.22		0.11	0.11	0.23	0.07	0.24		0.11	0.28	
Clearance Time (s)	3.7	3.7		3.7	3.7	3.6	3.6	4.5		3.6	4.5	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	3.0		1.0	3.0	
Lane Grp Cap (vph)	353	706		183	382	360	120	828		201	996	
v/s Ratio Prot	c0.17	0.17		0.10	0.10	c0.11	0.05	0.36		0.08	c0.41	
v/s Ratio Perm						0.11						
v/c Ratio	0.79	0.78		0.85	0.85	1.00	0.71	1.52		0.70	1.47	
Uniform Delay, d1	62.1	62.0		73.4	73.4	65.3	76.8	64.3		72.1	60.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.4	8.4		35.8	20.3	47.9	14.4	239.5		8.7	215.2	
Delay (s)	78.5	70.4		109.2	93.7	113.2	91.3	303.8		80.8	275.8	
Level of Service	E	E		F	F	F	F	F		F	F	
Approach Delay (s)		73.1			107.0			290.3			258.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	200.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	168.6	Sum of lost time (s)	21.6
Intersection Capacity Utilization	116.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL2	SEL	SER	SER2
Lane Configurations				
Traffic Volume (vph)	1	448	490	41
Future Volume (vph)	1	448	490	41
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)		6.1	6.1	
Lane Util. Factor		0.97	0.91	
Frpb, ped/bikes		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	
Frt		0.95	0.85	
Flt Protected		0.97	1.00	
Satd. Flow (prot)		3324	1441	
Flt Permitted		0.97	1.00	
Satd. Flow (perm)		3324	1441	
Peak-hour factor, PHF	0.92	0.87	0.87	0.87
Adj. Flow (vph)	1	515	563	47
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	769	357	0
Confl. Peds. (#/hr)				
Confl. Bikes (#/hr)				
Heavy Vehicles (%)	2%	2%	2%	2%
Turn Type	Perm	Perm	Prot	
Protected Phases			3	
Permitted Phases	3	3		
Actuated Green, G (s)		32.0	32.0	
Effective Green, g (s)		32.0	32.0	
Actuated g/C Ratio		0.19	0.19	
Clearance Time (s)		6.1	6.1	
Vehicle Extension (s)		1.2	1.2	
Lane Grp Cap (vph)		630	273	
v/s Ratio Prot			c0.25	
v/s Ratio Perm		0.23		
v/c Ratio		1.22	1.31	
Uniform Delay, d1		68.3	68.3	
Progression Factor		1.00	1.00	
Incremental Delay, d2		113.2	162.4	
Delay (s)		181.5	230.7	
Level of Service		F	F	
Approach Delay (s)		197.1		
Approach LOS		F		

Intersection Summary



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	376	101	526	379	231	136	1271	563	208	1410	48
Future Volume (vph)	148	376	101	526	379	231	136	1271	563	208	1410	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.968				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3411	0	3467	1881	1599	1752	3505	1568	3467	3574	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3411	0	3461	1881	1599	1752	3505	1568	3467	3574	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				68			37			64
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			693			790			776	
Travel Time (s)		19.2			15.8			15.4			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			4									
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	172	437	117	566	408	248	146	1367	605	219	1484	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	554	0	566	408	248	146	1367	605	219	1484	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	21.2	24.2		26.2	29.2	11.2	14.2	68.0	26.2	11.2	65.0	21.2
Total Split (%)	16.4%	18.7%		20.2%	22.5%	8.6%	11.0%	52.5%	20.2%	8.6%	50.2%	16.4%
Maximum Green (s)	18.0	20.0		23.0	25.0	8.0	11.0	63.0	23.0	8.0	60.0	18.0
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	14.7	22.3		22.0	29.5	41.8	11.1	58.9	85.9	8.1	55.8	75.6
Actuated g/C Ratio	0.12	0.18		0.17	0.23	0.33	0.09	0.46	0.68	0.06	0.44	0.60
v/c Ratio	0.84	0.90		0.94	0.93	0.43	0.96	0.84	0.56	1.00	0.94	0.05
Control Delay	87.8	68.2		77.6	78.2	27.7	121.3	36.1	12.8	119.7	47.2	2.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.8	68.2		77.6	78.2	27.7	121.3	36.1	12.8	119.7	47.2	2.0
LOS	F	E		E	E	C	F	D	B	F	D	A
Approach Delay		72.8			67.7			35.3			54.9	
Approach LOS		E			E			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 129.6
Actuated Cycle Length: 126.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 52.7 Intersection LOS: D
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	148	376	101	526	379	231	136	1271	563	208	1410	48
Future Volume (veh/h)	148	376	101	526	379	231	136	1271	563	208	1410	48
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	172	437	117	566	408	248	146	1367	605	219	1484	51
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	1	1	1
Cap, veh/h	198	445	118	615	427	464	156	1666	1021	224	1606	894
Arrive On Green	0.11	0.16	0.16	0.18	0.23	0.23	0.09	0.47	0.47	0.06	0.45	0.45
Sat Flow, veh/h	1781	2764	733	3483	1885	1593	1767	3526	1572	3483	3582	1598
Grp Volume(v), veh/h	172	279	275	566	408	248	146	1367	605	219	1484	51
Grp Sat Flow(s),veh/h/ln	1781	1777	1720	1742	1885	1593	1767	1763	1572	1742	1791	1598
Q Serve(g_s), s	11.8	19.5	19.8	19.9	26.5	16.2	10.2	41.5	27.3	7.8	48.5	1.8
Cycle Q Clear(g_c), s	11.8	19.5	19.8	19.9	26.5	16.2	10.2	41.5	27.3	7.8	48.5	1.8
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	198	286	277	615	427	464	156	1666	1021	224	1606	894
V/C Ratio(X)	0.87	0.98	0.99	0.92	0.96	0.53	0.93	0.82	0.59	0.98	0.92	0.06
Avail Cap(c_a), veh/h	258	286	277	645	427	464	156	1787	1075	224	1729	949
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.3	51.9	52.1	50.3	47.4	37.0	56.3	28.2	12.4	58.0	32.3	12.5
Incr Delay (d2), s/veh	17.9	46.6	51.7	17.5	32.0	0.6	51.8	2.7	0.5	53.1	8.1	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	6.3	12.4	12.5	10.1	16.2	6.4	6.8	17.5	9.2	5.1	22.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.3	98.5	103.8	67.8	79.4	37.6	108.1	30.9	12.9	111.2	40.4	12.5
LnGrp LOS	E	F	F	E	E	D	F	C	B	F	D	B
Approach Vol, veh/h		726			1222			2118			1754	
Approach Delay, s/veh		94.3			65.6			31.1			48.4	
Approach LOS		F			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	63.7	25.2	24.2	14.2	60.7	17.0	32.3
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	8.0	63.0	23.0	* 20	11.0	60.0	18.0	* 25
Max Q Clear Time (g_c+I1), s	9.8	43.5	21.9	21.8	12.2	50.5	13.8	28.5
Green Ext Time (p_c), s	0.0	8.5	0.1	0.0	0.0	5.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	8	12	274	6	9	10	8	252	11	11	0
Future Volume (vph)	0	8	12	274	6	9	10	8	252	11	11	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.920			0.996			0.874				
Flt Protected					0.955			0.998		0.950		
Satd. Flow (prot)	0	1748	0	0	1772	0	0	1609	0	1805	1900	0
Flt Permitted					0.955			0.998		0.950		
Satd. Flow (perm)	0	1748	0	0	1772	0	0	1609	0	1805	1900	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)			2			26			7			2
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	0	11	16	351	8	12	11	9	271	15	15	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	27	0	0	371	0	0	291	0	15	15	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	11.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	8	12	274	6	9	10	8	252	11	11	0
Future Vol, veh/h	0	8	12	274	6	9	10	8	252	11	11	0
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	2	2	2	3	3	3	0	0	0
Mvmt Flow	0	11	16	351	8	12	11	9	271	15	15	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8	12.8	10.2	9
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	95%	100%	0%
Vol Thru, %	3%	40%	2%	0%	100%
Vol Right, %	93%	60%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	270	20	289	11	11
LT Vol	10	0	274	11	0
Through Vol	8	8	6	0	11
RT Vol	252	12	9	0	0
Lane Flow Rate	290	27	371	15	15
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.367	0.035	0.502	0.026	0.024
Departure Headway (Hd)	4.546	4.764	4.876	6.321	5.815
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	787	742	734	563	611
Service Time	2.595	2.852	2.937	4.097	3.59
HCM Lane V/C Ratio	0.368	0.036	0.505	0.027	0.025
HCM Control Delay	10.2	8	12.8	9.3	8.7
HCM Lane LOS	B	A	B	A	A
HCM 95th-tile Q	1.7	0.1	2.8	0.1	0.1

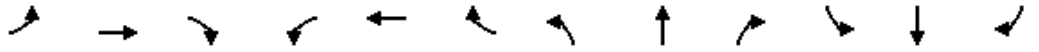
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	467	145	84	575	39	104	117	124	57	171	142
Future Volume (vph)	159	467	145	84	575	39	104	117	124	57	171	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.97		0.97	0.98	0.99		1.00	0.97	
Frt		0.964				0.850		0.923			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3364	0	1770	3539	1583	1770	1696	0	1770	1682	0
Flt Permitted	0.950			0.950			0.412			0.492		
Satd. Flow (perm)	1778	3364	0	1714	3539	1533	751	1696	0	914	1682	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		40				110		45			35	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1835			558			661	
Travel Time (s)		32.0			41.7			15.2			18.0	
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	173	508	158	95	653	44	125	141	149	66	197	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	173	666	0	95	653	44	125	290	0	66	360	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	35.2	55.2		25.2	45.2	45.2	43.0	43.0		43.0	43.0	
Total Split (%)	28.5%	44.7%		20.4%	36.6%	36.6%	34.8%	34.8%		34.8%	34.8%	
Maximum Green (s)	30.0	50.0		20.0	40.0	40.0	38.0	38.0		38.0	38.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		36			6	6	57	57		57	57	
Act Effct Green (s)	14.2	30.4		11.2	22.0	22.0	34.4	34.4		34.4	34.4	
Actuated g/C Ratio	0.16	0.35		0.13	0.25	0.25	0.39	0.39		0.39	0.39	
v/c Ratio	0.60	0.56		0.42	0.73	0.09	0.42	0.42		0.18	0.53	
Control Delay	47.7	27.6		47.8	37.2	0.4	26.2	18.8		20.4	22.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.7	27.6		47.8	37.2	0.4	26.2	18.8		20.4	22.0	
LOS	D	C		D	D	A	C	B		C	C	
Approach Delay		31.8			36.4			21.0			21.8	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 87.5			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 29.7		Intersection LOS: C	
Intersection Capacity Utilization 87.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	159	467	145	84	575	39	104	117	124	57	171	142
Future Volume (vph)	159	467	145	84	575	39	104	117	124	57	171	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3384		1770	3539	1538	1739	1699		1765	1694	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.41	1.00		0.49	1.00	
Satd. Flow (perm)	1787	3384		1770	3539	1538	755	1699		915	1694	
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Adj. Flow (vph)	173	508	158	95	653	44	125	141	149	66	197	163
RTOR Reduction (vph)	0	26	0	0	0	32	0	27	0	0	21	0
Lane Group Flow (vph)	173	640	0	95	653	12	125	263	0	66	339	0
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	14.2	30.4		7.9	24.1	24.1	34.4	34.4		34.4	34.4	
Effective Green, g (s)	14.2	30.4		7.9	24.1	24.1	34.4	34.4		34.4	34.4	
Actuated g/C Ratio	0.16	0.35		0.09	0.27	0.27	0.39	0.39		0.39	0.39	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	288	1167		158	968	420	294	663		357	661	
v/s Ratio Prot	c0.10	0.19		0.05	c0.18			0.15			c0.20	
v/s Ratio Perm						0.01	0.17			0.07		
v/c Ratio	0.60	0.55		0.60	0.67	0.03	0.43	0.40		0.18	0.51	
Uniform Delay, d1	34.3	23.3		38.6	28.5	23.4	19.6	19.4		17.6	20.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.3		4.4	1.5	0.0	0.7	0.3		0.2	0.5	
Delay (s)	36.7	23.6		42.9	30.0	23.4	20.3	19.6		17.8	21.0	
Level of Service	D	C		D	C	C	C	B		B	C	
Approach Delay (s)		26.3			31.2			19.9			20.5	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	15.4
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

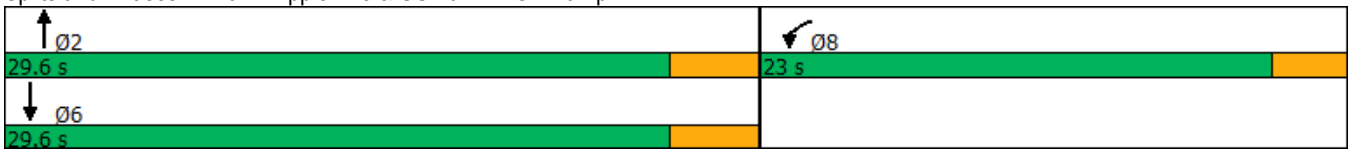


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1154	107	205	0	0	213
Future Volume (vph)	1154	107	205	0	0	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.987					
Flt Protected	0.956					
Satd. Flow (prot)	3410	0	1863	0	0	3574
Flt Permitted	0.956					
Satd. Flow (perm)	3410	0	1863	0	0	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	22					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.93	0.93	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	1241	115	256	0	0	266
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1356	0	256	0	0	266
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	23.0		29.6			29.6
Total Split (%)	43.7%		56.3%			56.3%
Maximum Green (s)	20.0		26.0			26.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	20.1		8.2			8.2
Actuated g/C Ratio	0.58		0.23			0.23
v/c Ratio	0.69		0.59			0.32
Control Delay	8.2		17.6			11.8
Queue Delay	0.0		0.0			0.0
Total Delay	8.2		17.6			11.8
LOS	A		B			B
Approach Delay	8.2		17.6			11.8
Approach LOS	A		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 34.9			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 10.0		Intersection LOS: A	
Intersection Capacity Utilization 85.7%		ICU Level of Service E	
Analysis Period (min) 15			

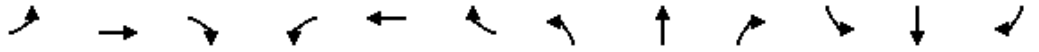
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1154	107	205	0	0	213
Future Volume (vph)	1154	107	205	0	0	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3412		1863			3574
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3412		1863			3574
Peak-hour factor, PHF	0.93	0.93	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1241	115	256	0	0	266
RTOR Reduction (vph)	9	0	0	0	0	0
Lane Group Flow (vph)	1347	0	256	0	0	266
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	20.1		8.1			8.1
Effective Green, g (s)	20.1		8.1			8.1
Actuated g/C Ratio	0.58		0.23			0.23
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1970		433			831
v/s Ratio Prot	c0.39		c0.14			0.07
v/s Ratio Perm						
v/c Ratio	0.68		0.59			0.32
Uniform Delay, d1	5.1		11.9			11.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	0.8		1.4			0.1
Delay (s)	5.9		13.3			11.1
Level of Service	A		B			B
Approach Delay (s)	5.9		13.3			11.1
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	34.8	Sum of lost time (s)	6.6
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

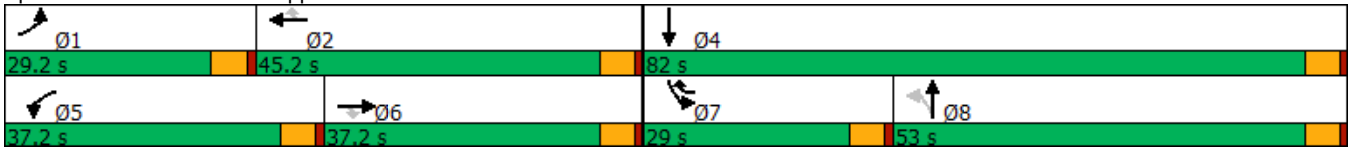


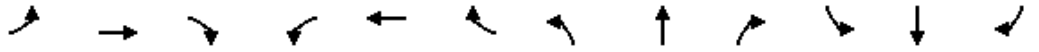
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	940	279	322	21	899	13	645	104	196	1023	22
Future Volume (vph)	113	940	279	322	21	899	13	645	104	196	1023	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.97	0.99		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.980			0.997	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3467	5136	1599	3467	1881	3646	0	4967	0	1770	3525	0
Flt Permitted	0.950			0.950				0.902		0.950		
Satd. Flow (perm)	3460	5136	1555	3446	1881	3568	0	4485	0	1768	3525	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			121					20			2	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)	1		11	11		1	16		2	2		16
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	127	1056	313	383	25	1070	15	733	118	218	1137	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	127	1056	313	383	25	1070	0	866	0	218	1161	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	29.2	37.2	37.2	37.2	45.2	29.0	53.0	53.0		29.0	82.0	
Total Split (%)	18.7%	23.8%	23.8%	23.8%	28.9%	18.5%	33.9%	33.9%		18.5%	52.4%	
Maximum Green (s)	24.0	32.0	32.0	32.0	40.0	24.0	48.0	48.0		24.0	77.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		11	11				2	2			16	
Act Effct Green (s)	10.0	32.6	32.6	18.3	40.8	61.1		29.8		20.1	55.0	
Actuated g/C Ratio	0.08	0.27	0.27	0.15	0.34	0.50		0.25		0.17	0.45	
v/c Ratio	0.44	0.77	0.62	0.74	0.04	0.59		0.78		0.75	0.73	
Control Delay	61.4	47.2	31.9	59.5	31.1	20.4		47.5		66.3	30.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	61.4	47.2	31.9	59.5	31.1	20.4		47.5		66.3	30.1	
LOS	E	D	C	E	C	C		D		E	C	
Approach Delay		45.2			30.7			47.5			35.8	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 121.5			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 39.0		Intersection LOS: D	
Intersection Capacity Utilization 93.9%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	940	279	322	21	899	13	645	104	196	1023	22
Future Volume (veh/h)	113	940	279	322	21	899	13	645	104	196	1023	22
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		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	127	1056	313	383	25	1070	15	733	118	218	1137	24
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	303	1360	417	466	586	1628	47	1073	169	252	1596	34
Arrive On Green	0.09	0.26	0.26	0.13	0.31	0.31	0.26	0.26	0.26	0.14	0.45	0.45
Sat Flow, veh/h	3483	5147	1578	3483	1885	3578	35	4163	657	1781	3557	75
Grp Volume(v), veh/h	127	1056	313	383	25	1070	316	274	276	218	568	593
Grp Sat Flow(s),veh/h/ln	1742	1716	1578	1742	1885	1193	1768	1549	1539	1781	1777	1855
Q Serve(g_s), s	3.5	19.1	18.3	10.8	0.9	23.5	1.2	16.0	16.3	12.0	26.0	26.1
Cycle Q Clear(g_c), s	3.5	19.1	18.3	10.8	0.9	23.5	15.4	16.0	16.3	12.0	26.0	26.1
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.43	1.00		0.04
Lane Grp Cap(c), veh/h	303	1360	417	466	586	1628	493	399	397	252	798	833
V/C Ratio(X)	0.42	0.78	0.75	0.82	0.04	0.66	0.64	0.69	0.70	0.87	0.71	0.71
Avail Cap(c_a), veh/h	831	1638	502	1108	750	1938	855	739	734	425	1360	1420
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	34.3	34.0	42.4	24.2	21.5	33.4	33.7	33.8	42.2	22.4	22.5
Incr Delay (d2), s/veh	0.3	1.6	3.9	1.4	0.0	0.4	0.5	0.8	0.8	4.4	0.4	0.4
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	1.5	8.0	7.4	4.7	0.4	6.5	6.9	6.1	6.2	5.5	10.5	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	35.8	37.8	43.8	24.2	21.9	33.9	34.4	34.6	46.7	22.9	22.9
LnGrp LOS	D	D	D	D	C	C	C	C	C	D	C	C
Approach Vol, veh/h		1496			1478			866			1379	
Approach Delay, s/veh		36.9			27.6			34.3			26.6	
Approach LOS		D			C			C			C	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	13.9	36.5		50.1	18.7	31.8	19.2	30.9				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	24.0	40.0		77.0	32.0	32.0	24.0	48.0				
Max Q Clear Time (g_c+I1), s	5.5	25.5		28.1	12.8	21.1	14.0	18.3				
Green Ext Time (p_c), s	0.2	2.8		6.0	0.7	4.5	0.2	4.2				

Intersection Summary												
HCM 6th Ctrl Delay			31.1									
HCM 6th LOS			C									

Notes

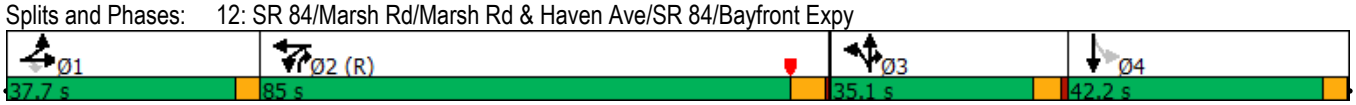
User approved pedestrian interval to be less than phase max green.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	163	265	1667	80	4	218	0	1729	16	33	4
Future Volume (vph)	2	163	265	1667	80	4	218	0	1729	16	33	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00			0.99			1.00	
Frt			0.850		0.993				0.850		0.989	
Flt Protected		0.999		0.950				0.950			0.985	
Satd. Flow (prot)	0	3571	1599	4942	1827	0	0	1752	3575	0	3510	0
Flt Permitted		0.999		0.950				0.950			0.800	
Satd. Flow (perm)	0	3569	1577	4929	1827	0	0	1744	3575	0	2851	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			294		1						4	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Peak Hour Factor	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	2	181	294	1684	81	4	234	0	1859	25	52	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	183	294	1684	85	0	0	234	1859	0	83	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	37.7	37.7	37.7	85.0	85.0		35.1	35.1		42.2	42.2	
Total Split (%)	18.9%	18.9%	18.9%	42.5%	42.5%		17.6%	17.6%		21.1%	21.1%	
Maximum Green (s)	34.0	34.0	34.0	78.8	78.8		30.0	30.0		38.0	38.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	7	7					2	2	
Act Effct Green (s)		16.7	16.7	118.5	118.5			29.8	153.4		15.8	
Actuated g/C Ratio		0.08	0.08	0.59	0.59			0.15	0.77		0.08	
v/c Ratio		0.61	0.73	0.58	0.08			0.90	0.68		0.36	
Control Delay		96.3	18.4	28.6	21.1			115.4	22.3		85.4	
Queue Delay		0.0	0.0	0.0	0.0			0.0	1.0		0.0	
Total Delay		96.3	18.4	28.6	21.1			115.4	23.3		85.4	
LOS		F	B	C	C			F	C		F	
Approach Delay		48.3			28.3			33.6			85.4	
Approach LOS		D			C			C			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 200			
Actuated Cycle Length: 200			
Offset: 100 (50%), Referenced to phase 2:WBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 34.0		Intersection LOS: C	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	163	265	1667	80	4	218	0	1729	16	33	4
Future Volume (vph)	2	163	265	1667	80	4	218	0	1729	16	33	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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		1.00	
Frt		1.00	0.85	1.00	0.99			1.00	0.85		0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)		3572	1577	4942	1827			1752	3575		3510	
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00		0.80	
Satd. Flow (perm)		3572	1577	4942	1827			1752	3575		2851	
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Adj. Flow (vph)	2	181	294	1684	81	4	234	0	1859	25	52	6
RTOR Reduction (vph)	0	0	269	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	183	25	1684	85	0	0	234	1859	0	79	0
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		16.7	16.7	118.5	118.5			29.8	154.5		15.8	
Effective Green, g (s)		16.7	16.7	118.5	118.5			29.8	154.5		15.8	
Actuated g/C Ratio		0.08	0.08	0.59	0.59			0.15	0.77		0.08	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		298	131	2928	1082			261	2761		225	
v/s Ratio Prot		c0.05		0.34	0.05			c0.13	c0.52			
v/s Ratio Perm			0.02								c0.03	
v/c Ratio		0.61	0.19	0.58	0.08			0.90	0.67		0.35	
Uniform Delay, d1		88.5	85.3	25.2	17.4			83.6	10.8		87.3	
Progression Factor		1.00	1.00	1.00	1.00			1.14	1.48		1.00	
Incremental Delay, d2		2.6	0.3	0.8	0.1			18.7	0.3		0.3	
Delay (s)		91.2	85.6	26.0	17.6			113.6	16.2		87.6	
Level of Service		F	F	C	B			F	B		F	
Approach Delay (s)		87.7			25.6			27.1			87.6	
Approach LOS		F			C			C			F	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

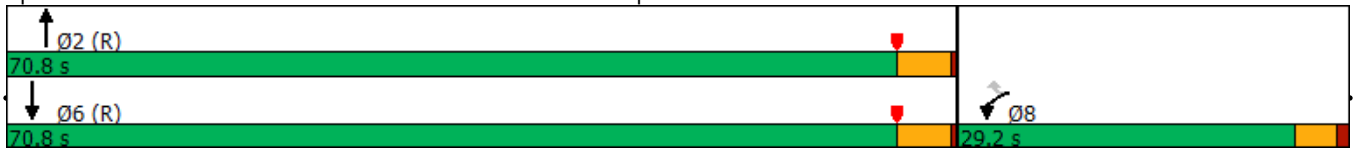


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	605	177	2009	0	0	785
Future Volume (vph)	605	177	2009	0	0	785
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2646	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		23				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	658	192	2137	0	0	844
Shared Lane Traffic (%)						
Lane Group Flow (vph)	658	192	2137	0	0	844
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	29.2	29.2	70.8			70.8
Total Split (%)	29.2%	29.2%	70.8%			70.8%
Maximum Green (s)	25.0	25.0	66.2			66.2
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	22.3	22.3	68.9			68.9
Actuated g/C Ratio	0.22	0.22	0.69			0.69
v/c Ratio	0.88	0.32	0.89			0.35
Control Delay	51.9	29.2	16.8			10.5
Queue Delay	0.0	0.0	3.2			0.0
Total Delay	51.9	29.2	20.0			10.5
LOS	D	C	B			B
Approach Delay	46.8		20.0			10.5
Approach LOS	D		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 86 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 23.8		Intersection LOS: C	
Intersection Capacity Utilization 117.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	605	177	2009	0	0	785
Future Volume (veh/h)	605	177	2009	0	0	785
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	658	192	2137	0	0	844
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	724	585	2458	0	0	2458
Arrive On Green	0.21	0.21	0.70	0.00	0.00	0.70
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	658	192	2137	0	0	844
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	19.0	6.0	46.6	0.0	0.0	9.5
Cycle Q Clear(g_c), s	19.0	6.0	46.6	0.0	0.0	9.5
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	724	585	2458	0	0	2458
V/C Ratio(X)	0.91	0.33	0.87	0.00	0.00	0.34
Avail Cap(c_a), veh/h	843	681	2458	0	0	2458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	38.3	33.2	11.6	0.0	0.0	6.0
Incr Delay (d2), s/veh	11.5	0.1	4.5	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	2.0	15.9	0.0	0.0	3.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	49.8	33.3	16.2	0.0	0.0	6.4
LnGrp LOS	D	C	B	A	A	A
Approach Vol, veh/h	850		2137			844
Approach Delay, s/veh	46.1		16.2			6.4
Approach LOS	D		B			A

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		74.3			74.3	25.7
Change Period (Y+Rc), s		4.6			4.6	4.2
Max Green Setting (Gmax), s		66.2			66.2	25.0
Max Q Clear Time (g_c+I1), s		48.6			11.5	21.0
Green Ext Time (p_c), s		11.7			4.3	0.4

Intersection Summary	
HCM 6th Ctrl Delay	20.6
HCM 6th LOS	C

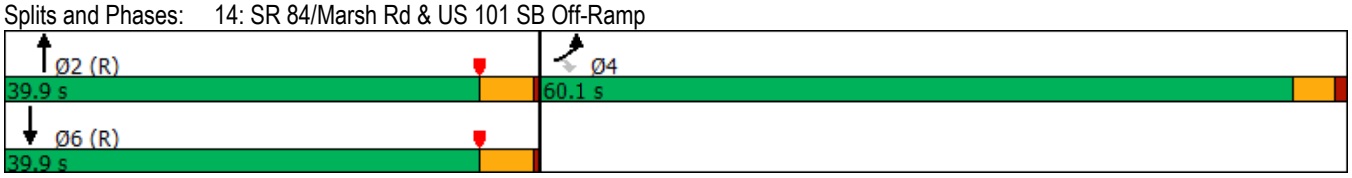


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1434	504	0	962	1061	0
Future Volume (vph)	1434	504	0	962	1061	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		11				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	1509	531	0	1069	1192	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1509	531	0	1069	1192	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	60.1	60.1		39.9	39.9	
Total Split (%)	60.1%	60.1%		39.9%	39.9%	
Maximum Green (s)	56.0	56.0		35.3	35.3	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	52.2	52.2		39.1	39.1	
Actuated g/C Ratio	0.52	0.52		0.39	0.39	
v/c Ratio	0.87	0.66		0.76	0.87	
Control Delay	26.9	21.0		31.8	54.4	
Queue Delay	0.4	0.0		0.0	0.0	
Total Delay	27.3	21.0		31.8	54.4	
LOS	C	C		C	D	
Approach Delay	25.7			31.8	54.4	
Approach LOS	C			C	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 35.2		Intersection LOS: D	
Intersection Capacity Utilization 107.4%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1434	504	0	962	1061	0
Future Volume (veh/h)	1434	504	0	962	1061	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	1509	531	0	1069	1192	0
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1577	724	0	1595	1570	0
Arrive On Green	0.47	0.47	0.00	0.45	0.45	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	1509	531	0	1069	1192	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	43.1	27.8	0.0	23.6	28.3	0.0
Cycle Q Clear(g_c), s	43.1	27.8	0.0	23.6	28.3	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1577	724	0	1595	1570	0
V/C Ratio(X)	0.96	0.73	0.00	0.67	0.76	0.00
Avail Cap(c_a), veh/h	1889	867	0	1595	1570	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	21.6	0.0	21.9	23.2	0.0
Incr Delay (d2), s/veh	10.4	1.9	0.0	2.3	3.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.5	10.0	0.0	9.9	11.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.0	23.5	0.0	24.2	26.7	0.0
LnGrp LOS	D	C	A	C	C	A
Approach Vol, veh/h	2040			1069	1192	
Approach Delay, s/veh	32.7			24.2	26.7	
Approach LOS	C			C	C	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		49.1		50.9		49.1
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		35.3		56.0		35.3
Max Q Clear Time (g_c+I1), s		25.6		45.1		30.3
Green Ext Time (p_c), s		2.3		1.7		1.8

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Existing Ferry Project AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	3	205	37	3	207	248
Future Volume (vph)	3	205	37	3	207	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.867					0.850
Flt Protected				0.956	0.950	
Satd. Flow (prot)	1297	0	0	1730	1752	1568
Flt Permitted				0.956	0.950	
Satd. Flow (perm)	1297	0	0	1730	1752	1568
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles (%)	27%	27%	5%	5%	3%	3%
Adj. Flow (vph)	4	256	48	4	292	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	260	0	0	52	292	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	12
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	205	37	3	207	248
Future Vol, veh/h	3	205	37	3	207	248
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles, %	27	27	5	5	3	3
Mvmt Flow	4	256	48	4	292	349
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	11.4	9.6	12.5
HCM LOS	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	93%
Vol Thru, %	0%	0%	1%	7%
Vol Right, %	0%	100%	99%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	207	248	208	40
LT Vol	207	0	0	37
Through Vol	0	0	3	3
RT Vol	0	248	205	0
Lane Flow Rate	292	349	260	52
Geometry Grp	5	5	2	2
Degree of Util (X)	0.475	0.452	0.375	0.085
Departure Headway (Hd)	5.863	4.655	5.189	5.903
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	612	768	689	601
Service Time	3.636	2.427	3.251	3.995
HCM Lane V/C Ratio	0.477	0.454	0.377	0.087
HCM Control Delay	13.9	11.3	11.4	9.6
HCM Lane LOS	B	B	B	A
HCM 95th-tile Q	2.6	2.4	1.7	0.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	171	49	161	37	0
Future Volume (vph)	0	171	49	161	37	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			484	416	
Travel Time (s)	10.1			11.0	9.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	186	53	175	40	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	186	0	53	175	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	171	49	161	37	0
Future Vol, veh/h	0	171	49	161	37	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	186	53	175	40	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	8	9.1	8
HCM LOS	A	A	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	49	161	171	37
LT Vol	49	0	0	0
Through Vol	0	161	0	37
RT Vol	0	0	171	0
Lane Flow Rate	53	175	186	40
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.08	0.237	0.206	0.052
Departure Headway (Hd)	5.387	4.885	3.995	4.692
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	658	726	903	764
Service Time	3.181	2.679	1.997	2.716
HCM Lane V/C Ratio	0.081	0.241	0.206	0.052
HCM Control Delay	8.7	9.2	8	8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.9	0.8	0.2

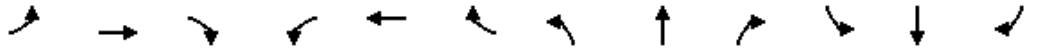
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	74	98	241	81	62	91	820	181	11	288	47
Future Volume (vph)	99	74	98	241	81	62	91	820	181	11	288	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	75		50	200		250	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950	0.975		0.950			0.950		
Satd. Flow (prot)	1410	1484	1262	1603	1645	1509	1671	3343	1495	1444	2817	0
Flt Permitted	0.950			0.950	0.512		0.950			0.950		
Satd. Flow (perm)	1408	1484	1262	1603	864	1489	1669	3343	1495	1444	2817	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			133			201		13	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			337			574			1022	
Travel Time (s)		12.7			7.7			11.2			19.9	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Adj. Flow (vph)	115	86	114	271	91	70	101	911	201	15	395	64
Shared Lane Traffic (%)				34%								
Lane Group Flow (vph)	115	86	114	179	183	70	101	911	201	15	459	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	7 4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	22.5	22.5	22.5	22.5	13.1	13.1	23.1	23.1	23.1	14.1	32.1	
Total Split (s)	27.0	27.0	27.0	29.1	29.1	29.1	41.1	69.1	69.1	17.1	45.1	
Total Split (%)	19.0%	19.0%	19.0%	20.4%	20.4%	20.4%	28.9%	48.6%	48.6%	12.0%	31.7%	
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0	24.0	36.0	64.0	64.0	12.0	40.0	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)					7.0	7.0					7.0	
Flash Dont Walk (s)					18.0	18.0					20.0	
Pedestrian Calls (#/hr)					1	1					1	
Act Effct Green (s)	11.5	23.2	23.2	13.2	13.2	24.8	9.7	31.0	31.0	9.3	18.2	
Actuated g/C Ratio	0.14	0.27	0.27	0.16	0.16	0.29	0.11	0.36	0.36	0.11	0.21	
v/c Ratio	0.61	0.21	0.26	0.72	0.72	0.13	0.53	0.75	0.30	0.10	0.75	
Control Delay	51.3	31.8	6.5	52.8	52.1	0.5	49.4	28.7	4.5	43.1	38.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	51.3	31.8	6.5	52.8	52.1	0.5	49.4	28.7	4.5	43.1	38.5	
LOS	D	C	A	D	D	A	D	C	A	D	D	
Approach Delay		29.8			44.0			26.4			38.6	
Approach LOS		C			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 142.3			
Actuated Cycle Length: 85.1			
Natural Cycle: 105			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 32.3		Intersection LOS: C	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	74	98	241	81	62	91	820	181	11	288	47
Future Volume (vph)	99	74	98	241	81	62	91	820	181	11	288	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.99	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	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1484	1262	1603	1646	1490	1671	3343	1495	1444	2818	
Flt Permitted	0.95	1.00	1.00	0.95	0.51	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1484	1262	1603	864	1490	1671	3343	1495	1444	2818	
Peak-hour factor, PHF	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Adj. Flow (vph)	115	86	114	271	91	70	101	911	201	15	395	64
RTOR Reduction (vph)	0	0	84	0	0	50	0	0	131	0	10	0
Lane Group Flow (vph)	115	86	30	179	183	20	101	911	70	15	449	0
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	11.6	23.2	23.2	13.2	24.8	24.8	9.7	31.0	31.0	1.3	22.6	
Effective Green, g (s)	11.6	23.2	23.2	13.2	24.8	24.8	9.7	31.0	31.0	1.3	22.6	
Actuated g/C Ratio	0.13	0.26	0.26	0.15	0.28	0.28	0.11	0.35	0.35	0.01	0.25	
Clearance Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	183	386	328	237	356	415	182	1164	520	21	715	
v/s Ratio Prot	c0.08	0.06		c0.11	0.08		c0.06	c0.27		0.01	0.16	
v/s Ratio Perm			0.02		c0.07	0.01			0.05			
v/c Ratio	0.63	0.22	0.09	0.76	0.51	0.05	0.55	0.78	0.13	0.71	0.63	
Uniform Delay, d1	36.7	25.8	24.9	36.4	27.0	23.5	37.6	26.0	19.8	43.7	29.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.8	0.1	0.0	11.5	0.5	0.0	2.1	3.2	0.0	65.4	1.3	
Delay (s)	41.4	25.9	25.0	47.8	27.5	23.5	39.7	29.2	19.9	109.0	30.7	
Level of Service	D	C	C	D	C	C	D	C	B	F	C	
Approach Delay (s)		31.2			35.3			28.5			33.2	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.0	Sum of lost time (s)	20.3
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	115	86	114	179	183	70	101	911	201	15	459
v/c Ratio	0.61	0.21	0.26	0.72	0.72	0.13	0.53	0.75	0.30	0.10	0.75
Control Delay (s/veh)	51.3	31.8	6.5	52.8	52.1	0.5	49.4	28.7	4.5	43.1	38.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.3	31.8	6.5	52.8	52.1	0.5	49.4	28.7	4.5	43.1	38.5
Queue Length 50th (ft)	54	32	0	88	90	0	48	196	0	7	108
Queue Length 95th (ft)	133	100	32	204	207	0	127	380	48	26	146
Internal Link Dist (ft)		386			257			494			942
Turn Bay Length (ft)	250		250	75		50	200		250	400	
Base Capacity (vph)	374	412	446	464	476	528	726	2584	1201	209	1367
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.21	0.26	0.39	0.38	0.13	0.14	0.35	0.17	0.07	0.34

Intersection Summary

Existing Ferry Project PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	143	233	10	206	135
Future Volume (vph)	4	143	233	10	206	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.869					0.850
Flt Protected				0.954	0.950	
Satd. Flow (prot)	1588	0	0	1795	1736	1553
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	1588	0	0	1795	1736	1553
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles (%)	4%	4%	1%	1%	4%	4%
Adj. Flow (vph)	5	163	333	14	375	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	0	0	347	375	245
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	16.5
Intersection LOS	C

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	143	233	10	206	135
Future Vol, veh/h	4	143	233	10	206	135
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles, %	4	4	1	1	4	4
Mvmt Flow	5	163	333	14	375	245
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	10.6	16.7	18
HCM LOS	B	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	96%
Vol Thru, %	0%	0%	3%	4%
Vol Right, %	0%	100%	97%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	206	135	147	243
LT Vol	206	0	0	233
Through Vol	0	0	4	10
RT Vol	0	135	143	0
Lane Flow Rate	375	245	167	347
Geometry Grp	5	5	2	2
Degree of Util (X)	0.684	0.365	0.258	0.573
Departure Headway (Hd)	6.571	5.355	5.566	5.938
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	551	673	643	608
Service Time	4.305	3.09	3.615	3.977
HCM Lane V/C Ratio	0.681	0.364	0.26	0.571
HCM Control Delay	22.4	11.2	10.6	16.7
HCM Lane LOS	C	B	B	C
HCM 95th-tile Q	5.2	1.7	1	3.6



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	48	181	33	99	0
Future Volume (vph)	0	48	181	33	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1611	0	1770	1863	1863	0
Flt Permitted			0.950			
Satd. Flow (perm)	1611	0	1770	1863	1863	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			485	412	
Travel Time (s)	10.1			11.0	9.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	52	197	36	108	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	0	197	36	108	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	48	181	33	99	0
Future Vol, veh/h	0	48	181	33	99	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	52	197	36	108	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	7.4	9.6	8.1
HCM LOS	A	A	A

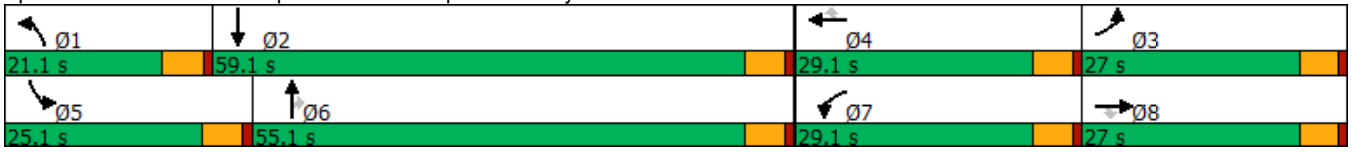
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	181	33	48	99
LT Vol	181	0	0	0
Through Vol	0	33	0	99
RT Vol	0	0	48	0
Lane Flow Rate	197	36	52	108
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.283	0.047	0.06	0.132
Departure Headway (Hd)	5.181	4.68	4.163	4.413
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	691	762	864	816
Service Time	2.931	2.43	2.17	2.421
HCM Lane V/C Ratio	0.285	0.047	0.06	0.132
HCM Control Delay	10	7.7	7.4	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	1.2	0.1	0.2	0.5

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	132	87	164	61	11	38	384	249	86	762	72
Future Volume (vph)	71	132	87	164	61	11	38	384	249	86	762	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		250	75		50	200		250	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99					0.98					1.00	
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950	0.977		0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	1665	1712	1568	1687	3374	1509	1770	3486	0
Flt Permitted	0.950			0.950	0.675		0.950			0.950		
Satd. Flow (perm)	1724	1827	1553	1665	1183	1537	1687	3374	1509	1770	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			112			98			307		9	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			337			574			1022	
Travel Time (s)		12.7			7.7			11.2			19.9	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Adj. Flow (vph)	91	169	112	191	71	13	47	474	307	97	856	81
Shared Lane Traffic (%)				32%								
Lane Group Flow (vph)	91	169	112	130	132	13	47	474	307	97	937	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	7 4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	15.0	15.0	13.1	13.1	13.1	13.1	13.1	13.1	14.1	32.1	
Total Split (s)	27.0	27.0	27.0	29.1	29.1	29.1	21.1	55.1	55.1	25.1	59.1	
Total Split (%)	19.8%	19.8%	19.8%	21.3%	21.3%	21.3%	15.5%	40.4%	40.4%	18.4%	43.4%	
Maximum Green (s)	22.0	22.0	22.0	24.0	24.0	24.0	16.0	50.0	50.0	20.0	54.0	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)					7.0	7.0					7.0	
Flash Dont Walk (s)					18.0	18.0					20.0	
Pedestrian Calls (#/hr)					5	5					0	
Act Effct Green (s)	10.2	20.5	20.5	10.9	10.9	25.7	8.6	22.7	22.7	10.3	26.9	
Actuated g/C Ratio	0.13	0.25	0.25	0.13	0.13	0.32	0.11	0.28	0.28	0.13	0.33	
v/c Ratio	0.42	0.37	0.24	0.58	0.58	0.02	0.26	0.50	0.48	0.43	0.81	
Control Delay	45.5	32.0	8.4	49.0	48.4	0.1	44.6	28.1	5.9	45.5	32.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.5	32.0	8.4	49.0	48.4	0.1	44.6	28.1	5.9	45.5	32.4	
LOS	D	C	A	D	D	A	D	C	A	D	C	
Approach Delay		28.2			46.4			20.8			33.6	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 136.3			
Actuated Cycle Length: 81.4			
Natural Cycle: 75			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 30.0		Intersection LOS: C	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	132	87	164	61	11	38	384	249	86	762	72
Future Volume (vph)	71	132	87	164	61	11	38	384	249	86	762	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00	1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	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	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	0.98	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	1827	1553	1665	1713	1541	1687	3374	1509	1770	3486	
Flt Permitted	0.95	1.00	1.00	0.95	0.68	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	1827	1553	1665	1183	1541	1687	3374	1509	1770	3486	
Peak-hour factor, PHF	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Adj. Flow (vph)	91	169	112	191	71	13	47	474	307	97	856	81
RTOR Reduction (vph)	0	0	83	0	0	9	0	0	221	0	6	0
Lane Group Flow (vph)	91	169	29	130	132	4	47	474	86	97	931	0
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Actuated Green, G (s)	7.3	22.1	22.1	10.9	25.7	25.7	4.3	23.8	23.8	7.4	26.9	
Effective Green, g (s)	7.3	22.1	22.1	10.9	25.7	25.7	4.3	23.8	23.8	7.4	26.9	
Actuated g/C Ratio	0.09	0.26	0.26	0.13	0.30	0.30	0.05	0.28	0.28	0.09	0.32	
Clearance Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Lane Grp Cap (vph)	149	477	406	214	428	468	85	950	425	155	1109	
v/s Ratio Prot	c0.05	c0.09		c0.08	0.04		0.03	0.14		c0.05	c0.27	
v/s Ratio Perm			0.02		0.05	0.00			0.06			
v/c Ratio	0.61	0.35	0.07	0.61	0.31	0.01	0.55	0.50	0.20	0.63	0.84	
Uniform Delay, d1	37.2	25.4	23.5	34.8	22.6	20.5	39.2	25.4	23.1	37.2	26.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.1	0.2	0.0	3.3	0.1	0.0	4.4	0.2	0.1	5.6	5.5	
Delay (s)	42.3	25.6	23.5	38.1	22.7	20.5	43.5	25.5	23.2	42.8	32.3	
Level of Service	D	C	C	D	C	C	D	C	C	D	C	
Approach Delay (s)		29.0			29.9			25.7			33.2	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	20.3
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	169	112	130	132	13	47	474	307	97	937
v/c Ratio	0.42	0.37	0.24	0.58	0.58	0.02	0.26	0.50	0.48	0.43	0.81
Control Delay (s/veh)	45.5	32.0	8.4	49.0	48.4	0.1	44.6	28.1	5.9	45.5	32.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.5	32.0	8.4	49.0	48.4	0.1	44.6	28.1	5.9	45.5	32.4
Queue Length 50th (ft)	48	75	0	73	74	0	25	113	0	52	256
Queue Length 95th (ft)	93	141	31	141	142	0	61	156	37	112	351
Internal Link Dist (ft)		386			257			494			942
Turn Bay Length (ft)	250		250	75		50	200		250	400	
Base Capacity (vph)	499	546	542	523	537	552	353	2207	1093	463	2414
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.31	0.21	0.25	0.25	0.02	0.13	0.21	0.28	0.21	0.39

Intersection Summary

Cumulative No Project AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	51	55	4	262	412
Future Volume (vph)	4	51	55	4	262	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.875					0.850
Flt Protected				0.955	0.950	
Satd. Flow (prot)	1309	0	0	1728	1752	1568
Flt Permitted				0.955	0.950	
Satd. Flow (perm)	1309	0	0	1728	1752	1568
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles (%)	27%	27%	5%	5%	3%	3%
Adj. Flow (vph)	5	64	71	5	369	580
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	0	76	369	580
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	14.8
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	4	51	55	4	262	412
Future Vol, veh/h	4	51	55	4	262	412
Peak Hour Factor	0.80	0.80	0.77	0.77	0.71	0.71
Heavy Vehicles, %	27	27	5	5	3	3
Mvmt Flow	5	64	71	5	369	580
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.3	9.8	15.6
HCM LOS	A	A	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	93%
Vol Thru, %	0%	0%	7%	7%
Vol Right, %	0%	100%	93%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	262	412	55	59
LT Vol	262	0	0	55
Through Vol	0	0	4	4
RT Vol	0	412	51	0
Lane Flow Rate	369	580	69	77
Geometry Grp	5	5	2	2
Degree of Util (X)	0.561	0.688	0.107	0.126
Departure Headway (Hd)	5.471	4.267	5.59	5.941
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	847	640	602
Service Time	3.201	1.997	3.636	3.987
HCM Lane V/C Ratio	0.558	0.685	0.108	0.128
HCM Control Delay	15	15.9	9.3	9.8
HCM Lane LOS	B	C	A	A
HCM 95th-tile Q	3.5	5.6	0.4	0.4



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	30	674	105	1
Future Volume (vph)	0	0	30	674	105	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1719	3438	3056	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1719	3438	3056	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.72	0.72	0.83	0.83
Heavy Vehicles (%)	2%	2%	5%	5%	18%	18%
Adj. Flow (vph)	0	0	42	936	127	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	42	936	128	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	30	674	105	1
Future Vol, veh/h	0	0	30	674	105	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	72	72	83	83
Heavy Vehicles, %	2	2	5	5	18	18
Mvmt Flow	0	0	42	936	127	1

Major/Minor	Minor2		Major2	
Conflicting Flow All	128	128	-	0
Stage 1	128	128	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.9	6.6	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.55	4.05	-	-
Pot Cap-1 Maneuver	845	~ 755	-	-
Stage 1	875	~ 782	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	845	0	-	-
Mov Cap-2 Maneuver	845	0	-	-
Stage 1	875	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	845	-	-	-	-
HCM Lane V/C Ratio	0.049	-	-	-	-
HCM Control Delay (s)	9.5	-	-	-	-
HCM Lane LOS	A	-	-	-	-
HCM 95th %tile Q(veh)	0.2	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	266	55	0
Future Volume (vph)	0	0	0	266	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1845	1845	1496	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1845	1845	1496	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			484	416	
Travel Time (s)	10.1			11.0	9.5	
Peak Hour Factor	0.92	0.92	0.71	0.71	0.80	0.80
Heavy Vehicles (%)	2%	2%	3%	3%	27%	27%
Adj. Flow (vph)	0	0	0	375	69	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	375	69	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	266	55	0
Future Vol, veh/h	0	0	0	266	55	0
Peak Hour Factor	0.92	0.92	0.71	0.71	0.80	0.80
Heavy Vehicles, %	2	2	3	3	27	27
Mvmt Flow	0	0	0	375	69	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	0	11.4	8.4
HCM LOS	-	B	A

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	266	0	55
LT Vol	0	0	0	0
Through Vol	0	266	0	55
RT Vol	0	0	0	0
Lane Flow Rate	0	375	0	69
Geometry Grp	5	5	2	4a
Degree of Util (X)	0	0.477	0	0.093
Departure Headway (Hd)	4.584	4.584	5.012	4.858
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	787	0	742
Service Time	2.301	2.301	3.017	2.858
HCM Lane V/C Ratio	0	0.476	0	0.093
HCM Control Delay	7.3	11.4	8	8.4
HCM Lane LOS	N	B	N	A
HCM 95th-tile Q	0	2.6	0	0.3

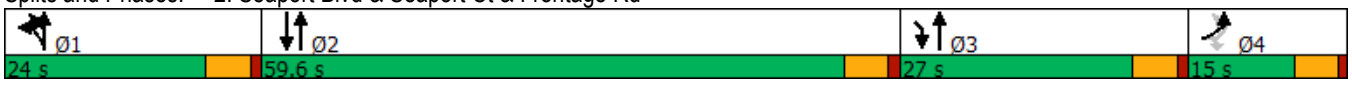
Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	19	46	22	704	104	2	0	49	1
Future Volume (vph)	0	19	46	22	704	104	2	0	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60		265			0	0	0	
Storage Lanes	1	1		1			0	0	1	
Taper Length (ft)	25			50				25		
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00						
Frt		0.850				0.998			0.865	
Flt Protected				0.950						
Satd. Flow (prot)	1759	1495	0	1626	3252	3079	0	0	1015	0
Flt Permitted				0.950						
Satd. Flow (perm)	1759	1474	0	1622	3252	3079	0	0	1015	0
Right Turn on Red		Yes								No
Satd. Flow (RTOR)		811								
Link Speed (mph)	30				35	35		30		
Link Distance (ft)	369				675	1774		538		
Travel Time (s)	8.4				13.1	34.6		12.2		
Confl. Peds. (#/hr)		2	1							1
Peak Hour Factor	0.54	0.54	0.76	0.76	0.76	0.84	0.84	0.85	0.85	0.85
Heavy Vehicles (%)	8%	8%	11%	11%	11%	17%	17%	62%	62%	62%
Adj. Flow (vph)	0	35	61	29	926	124	2	0	58	1
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	35	0	90	926	126	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	12				12	12		0		
Link Offset(ft)	0				0	0		0		
Crosswalk Width(ft)	16				16	16		16		
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	2	2			1	
Detector Template	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)					94	94				
Detector 2 Size(ft)					6	6				
Detector 2 Type					Cl+Ex	Cl+Ex				
Detector 2 Channel										
Detector 2 Extend (s)					0.0	0.0				

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Detector Phase	4	4	1	1	2	2			3	
Switch Phase										
Minimum Initial (s)	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	15.0	15.0	24.0	24.0		59.6			27.0	
Total Split (%)	11.9%	11.9%	19.1%	19.1%		47.5%			21.5%	
Maximum Green (s)	10.0	10.0	18.8	18.8		54.4			21.8	
Yellow Time (s)	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0								
Pedestrian Calls (#/hr)	2	2								
Act Effct Green (s)		14.5		12.6	53.8	27.5			13.6	
Actuated g/C Ratio		0.24		0.20	0.87	0.45			0.22	
v/c Ratio		0.04		0.27	0.33	0.09			0.26	
Control Delay		0.1		32.6	4.2	22.9			34.1	
Queue Delay		0.0		0.0	0.0	0.0			0.0	
Total Delay		0.1		32.6	4.2	22.9			34.1	
LOS		A		C	A	C			C	
Approach Delay	0.1				6.8	22.9		34.1		
Approach LOS	A				A	C		C		

Intersection Summary

Area Type: Other
Cycle Length: 125.6
Actuated Cycle Length: 61.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.33
Intersection Signal Delay: 9.5 Intersection LOS: A
Intersection Capacity Utilization 44.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	19	46	22	704	104	2	0	49	1
Future Volume (vph)	0	19	46	22	704	104	2	0	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00		1.00	0.95	0.95			1.00	
Frpb, ped/bikes		0.99		1.00	1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00			1.00	
Frt		0.85		1.00	1.00	1.00			0.86	
Flt Protected		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1476		1626	3252	3078			1015	
Flt Permitted		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1476		1626	3252	3078			1015	
Peak-hour factor, PHF	0.54	0.54	0.76	0.76	0.76	0.84	0.84	0.85	0.85	0.85
Adj. Flow (vph)	0	35	61	29	926	124	2	0	58	1
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3	0	90	926	126	0	0	59	0
Confl. Peds. (#/hr)		2	1							1
Heavy Vehicles (%)	8%	8%	11%	11%	11%	17%	17%	62%	62%	62%
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Actuated Green, G (s)		5.1		9.5	52.1	25.7			6.5	
Effective Green, g (s)		5.1		9.5	52.1	25.7			6.5	
Actuated g/C Ratio		0.08		0.14	0.77	0.38			0.10	
Clearance Time (s)		5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		111		229	2513	1173			97	
v/s Ratio Prot				0.06	c0.28	0.04			c0.06	
v/s Ratio Perm		c0.00								
v/c Ratio		0.02		0.39	0.37	0.11			0.61	
Uniform Delay, d1		28.8		26.3	2.4	13.5			29.2	
Progression Factor		1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.1		1.5	0.1	0.1			11.9	
Delay (s)		28.9		27.8	2.6	13.5			41.1	
Level of Service		C		C	A	B			D	
Approach Delay (s)	28.9				4.8	13.5		41.1		
Approach LOS	C				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	20.6
Intersection Capacity Utilization	44.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	99	787	765	163	9
Future Volume (vph)	7	99	787	765	163	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.869	0.850			0.992	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1440	1346	1736	3471	2753	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1440	1346	1736	3471	2753	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	61	68			5	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.77	0.77	0.83	0.83	0.81	0.81
Heavy Vehicles (%)	14%	14%	4%	4%	30%	30%
Adj. Flow (vph)	9	129	948	922	201	11
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	70	68	948	922	212	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	15.0	15.0	64.0	84.4	20.4	
Total Split (%)	15.1%	15.1%	64.4%	84.9%	20.5%	
Maximum Green (s)	10.0	10.0	58.8	79.2	15.2	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.8	10.8	50.6	71.1	13.0	
Actuated g/C Ratio	0.13	0.13	0.59	0.83	0.15	
v/c Ratio	0.30	0.30	0.93	0.32	0.50	
Control Delay	17.6	14.5	33.1	2.9	41.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	17.6	14.5	33.1	2.9	41.3	
LOS	B	B	C	A	D	
Approach Delay	16.1			18.2	41.3	
Approach LOS	B			B	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 85.7			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay: 20.3		Intersection LOS: C	
Intersection Capacity Utilization 73.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	99	787	765	163	9
Future Volume (vph)	7	99	787	765	163	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.87	0.85	1.00	1.00	0.99	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1440	1346	1736	3471	2753	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1440	1346	1736	3471	2753	
Peak-hour factor, PHF	0.77	0.77	0.83	0.83	0.81	0.81
Adj. Flow (vph)	9	129	948	922	201	11
RTOR Reduction (vph)	56	62	0	0	4	0
Lane Group Flow (vph)	14	6	948	922	208	0
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	14%	14%	4%	4%	30%	30%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	7.2	7.2	50.6	69.2	13.4	
Effective Green, g (s)	7.2	7.2	50.6	69.2	13.4	
Actuated g/C Ratio	0.08	0.08	0.58	0.80	0.15	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	119	111	1014	2773	425	
v/s Ratio Prot	c0.01		c0.55	0.27	c0.08	
v/s Ratio Perm		0.00				
v/c Ratio	0.12	0.05	0.93	0.33	0.49	
Uniform Delay, d1	36.8	36.6	16.5	2.4	33.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.1	15.0	0.1	0.9	
Delay (s)	37.1	36.7	31.5	2.5	34.4	
Level of Service	D	D	C	A	C	
Approach Delay (s)	36.9			17.2	34.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	86.6	Sum of lost time (s)	15.4
Intersection Capacity Utilization	73.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	95	127	362	121	91	157	1338	314	14	213	34
Future Volume (vph)	123	95	127	362	121	91	157	1338	314	14	213	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		525	325		75	200		250	400		0
Storage Lanes	1		1	2		1	0		1	1		0
Taper Length (ft)	75			100			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1410	1484	1262	3273	1776	1509	1671	3343	1495	1444	2818	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1408	1484	1262	3273	1776	1488	1669	3343	1495	1444	2818	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			133			247		15	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			713			574			1022	
Travel Time (s)		12.7			16.2			11.2			19.9	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	25%	25%	25%
Adj. Flow (vph)	143	110	148	407	136	102	174	1487	349	19	292	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	110	148	407	136	102	174	1487	349	19	339	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	30.0	30.0	13.1	13.1	13.1	13.1	32.1	32.1	14.1	32.1	
Total Split (s)	25.0	30.0	30.0	22.4	27.4	27.4	29.9	75.8	75.8	14.1	60.0	
Total Split (%)	17.6%	21.1%	21.1%	15.7%	19.3%	19.3%	21.0%	53.3%	53.3%	9.9%	42.2%	
Maximum Green (s)	20.0	25.0	25.0	17.3	22.3	22.3	24.8	70.7	70.7	9.0	54.9	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)		7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)		18.0	18.0					20.0	20.0		20.0	
Pedestrian Calls (#/hr)		1	1					0	0		1	
Act Effct Green (s)	20.7	14.6	14.6	18.5	12.5	12.5	15.2	51.8	51.8	9.6	35.5	
Actuated g/C Ratio	0.20	0.14	0.14	0.18	0.12	0.12	0.14	0.49	0.49	0.09	0.34	
v/c Ratio	0.52	0.54	0.49	0.71	0.65	0.35	0.72	0.91	0.41	0.15	0.35	
Control Delay	53.3	57.6	13.8	53.0	64.5	7.1	64.7	34.2	6.9	59.4	25.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	53.3	57.6	13.8	53.0	64.5	7.1	64.7	34.2	6.9	59.4	25.9	
LOS	D	E	B	D	E	A	E	C	A	E	C	
Approach Delay		39.9			48.1			32.1			27.7	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 142.3			
Actuated Cycle Length: 105.5			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 35.6		Intersection LOS: D	
Intersection Capacity Utilization 80.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	95	127	362	121	91	157	1338	314	14	213	34
Future Volume (veh/h)	123	95	127	362	121	91	157	1338	314	14	213	34
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		1.00	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1485	1485	1796	1796	1796	1781	1781	1781	1530	1530	1530
Adj Flow Rate, veh/h	143	110	148	407	136	102	174	1487	349	19	292	47
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.73	0.73	0.73
Percent Heavy Veh, %	28	28	28	7	7	7	8	8	8	25	25	25
Cap, veh/h	263	209	177	470	173	146	205	1573	701	55	954	152
Arrive On Green	0.19	0.14	0.14	0.14	0.10	0.10	0.12	0.46	0.46	0.04	0.38	0.38
Sat Flow, veh/h	1414	1485	1256	3319	1796	1518	1697	3385	1508	1457	2502	397
Grp Volume(v), veh/h	143	110	148	407	136	102	174	1487	349	19	168	171
Grp Sat Flow(s),veh/h/ln	1414	1485	1256	1659	1796	1518	1697	1692	1508	1457	1453	1447
Q Serve(g_s), s	8.6	6.5	10.8	11.3	7.0	5.1	9.5	39.5	15.2	1.2	7.6	7.8
Cycle Q Clear(g_c), s	8.6	6.5	10.8	11.3	7.0	5.1	9.5	39.5	15.2	1.2	7.6	7.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	263	209	177	470	173	146	205	1573	701	55	554	552
V/C Ratio(X)	0.54	0.53	0.84	0.87	0.79	0.70	0.85	0.95	0.50	0.35	0.30	0.31
Avail Cap(c_a), veh/h	300	394	333	610	425	359	447	2541	1132	139	847	843
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.7	37.6	39.4	39.5	41.6	29.0	40.6	24.1	17.6	44.2	20.4	20.4
Incr Delay (d2), s/veh	0.7	0.8	4.0	8.4	2.9	2.2	3.7	4.0	0.2	1.4	0.1	0.1
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	3.0	2.4	3.5	5.1	3.2	2.4	4.1	15.3	5.2	0.4	2.5	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.4	38.3	43.4	47.9	44.5	31.2	44.3	28.1	17.8	45.6	20.5	20.6
LnGrp LOS	D	D	D	D	D	C	D	C	B	D	C	C
Approach Vol, veh/h		401			645			2010			358	
Approach Delay, s/veh		39.1			44.6			27.7			21.9	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.5	41.0	22.5	14.2	8.6	48.9	18.4	18.2
Change Period (Y+Rc), s	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.0
Max Green Setting (Gmax), s	24.8	54.9	20.0	22.3	9.0	70.7	17.3	25.0
Max Q Clear Time (g_c+I1), s	11.5	9.8	10.6	9.0	3.2	41.5	13.3	12.8
Green Ext Time (p_c), s	0.0	0.3	0.0	0.1	0.0	2.2	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	31.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

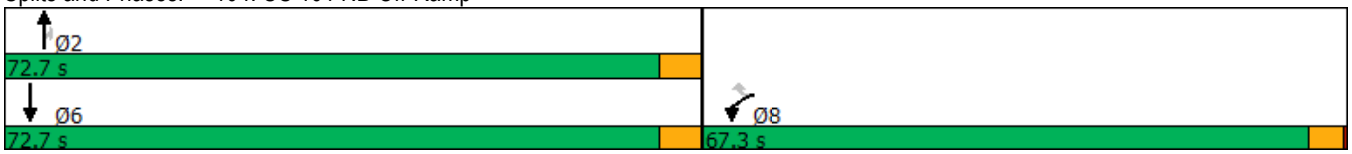


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1540	354	1455	1796	0	467
Future Volume (vph)	1540	354	1455	1796	0	467
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140	0	
Storage Lanes	2	1		2	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frt		0.850		0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	1583	4940	2707	0	4803
Flt Permitted	0.950					
Satd. Flow (perm)	3433	1583	4940	2707	0	4803
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		13		1116		
Link Speed (mph)	30		35			35
Link Distance (ft)	385		681			605
Travel Time (s)	8.8		13.3			11.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.89	0.89
Heavy Vehicles (%)	2%	2%	5%	5%	8%	8%
Adj. Flow (vph)	1674	385	1582	1952	0	525
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1674	385	1582	1952	0	525
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			12
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1		2
Detector Template	Left	Right	Thru	Right		Thru
Leading Detector (ft)	20	20	100	20		100
Trailing Detector (ft)	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20		6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8		2		
Detector Phase	8	8	2	2		6
Switch Phase						
Minimum Initial (s)	5.0	5.0	12.0	12.0		12.0
Minimum Split (s)	9.2	9.2	29.5	29.5		16.5
Total Split (s)	67.3	67.3	72.7	72.7		72.7
Total Split (%)	48.1%	48.1%	51.9%	51.9%		51.9%
Maximum Green (s)	63.1	63.1	68.2	68.2		68.2
Yellow Time (s)	3.7	3.7	4.5	4.5		4.5
All-Red Time (s)	0.5	0.5	0.0	0.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.2	4.2	4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.5	2.5		2.5
Recall Mode	None	None	Min	Min		Min
Walk Time (s)			4.0	4.0		
Flash Dont Walk (s)			21.0	21.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	63.1	63.1	68.2	68.2		68.2
Actuated g/C Ratio	0.45	0.45	0.49	0.49		0.49
v/c Ratio	1.08	0.53	0.66	1.03		0.22
Control Delay	85.5	30.2	28.7	45.2		21.0
Queue Delay	0.0	0.0	0.5	4.3		0.0
Total Delay	85.5	30.2	29.2	49.5		21.0
LOS	F	C	C	D		C
Approach Delay	75.2		40.4			21.0
Approach LOS	E		D			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay: 50.4		Intersection LOS: D	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 104: US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1540	354	1455	1796	0	467
Future Volume (veh/h)	1540	354	1455	1796	0	467
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	0	1781
Adj Flow Rate, veh/h	1674	385	1582	1952	0	525
Peak Hour Factor	0.92	0.92	0.92	0.92	0.89	0.89
Percent Heavy Veh, %	2	2	5	5	0	8
Cap, veh/h	1558	714	2428	1327	0	2369
Arrive On Green	0.45	0.45	0.49	0.49	0.00	0.49
Sat Flow, veh/h	3456	1585	5149	2723	0	5184
Grp Volume(v), veh/h	1674	385	1582	1952	0	525
Grp Sat Flow(s),veh/h/ln	1728	1585	1662	1362	0	1621
Q Serve(g_s), s	63.1	24.7	33.4	68.2	0.0	8.7
Cycle Q Clear(g_c), s	63.1	24.7	33.4	68.2	0.0	8.7
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1558	714	2428	1327	0	2369
V/C Ratio(X)	1.07	0.54	0.65	1.47	0.00	0.22
Avail Cap(c_a), veh/h	1558	714	2428	1327	0	2369
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	27.9	27.0	35.9	0.0	20.6
Incr Delay (d2), s/veh	45.8	0.4	0.6	216.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	36.1	9.5	13.1	61.6	0.0	3.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	84.3	28.3	27.5	252.2	0.0	20.7
LnGrp LOS	F	C	C	F	A	C
Approach Vol, veh/h	2059		3534			525
Approach Delay, s/veh	73.8		151.6			20.7
Approach LOS	E		F			C

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	72.7				72.7	67.3
Change Period (Y+Rc), s	4.5				4.5	4.2
Max Green Setting (Gmax), s	68.2				68.2	63.1
Max Q Clear Time (g_c+I1), s	70.2				10.7	65.1
Green Ext Time (p_c), s	0.0				3.2	0.0

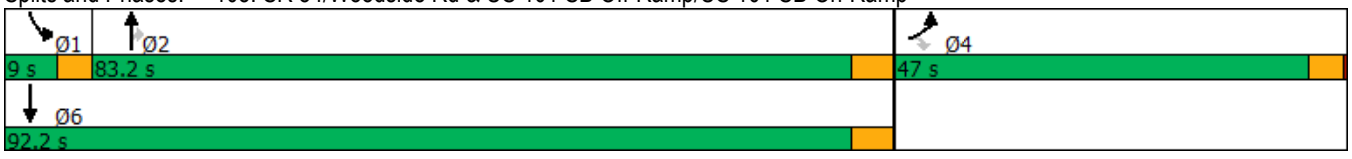
Intersection Summary	
HCM 6th Ctrl Delay	114.2
HCM 6th LOS	F

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	481	0	1133	0	0	0	0	2770	853	109	1898	0
Future Volume (vph)	481	0	1133	0	0	0	0	2770	853	109	1898	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	0		0	100		255	425		0
Storage Lanes	1		1	0		0	0		2	1		0
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	0.97	1.00	0.76	1.00	1.00	1.00	1.00	0.91	0.88	0.97	0.91	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3273	0	3441	0	0	0	0	4940	2707	3242	4803	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3273	0	3441	0	0	0	0	4940	2707	3242	4803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39						560			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1002			538			589			681	
Travel Time (s)		22.8			12.2			11.5			13.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	5%	5%	5%	8%	8%	8%
Adj. Flow (vph)	540	0	1273	0	0	0	0	3011	927	122	2133	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	540	0	1273	0	0	0	0	3011	927	122	2133	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1					2	1	1	2	
Detector Template	Left		Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20		20					100	20	20	100	
Trailing Detector (ft)	0		0					0	0	0	0	
Detector 1 Position(ft)	0		0					0	0	0	0	
Detector 1 Size(ft)	20		20					6	20	20	6	
Detector 1 Type	Cl+Ex		Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Detector Phase	4		4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0		5.0					12.0	12.0	4.0	12.0	
Minimum Split (s)	9.2		9.2					29.5	29.5	7.5	16.5	
Total Split (s)	47.0		47.0					83.2	83.2	9.0	92.2	
Total Split (%)	33.8%		33.8%					59.8%	59.8%	6.5%	66.2%	
Maximum Green (s)	42.8		42.8					78.7	78.7	5.5	87.7	
Yellow Time (s)	3.7		3.7					4.5	4.5	3.5	4.5	
All-Red Time (s)	0.5		0.5					0.0	0.0	0.0	0.0	
Lost Time Adjust (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.2		4.2					4.5	4.5	3.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	1.0		1.0					2.5	2.5	2.0	2.5	
Recall Mode	None		None					Min	Min	None	Min	
Walk Time (s)								4.0	4.0			
Flash Dont Walk (s)								21.0	21.0			
Pedestrian Calls (#/hr)								0	0			
Act Effct Green (s)	42.8		42.8					78.7	78.7	5.5	87.7	
Actuated g/C Ratio	0.31		0.31					0.57	0.57	0.04	0.63	
v/c Ratio	0.54		1.17					1.08	0.52	0.95	0.70	
Control Delay	42.4		129.2					72.6	7.6	133.4	18.8	
Queue Delay	0.0		0.0					9.6	0.3	0.0	1.3	
Total Delay	42.4		129.2					82.3	7.9	133.4	20.0	
LOS	D		F					F	A	F	C	
Approach Delay		103.3						64.8			26.2	
Approach LOS		F						E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 139.2			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 62.6		Intersection LOS: E	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 105: SR 84/Woodside Rd & US 101 SB Off-Ramp/US 101 SB On-Ramp



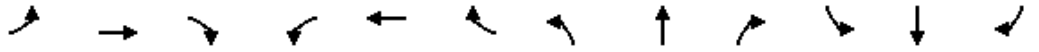
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	481	0	1133	0	0	0	0	2770	853	109	1898	0
Future Volume (veh/h)	481	0	1133	0	0	0	0	2770	853	109	1898	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1796	0	1796				0	1826	1826	1781	1781	0
Adj Flow Rate, veh/h	540	0	1273				0	3011	927	122	2133	0
Peak Hour Factor	0.89	0.89	0.89				0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	7	0	7				0	5	5	8	8	0
Cap, veh/h	1020	0	1067				0	2818	1540	130	3064	0
Arrive On Green	0.31	0.00	0.31				0.00	0.57	0.57	0.04	0.63	0.00
Sat Flow, veh/h	3319	0	3471				0	5149	2723	3291	5024	0
Grp Volume(v), veh/h	540	0	1273				0	3011	927	122	2133	0
Grp Sat Flow(s),veh/h/ln	1659	0	1157				0	1662	1362	1646	1621	0
Q Serve(g_s), s	18.7	0.0	42.8				0.0	78.7	31.2	5.1	40.2	0.0
Cycle Q Clear(g_c), s	18.7	0.0	42.8				0.0	78.7	31.2	5.1	40.2	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1020	0	1067				0	2818	1540	130	3064	0
V/C Ratio(X)	0.53	0.00	1.19				0.00	1.07	0.60	0.94	0.70	0.00
Avail Cap(c_a), veh/h	1020	0	1067				0	2818	1540	130	3064	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	39.9	0.0	48.2				0.0	30.2	19.9	66.7	17.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	96.2				0.0	38.7	0.6	59.4	0.7	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
%ile BackOfQ(50%),veh/ln	7.7	0.0	21.8				0.0	39.7	9.7	3.2	14.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.1	0.0	144.4				0.0	69.0	20.5	126.0	17.6	0.0
LnGrp LOS	D	A	F				A	F	C	F	B	A
Approach Vol, veh/h		1813						3938			2255	
Approach Delay, s/veh		113.4						57.6			23.5	
Approach LOS		F						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.0	83.2		47.0		92.2
Change Period (Y+Rc), s	3.5	4.5		* 4.2		4.5
Max Green Setting (Gmax), s	5.5	78.7		* 43		87.7
Max Q Clear Time (g_c+I1), s	7.1	80.7		44.8		42.2
Green Ext Time (p_c), s	0.0	0.0		0.0		22.7

Intersection Summary	
HCM 6th Ctrl Delay	60.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

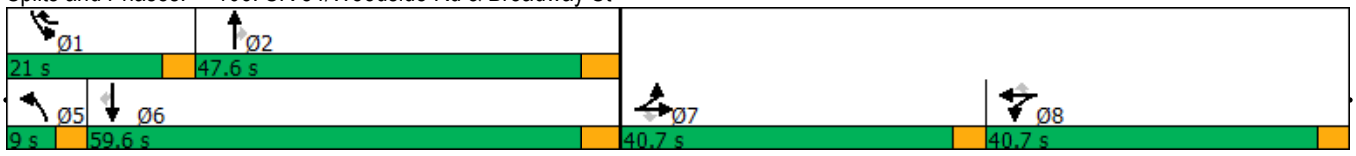


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	643	344	136	164	309	881	166	2099	81	863	1845	323
Future Volume (vph)	643	344	136	164	309	881	166	2099	81	863	1845	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		130	400		400	275		275	550		450
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	40			50			80			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.92	0.97								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1719	3438	1538	3242	4803	1495	3155	4673	1455
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1463	1660	3438	1538	3242	4803	1495	3155	4673	1455
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			38			84			345
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1179			2103			625			589	
Travel Time (s)		32.2			57.4			12.2			11.5	
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Adj. Flow (vph)	739	395	156	191	359	1024	180	2282	88	948	2027	355
Shared Lane Traffic (%)												
Lane Group Flow (vph)	739	395	156	191	359	1024	180	2282	88	948	2027	355
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Detector Phase	7	7	7	8	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	16.0	16.0	4.0	10.0	10.0
Minimum Split (s)	40.7	40.7	40.7	40.7	40.7	7.6	7.6	29.5	29.5	7.6	29.5	29.5
Total Split (s)	40.7	40.7	40.7	40.7	40.7	21.0	9.0	47.6	47.6	21.0	59.6	59.6
Total Split (%)	27.1%	27.1%	27.1%	27.1%	27.1%	14.0%	6.0%	31.7%	31.7%	14.0%	39.7%	39.7%
Maximum Green (s)	37.0	37.0	37.0	37.0	37.0	17.4	5.4	43.1	43.1	17.4	55.1	55.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Time Before Reduce (s)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	0.8	1.0	1.0
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	Max	Max	Max	Max	Max	None	None	Max	Max	None	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Flash Dont Walk (s)	33.0	33.0	33.0	33.0	33.0			21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)	49	49	49	0	0			0	0		0	0
Act Effct Green (s)	37.0	37.0	37.0	37.0	37.0	58.1	5.4	43.1	43.1	17.4	55.1	55.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.39	0.04	0.29	0.29	0.12	0.37	0.37
v/c Ratio	0.87	0.45	0.33	0.45	0.42	1.65	1.55	1.65	0.18	2.60	1.18	0.47
Control Delay	66.5	49.9	9.6	52.0	49.4	331.7	329.7	331.3	9.3	750.7	129.7	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Total Delay	66.5	49.9	9.6	52.0	49.4	331.7	329.7	331.3	9.3	750.7	130.0	5.9
LOS	E	D	A	D	D	F	F	F	A	F	F	A
Approach Delay		54.5			233.4			320.0			293.5	
Approach LOS		D			F			F			F	

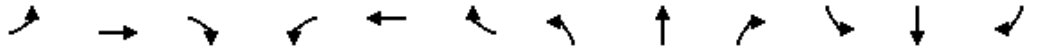
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.60			
Intersection Signal Delay: 255.1		Intersection LOS: F	
Intersection Capacity Utilization 123.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 106: SR 84/Woodside Rd & Broadway St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	643	344	136	164	309	881	166	2099	81	863	1845	323
Future Volume (vph)	643	344	136	164	309	881	166	2099	81	863	1845	323
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1463	1719	3438	1538	3242	4803	1495	3155	4673	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1463	1719	3438	1538	3242	4803	1495	3155	4673	1455
Peak-hour factor, PHF	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	739	395	156	191	359	1024	180	2282	88	948	2027	355
RTOR Reduction (vph)	0	0	111	0	0	24	0	0	60	0	0	218
Lane Group Flow (vph)	739	395	45	191	359	1000	180	2282	28	948	2027	137
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	37.0	37.0	37.0	37.0	37.0	54.4	5.4	43.1	43.1	17.4	55.1	55.1
Effective Green, g (s)	37.0	37.0	37.0	37.0	37.0	54.4	5.4	43.1	43.1	17.4	55.1	55.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.36	0.04	0.29	0.29	0.12	0.37	0.37
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Lane Grp Cap (vph)	846	872	360	424	848	557	116	1380	429	365	1716	534
v/s Ratio Prot	c0.22	0.11		0.11	0.10	c0.21	0.06	c0.48		c0.30	0.43	
v/s Ratio Perm			0.03			0.44			0.02			0.09
v/c Ratio	0.87	0.45	0.12	0.45	0.42	1.79	1.55	1.65	0.07	2.60	1.18	0.26
Uniform Delay, d1	54.3	47.9	43.9	47.9	47.5	47.8	72.3	53.4	38.8	66.3	47.5	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.1	1.7	0.7	3.4	1.5	364.9	286.1	297.4	0.3	726.7	87.9	1.2
Delay (s)	66.4	49.6	44.6	51.3	49.1	412.7	358.4	350.8	39.1	793.0	135.3	34.3
Level of Service	E	D	D	D	D	F	F	F	D	F	F	C
Approach Delay (s)		58.6			285.9			340.6			311.8	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	278.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.60		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	123.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	490	155	755	525	308	175	2459	688	281	1794	103
Future Volume (vph)	262	490	155	755	525	308	175	2459	688	281	1794	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.964				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3422	0	3400	1845	1568	1770	3539	1583	3273	3374	1509
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3422	0	3394	1845	1568	1770	3539	1583	3273	3374	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				40			34			59
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			1060			1475			776	
Travel Time (s)		19.2			24.1			28.7			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	7%	7%	7%
Adj. Flow (vph)	298	557	176	812	565	331	182	2561	717	323	2062	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	733	0	812	565	331	182	2561	717	323	2062	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	18.0	26.0		23.0	31.0	14.0	13.0	78.6	23.0	14.0	79.6	18.0
Total Split (%)	12.7%	18.4%		16.2%	21.9%	9.9%	9.2%	55.5%	16.2%	9.9%	56.2%	12.7%
Maximum Green (s)	14.8	21.8		19.8	26.8	10.8	9.8	73.6	19.8	10.8	74.6	14.8
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	14.8	23.7		19.8	28.7	43.8	9.8	73.6	98.4	10.8	74.6	94.4
Actuated g/C Ratio	0.10	0.17		0.14	0.20	0.31	0.07	0.51	0.69	0.08	0.52	0.66
v/c Ratio	1.62	1.25		1.73	1.53	0.66	1.52	1.41	0.65	1.31	1.18	0.12
Control Delay	342.6	173.0		373.8	290.4	44.7	310.7	218.5	16.2	216.8	118.1	5.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	342.6	173.0		373.8	290.4	44.7	310.7	218.5	16.2	216.8	118.1	5.3
LOS	F	F		F	F	D	F	F	B	F	F	A
Approach Delay		222.0			282.5			181.4			125.5	
Approach LOS		F			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 141.6			
Actuated Cycle Length: 143.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.73			
Intersection Signal Delay: 190.0		Intersection LOS: F	
Intersection Capacity Utilization 132.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	490	155	755	525	308	175	2459	688	281	1794	103
Future Volume (veh/h)	262	490	155	755	525	308	175	2459	688	281	1794	103
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1870	1870	1870	1796	1796	1796
Adj Flow Rate, veh/h	298	557	176	812	565	331	182	2561	717	323	2062	118
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	3	3	3	2	2	2	7	7	7
Cap, veh/h	188	409	129	479	351	417	123	1847	1046	253	1798	961
Arrive On Green	0.10	0.15	0.15	0.14	0.19	0.19	0.07	0.52	0.52	0.08	0.53	0.53
Sat Flow, veh/h	1795	2658	837	3428	1856	1568	1781	3554	1585	3319	3413	1522
Grp Volume(v), veh/h	298	375	358	812	565	331	182	2561	717	323	2062	118
Grp Sat Flow(s),veh/h/ln	1795	1791	1704	1714	1856	1568	1781	1777	1585	1659	1706	1522
Q Serve(g_s), s	14.8	21.8	21.8	19.8	26.8	26.8	9.8	73.6	39.8	10.8	74.6	4.4
Cycle Q Clear(g_c), s	14.8	21.8	21.8	19.8	26.8	26.8	9.8	73.6	39.8	10.8	74.6	4.4
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	276	262	479	351	417	123	1847	1046	253	1798	961
V/C Ratio(X)	1.59	1.36	1.37	1.69	1.61	0.79	1.48	1.39	0.69	1.28	1.15	0.12
Avail Cap(c_a), veh/h	188	276	262	479	351	417	123	1847	1046	253	1798	961
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	59.9	59.9	60.9	57.4	48.4	65.9	34.0	15.0	65.4	33.5	10.4
Incr Delay (d2), s/veh	288.4	183.1	187.4	321.1	286.9	9.4	252.7	177.3	1.6	151.2	73.1	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	21.8	23.9	23.1	30.0	40.5	12.0	13.1	75.9	14.2	9.9	47.8	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	351.8	243.0	247.3	382.0	344.3	57.8	318.6	211.3	16.5	216.6	106.6	10.5
LnGrp LOS	F	F	F	F	F	E	F	F	B	F	F	B
Approach Vol, veh/h		1031			1708			3460			2503	
Approach Delay, s/veh		275.9			306.7			176.6			116.3	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	78.6	23.0	26.0	13.0	79.6	18.0	31.0
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	10.8	73.6	19.8	* 22	9.8	74.6	14.8	* 27
Max Q Clear Time (g_c+I1), s	12.8	75.6	21.8	23.8	11.8	76.6	16.8	28.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	196.6
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	13	13	227	11	11	15	14	380	12	12	0
Future Volume (vph)	0	13	13	227	11	11	15	14	380	12	12	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.994			0.875				
Flt Protected					0.956			0.998		0.950		
Satd. Flow (prot)	0	1671	0	0	1720	0	0	1580	0	1703	1792	0
Flt Permitted					0.956			0.998		0.950		
Satd. Flow (perm)	0	1671	0	0	1720	0	0	1580	0	1703	1792	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)									5	5		
Confl. Bikes (#/hr)			16			11			33			15
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Adj. Flow (vph)	0	15	15	255	12	12	17	16	432	14	14	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	279	0	0	465	0	14	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

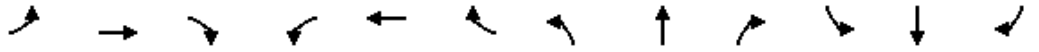
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.4%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	12.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	13	13	227	11	11	15	14	380	12	12	0
Future Vol, veh/h	0	13	13	227	11	11	15	14	380	12	12	0
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles, %	6	6	6	5	5	5	5	5	5	6	6	6
Mvmt Flow	0	15	15	255	12	12	17	16	432	14	14	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.6	12.1	13.2	9.1
HCM LOS	A	B	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	91%	100%	0%
Vol Thru, %	3%	50%	4%	0%	100%
Vol Right, %	93%	50%	4%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	409	26	249	12	12
LT Vol	15	0	227	12	0
Through Vol	14	13	11	0	12
RT Vol	380	13	11	0	0
Lane Flow Rate	465	31	280	14	14
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.57	0.045	0.41	0.025	0.023
Departure Headway (Hd)	4.416	5.344	5.282	6.403	5.896
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	813	674	674	555	602
Service Time	2.466	3.344	3.372	4.195	3.687
HCM Lane V/C Ratio	0.572	0.046	0.415	0.025	0.023
HCM Control Delay	13.2	8.6	12.1	9.4	8.8
HCM Lane LOS	B	A	B	A	A
HCM 95th-tile Q	3.7	0.1	2	0.1	0.1

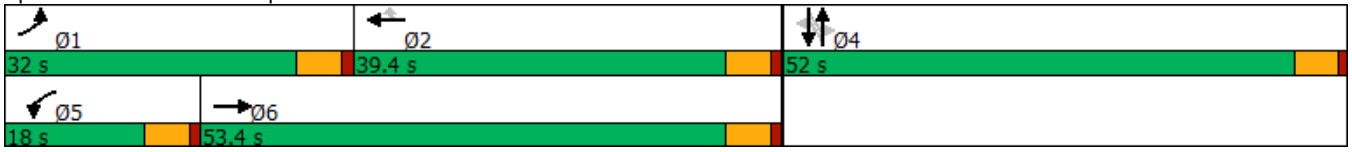


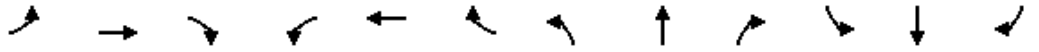
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	535	153	98	693	49	167	199	241	32	98	149
Future Volume (vph)	243	535	153	98	693	49	167	199	241	32	98	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.98		0.97	0.98	0.97		1.00	0.97	
Frt		0.967				0.850		0.918			0.909	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3302	0	1719	3438	1538	1719	1613	0	1687	1565	0
Flt Permitted	0.950			0.950			0.477			0.213		
Satd. Flow (perm)	1732	3302	0	1691	3438	1498	843	1613	0	377	1565	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35				110		57			72	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1341			558			661	
Travel Time (s)		32.0			30.5			15.2			18.0	
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Peak Hour Factor	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	300	660	189	105	745	53	194	231	280	36	111	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	300	849	0	105	745	53	194	511	0	36	280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	32.0	53.4		18.0	39.4	39.4	52.0	52.0		52.0	52.0	
Total Split (%)	25.9%	43.3%		14.6%	31.9%	31.9%	42.1%	42.1%		42.1%	42.1%	
Maximum Green (s)	26.8	48.2		12.8	34.2	34.2	47.0	47.0		47.0	47.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		24			3	3	51	51		51	51	
Act Effct Green (s)	22.1	43.2		11.3	27.8	27.8	39.0	39.0		39.0	39.0	
Actuated g/C Ratio	0.21	0.41		0.11	0.26	0.26	0.37	0.37		0.37	0.37	
v/c Ratio	0.82	0.62		0.57	0.82	0.11	0.62	0.81		0.26	0.45	
Control Delay	61.7	28.4		63.5	46.3	0.5	39.1	38.6		31.5	21.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	61.7	28.4		63.5	46.3	0.5	39.1	38.6		31.5	21.8	
LOS	E	C		E	D	A	D	D		C	C	
Approach Delay		37.1			45.6			38.7			22.9	
Approach LOS		D			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 105.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 38.5		Intersection LOS: D	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	535	153	98	693	49	167	199	241	32	98	149
Future Volume (vph)	243	535	153	98	693	49	167	199	241	32	98	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.97		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.92		1.00	0.91	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3306		1719	3438	1499	1684	1613		1683	1571	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.48	1.00		0.21	1.00	
Satd. Flow (perm)	1736	3306		1719	3438	1499	846	1613		377	1571	
Peak-hour factor, PHF	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Adj. Flow (vph)	300	660	189	105	745	53	194	231	280	36	111	169
RTOR Reduction (vph)	0	21	0	0	0	38	0	36	0	0	46	0
Lane Group Flow (vph)	300	828	0	105	745	15	194	475	0	36	234	0
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	22.1	43.2		8.4	29.5	29.5	39.0	39.0		39.0	39.0	
Effective Green, g (s)	22.1	43.2		8.4	29.5	29.5	39.0	39.0		39.0	39.0	
Actuated g/C Ratio	0.21	0.41		0.08	0.28	0.28	0.37	0.37		0.37	0.37	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	361	1347		136	956	417	311	593		138	578	
v/s Ratio Prot	c0.17	0.25		0.06	c0.22			c0.29			0.15	
v/s Ratio Perm						0.01	0.23			0.10		
v/c Ratio	0.83	0.61		0.77	0.78	0.04	0.62	0.80		0.26	0.41	
Uniform Delay, d1	40.2	24.8		47.9	35.2	27.9	27.5	30.0		23.4	24.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	14.3	0.6		21.5	3.7	0.0	3.4	7.4		0.7	0.3	
Delay (s)	54.5	25.4		69.4	39.0	27.9	30.8	37.5		24.2	25.2	
Level of Service	D	C		E	D	C	C	D		C	C	
Approach Delay (s)		33.0			41.9			35.6			25.1	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

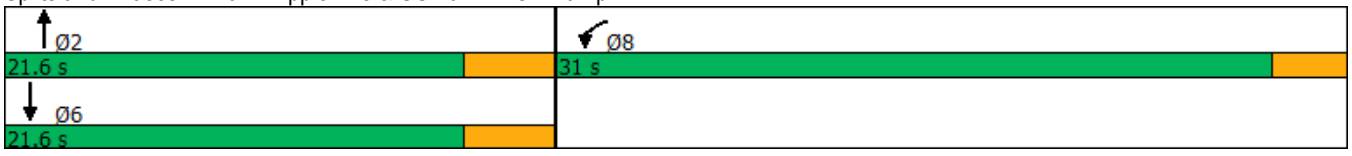


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1092	95	275	0	0	449
Future Volume (vph)	1092	95	275	0	0	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.988					
Flt Protected	0.956					
Satd. Flow (prot)	3348	0	1881	0	0	3539
Flt Permitted	0.956					
Satd. Flow (perm)	3348	0	1881	0	0	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.85	0.85	0.89	0.89	0.94	0.94
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Adj. Flow (vph)	1285	112	309	0	0	478
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1397	0	309	0	0	478
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	31.0		21.6			21.6
Total Split (%)	58.9%		41.1%			41.1%
Maximum Green (s)	28.0		18.0			18.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			7			
Act Effct Green (s)	17.9		10.0			10.0
Actuated g/C Ratio	0.51		0.28			0.28
v/c Ratio	0.81		0.58			0.47
Control Delay	12.0		16.7			12.9
Queue Delay	0.0		0.0			0.0
Total Delay	12.0		16.7			12.9
LOS	B		B			B
Approach Delay	12.0		16.7			12.9
Approach LOS	B		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 35.2			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 12.8		Intersection LOS: B	
Intersection Capacity Utilization 126.0%		ICU Level of Service H	
Analysis Period (min) 15			

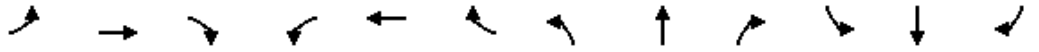
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1092	95	275	0	0	449
Future Volume (vph)	1092	95	275	0	0	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3348		1881			3539
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3348		1881			3539
Peak-hour factor, PHF	0.85	0.85	0.89	0.89	0.94	0.94
Adj. Flow (vph)	1285	112	309	0	0	478
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	1384	0	309	0	0	478
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	17.9		10.0			10.0
Effective Green, g (s)	17.9		10.0			10.0
Actuated g/C Ratio	0.52		0.29			0.29
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1737		545			1025
v/s Ratio Prot	c0.41		c0.16			0.14
v/s Ratio Perm						
v/c Ratio	0.80		0.57			0.47
Uniform Delay, d1	6.8		10.4			10.1
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.5		0.8			0.1
Delay (s)	9.3		11.2			10.2
Level of Service	A		B			B
Approach Delay (s)	9.3		11.2			10.2
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	34.5	Sum of lost time (s)	6.6
Intersection Capacity Utilization	126.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

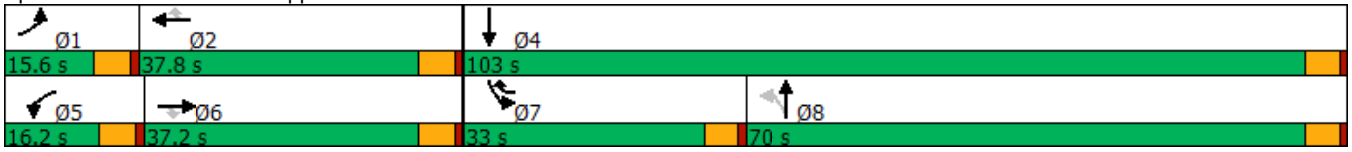


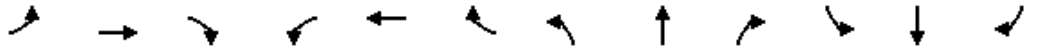
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	1193	234	158	18	1026	34	1787	181	342	1009	18
Future Volume (vph)	117	1193	234	158	18	1026	34	1787	181	342	1009	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor			0.95	0.99				1.00		1.00	1.00	
Frt			0.850			0.850		0.986			0.997	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3433	5085	1583	3400	1845	3575	0	4952	0	1719	3424	0
Flt Permitted	0.950			0.950				0.871		0.950		
Satd. Flow (perm)	3433	5085	1503	3362	1845	3575	0	4317	0	1719	3424	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			85					13			2	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)			28	28			20		4	4		20
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	5%	5%	5%
Adj. Flow (vph)	126	1283	252	178	20	1153	37	1942	197	398	1173	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1283	252	178	20	1153	0	2176	0	398	1194	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	15.6	37.2	37.2	16.2	37.8	33.0	70.0	70.0		33.0	103.0	
Total Split (%)	10.0%	23.8%	23.8%	10.4%	24.2%	21.1%	44.8%	44.8%		21.1%	65.9%	
Maximum Green (s)	10.4	32.0	32.0	11.0	32.6	28.0	65.0	65.0		28.0	98.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		28	28				4	4			20	
Act Effct Green (s)	9.8	32.6	32.6	11.0	33.8	67.0		65.0		28.0	98.0	
Actuated g/C Ratio	0.06	0.21	0.21	0.07	0.22	0.43		0.41		0.18	0.62	
v/c Ratio	0.59	1.21	0.66	0.75	0.05	0.76		1.21		1.30	0.56	
Control Delay	83.3	156.6	46.7	90.8	49.7	42.1		140.8		206.1	18.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	83.3	156.6	46.7	90.8	49.7	42.1		140.8		206.1	18.3	
LOS	F	F	D	F	D	D		F		F	B	
Approach Delay		134.4			48.6			140.8			65.2	
Approach LOS		F			D			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 157			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 103.1		Intersection LOS: F	
Intersection Capacity Utilization 119.1%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





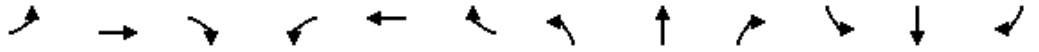
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	1193	234	158	18	1026	34	1787	181	342	1009	18
Future Volume (veh/h)	117	1193	234	158	18	1026	34	1787	181	342	1009	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.94	1.00		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	126	1283	252	178	20	1153	37	1942	197	398	1173	21
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	5	5	5
Cap, veh/h	198	1045	311	241	404	1372	48	1792	180	311	2184	39
Arrive On Green	0.06	0.20	0.20	0.07	0.22	0.22	0.42	0.42	0.42	0.18	0.63	0.63
Sat Flow, veh/h	3456	5106	1520	3428	1856	3355	58	4312	434	1739	3485	62
Grp Volume(v), veh/h	126	1283	252	178	20	1153	770	687	719	398	584	610
Grp Sat Flow(s),veh/h/ln	1728	1702	1520	1714	1856	1118	1682	1537	1586	1739	1735	1813
Q Serve(g_s), s	5.6	32.0	24.7	8.0	1.3	34.0	48.2	65.0	65.0	28.0	29.6	29.6
Cycle Q Clear(g_c), s	5.6	32.0	24.7	8.0	1.3	34.0	65.0	65.0	65.0	28.0	29.6	29.6
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.27	1.00		0.03
Lane Grp Cap(c), veh/h	198	1045	311	241	404	1372	723	639	659	311	1087	1136
V/C Ratio(X)	0.64	1.23	0.81	0.74	0.05	0.84	1.06	1.08	1.09	1.28	0.54	0.54
Avail Cap(c_a), veh/h	230	1045	311	241	404	1372	723	639	659	311	1087	1136
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.1	62.2	59.3	71.3	48.4	43.2	45.9	45.7	45.7	64.2	16.4	16.4
Incr Delay (d2), s/veh	2.6	111.2	13.8	10.1	0.0	4.6	52.0	57.6	62.6	147.8	0.3	0.3
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	2.6	24.6	10.8	3.9	0.6	14.3	39.2	35.0	37.1	25.2	11.8	12.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.8	173.4	73.2	81.4	48.4	47.8	97.9	103.3	108.3	212.0	16.7	16.7
LnGrp LOS	E	F	E	F	D	D	F	F	F	F	B	B
Approach Vol, veh/h		1661			1351			2176			1592	
Approach Delay, s/veh		150.7			52.3			103.1			65.5	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	39.2		103.0	16.2	37.2	33.0	70.0				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	10.4	32.6		98.0	11.0	32.0	28.0	65.0				
Max Q Clear Time (g_c+I1), s	7.6	36.0		31.6	10.0	34.0	30.0	67.0				
Green Ext Time (p_c), s	0.1	0.0		6.3	0.0	0.0	0.0	0.0				

Intersection Summary			
HCM 6th Ctrl Delay		95.8	
HCM 6th LOS		F	

Notes

User approved pedestrian interval to be less than phase max green.



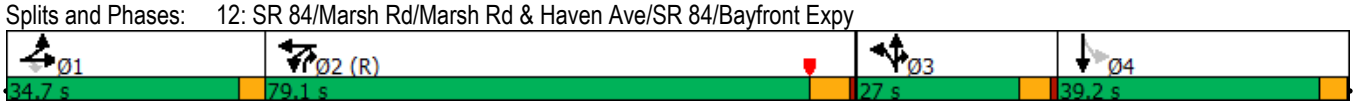
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	127	333	2879	217	15	246	38	1552	9	22	10
Future Volume (vph)	6	127	333	2879	217	15	246	38	1552	9	22	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00						0.99	
Frt			0.850		0.990				0.850		0.964	
Flt Protected		0.998		0.950				0.958			0.989	
Satd. Flow (prot)	0	3567	1599	4942	1819	0	0	1767	3575	0	3424	0
Flt Permitted		0.998		0.950				0.958			0.847	
Satd. Flow (perm)	0	3563	1577	4930	1819	0	0	1767	3575	0	2924	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			401		2						14	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	7	153	401	3199	241	17	280	43	1764	13	31	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	401	3199	258	0	0	323	1764	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

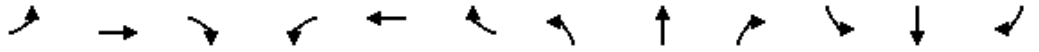
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	34.7	34.7	34.7	79.1	79.1		27.0	27.0		39.2	39.2	
Total Split (%)	19.3%	19.3%	19.3%	43.9%	43.9%		15.0%	15.0%		21.8%	21.8%	
Maximum Green (s)	31.0	31.0	31.0	72.9	72.9		21.9	21.9		35.0	35.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	8	8					12	12	
Act Effct Green (s)		15.3	15.3	106.1	106.1			21.9	133.1		20.6	
Actuated g/C Ratio		0.08	0.08	0.59	0.59			0.12	0.74		0.11	
v/c Ratio		0.53	0.80	1.10	0.24			1.51	0.67		0.17	
Control Delay		83.8	18.5	84.1	22.9			286.6	20.0		51.5	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.6		0.0	
Total Delay		83.8	18.5	84.1	22.9			286.6	20.6		51.5	
LOS		F	B	F	C			F	C		D	
Approach Delay		37.1			79.5			61.8			51.5	
Approach LOS		D			E			E			D	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 180
Offset: 17 (9%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.51
Intersection Signal Delay: 69.4 Intersection LOS: E
Intersection Capacity Utilization 96.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	127	333	2879	217	15	246	38	1552	9	22	10
Future Volume (vph)	6	127	333	2879	217	15	246	38	1552	9	22	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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	0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00		0.99	
Satd. Flow (prot)		3566	1577	4942	1820			1768	3575		3412	
Flt Permitted		1.00	1.00	0.95	1.00			0.96	1.00		0.85	
Satd. Flow (perm)		3566	1577	4942	1820			1768	3575		2923	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Adj. Flow (vph)	7	153	401	3199	241	17	280	43	1764	13	31	14
RTOR Reduction (vph)	0	0	367	0	1	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	160	34	3199	257	0	0	323	1764	0	45	0
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		15.3	15.3	105.2	105.2			21.9	133.3		18.4	
Effective Green, g (s)		15.3	15.3	105.2	105.2			21.9	133.3		18.4	
Actuated g/C Ratio		0.09	0.09	0.58	0.58			0.12	0.74		0.10	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		303	134	2888	1063			215	2647		298	
v/s Ratio Prot		c0.04		c0.65	0.14			c0.18	0.49			
v/s Ratio Perm			0.02								c0.02	
v/c Ratio		0.53	0.25	1.11	0.24			1.50	0.67		0.15	
Uniform Delay, d1		78.9	77.0	37.4	18.1			79.0	12.0		73.7	
Progression Factor		1.00	1.00	1.00	1.00			1.03	1.14		1.00	
Incremental Delay, d2		0.8	0.4	54.2	0.5			234.3	0.2		0.1	
Delay (s)		79.7	77.4	91.6	18.6			315.9	13.8		73.8	
Level of Service		E	E	F	B			F	B		E	
Approach Delay (s)		78.0			86.1			60.6			73.8	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	76.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

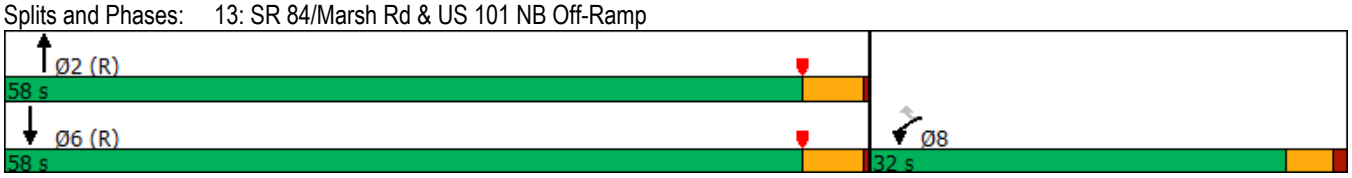


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1031	552	1894	0	0	1192
Future Volume (vph)	1031	552	1894	0	0	1192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		14				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	1074	575	2104	0	0	1255
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1074	575	2104	0	0	1255
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	32.0	32.0	58.0			58.0
Total Split (%)	35.6%	35.6%	64.4%			64.4%
Maximum Green (s)	27.8	27.8	53.4			53.4
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	27.8	27.8	53.4			53.4
Actuated g/C Ratio	0.31	0.31	0.59			0.59
v/c Ratio	1.04	0.68	1.01			0.60
Control Delay	71.7	31.4	31.3			16.6
Queue Delay	0.0	0.7	0.1			0.0
Total Delay	71.7	32.1	31.4			16.6
LOS	E	C	C			B
Approach Delay	57.9		31.4			16.6
Approach LOS	E		C			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 64 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay: 36.4		Intersection LOS: D	
Intersection Capacity Utilization 142.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1031	552	1894	0	0	1192
Future Volume (veh/h)	1031	552	1894	0	0	1192
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	1074	575	2104	0	0	1255
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	1042	841	2092	0	0	2092
Arrive On Green	0.31	0.31	0.59	0.00	0.00	0.59
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	1074	575	2104	0	0	1255
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	27.8	16.6	53.4	0.0	0.0	20.2
Cycle Q Clear(g_c), s	27.8	16.6	53.4	0.0	0.0	20.2
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1042	841	2092	0	0	2092
V/C Ratio(X)	1.03	0.68	1.01	0.00	0.00	0.60
Avail Cap(c_a), veh/h	1042	841	2092	0	0	2092
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	31.1	27.2	18.3	0.0	0.0	11.6
Incr Delay (d2), s/veh	36.0	1.9	21.1	0.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	16.1	5.5	24.3	0.0	0.0	7.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	67.1	29.2	39.4	0.0	0.0	12.8
LnGrp LOS	F	C	F	A	A	B
Approach Vol, veh/h	1649		2104			1255
Approach Delay, s/veh	53.9		39.4			12.8
Approach LOS	D		D			B

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		58.0			58.0	32.0
Change Period (Y+Rc), s		4.6			4.6	4.2
Max Green Setting (Gmax), s		53.4			53.4	27.8
Max Q Clear Time (g_c+I1), s		55.4			22.2	29.8
Green Ext Time (p_c), s		0.0			7.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.5
HCM 6th LOS	D

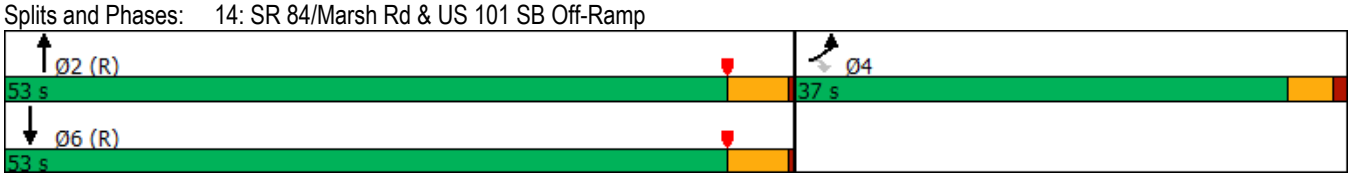


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1318	652	0	1111	2054	0
Future Volume (vph)	1318	652	0	1111	2054	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		3				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	1345	665	0	1157	2257	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1345	665	0	1157	2257	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	37.0	37.0		53.0	53.0	
Total Split (%)	41.1%	41.1%		58.9%	58.9%	
Maximum Green (s)	32.9	32.9		48.4	48.4	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	32.9	32.9		48.4	48.4	
Actuated g/C Ratio	0.37	0.37		0.54	0.54	
v/c Ratio	1.10	1.18		0.60	1.20	
Control Delay	87.9	126.6		15.9	120.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	87.9	126.6		15.9	120.4	
LOS	F	F		B	F	
Approach Delay	100.7			15.9	120.4	
Approach LOS	F			B	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 74 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 90.8		Intersection LOS: F	
Intersection Capacity Utilization 138.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1318	652	0	1111	2054	0
Future Volume (veh/h)	1318	652	0	1111	2054	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	1345	665	0	1157	2257	0
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1233	566	0	1926	1896	0
Arrive On Green	0.37	0.37	0.00	0.54	0.54	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	1345	665	0	1157	2257	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	32.9	32.9	0.0	19.8	48.4	0.0
Cycle Q Clear(g_c), s	32.9	32.9	0.0	19.8	48.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1233	566	0	1926	1896	0
V/C Ratio(X)	1.09	1.18	0.00	0.60	1.19	0.00
Avail Cap(c_a), veh/h	1233	566	0	1926	1896	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	28.5	0.0	14.2	20.8	0.0
Incr Delay (d2), s/veh	54.0	96.5	0.0	1.4	91.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.9	26.7	0.0	7.6	41.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	82.6	125.0	0.0	15.6	112.1	0.0
LnGrp LOS	F	F	A	B	F	A
Approach Vol, veh/h	2010			1157	2257	
Approach Delay, s/veh	96.6			15.6	112.1	
Approach LOS	F			B	F	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		53.0		37.0		53.0
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		48.4		32.9		48.4
Max Q Clear Time (g_c+I1), s		21.8		34.9		50.4
Green Ext Time (p_c), s		3.3		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay	85.8	
HCM 6th LOS	F	

Cumulative No Project PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	142	348	15	46	250
Future Volume (vph)	6	142	348	15	46	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.871					0.850
Flt Protected				0.954	0.950	
Satd. Flow (prot)	1591	0	0	1795	1736	1553
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	1591	0	0	1795	1736	1553
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles (%)	4%	4%	1%	1%	4%	4%
Adj. Flow (vph)	7	161	497	21	84	455
Shared Lane Traffic (%)						
Lane Group Flow (vph)	168	0	0	518	84	455
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	25.1
Intersection LOS	D

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	142	348	15	46	250
Future Vol, veh/h	6	142	348	15	46	250
Peak Hour Factor	0.88	0.88	0.70	0.70	0.55	0.55
Heavy Vehicles, %	4	4	1	1	4	4
Mvmt Flow	7	161	497	21	84	455
Number of Lanes	1	0	0	1	1	1

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	2	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	2	0	1
HCM Control Delay	11.1	33.5	21.3
HCM LOS	B	D	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1
Vol Left, %	100%	0%	0%	96%
Vol Thru, %	0%	0%	4%	4%
Vol Right, %	0%	100%	96%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	46	250	148	363
LT Vol	46	0	0	348
Through Vol	0	0	6	15
RT Vol	0	250	142	0
Lane Flow Rate	84	455	168	519
Geometry Grp	5	5	2	2
Degree of Util (X)	0.164	0.736	0.272	0.849
Departure Headway (Hd)	7.053	5.833	5.82	5.892
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	507	618	612	612
Service Time	4.82	3.599	3.904	3.952
HCM Lane V/C Ratio	0.166	0.736	0.275	0.848
HCM Control Delay	11.2	23.2	11.1	33.5
HCM Lane LOS	B	C	B	D
HCM 95th-tile Q	0.6	6.4	1.1	9.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	6	296	487	3
Future Volume (vph)	0	0	6	296	487	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1736	3471	3536	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1736	3471	3536	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.56	0.56	0.74	0.74
Heavy Vehicles (%)	2%	2%	4%	4%	2%	2%
Adj. Flow (vph)	0	0	11	529	658	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	11	529	662	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	6	296	487	3
Future Vol, veh/h	0	0	6	296	487	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	56	56	74	74
Heavy Vehicles, %	2	2	4	4	2	2
Mvmt Flow	0	0	11	529	658	4

Major/Minor	Minor2		Major2	
Conflicting Flow All	660	660	-	0
Stage 1	660	660	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.88	6.58	-	-
Critical Hdwy Stg 1	5.88	5.58	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.54	4.04	-	-
Pot Cap-1 Maneuver	392	~ 378	-	-
Stage 1	470	~ 454	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	392	0	-	-
Mov Cap-2 Maneuver	392	0	-	-
Stage 1	470	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	392	-	-	-	-
HCM Lane V/C Ratio	0.027	-	-	-	-
HCM Control Delay (s)	14.4	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	58	148	0
Future Volume (vph)	0	0	0	58	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	0	1845	1845	1827	0
Flt Permitted						
Satd. Flow (perm)	1863	0	1845	1845	1827	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			485	412	
Travel Time (s)	10.1			11.0	9.4	
Peak Hour Factor	0.92	0.92	0.59	0.59	0.88	0.88
Heavy Vehicles (%)	2%	2%	3%	3%	4%	4%
Adj. Flow (vph)	0	0	0	98	168	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	98	168	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	11.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	58	148	0
Future Vol, veh/h	0	0	0	58	148	0
Peak Hour Factor	0.92	0.92	0.59	0.59	0.88	0.88
Heavy Vehicles, %	2	2	3	3	4	4
Mvmt Flow	0	0	0	98	168	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	0	8	8.2
HCM LOS	-	A	A

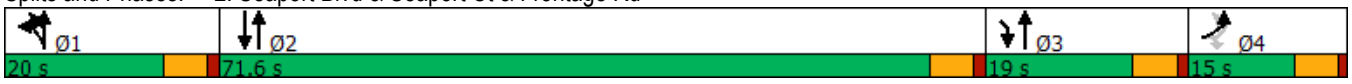
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	0%	0%	0%	0%
Vol Thru, %	100%	100%	100%	100%
Vol Right, %	0%	0%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	0	58	0	148
LT Vol	0	0	0	0
Through Vol	0	58	0	148
RT Vol	0	0	0	0
Lane Flow Rate	0	98	0	168
Geometry Grp	5	5	2	4a
Degree of Util (X)	0	0.126	0	0.193
Departure Headway (Hd)	4.631	4.631	4.541	4.141
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	0	775	0	864
Service Time	2.355	2.355	2.541	2.173
HCM Lane V/C Ratio	0	0.126	0	0.194
HCM Control Delay	7.4	8	7.5	8.2
HCM Lane LOS	N	A	N	A
HCM 95th-tile Q	0	0.4	0	0.7

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	69	49	24	302	487	0	0	70	3
Future Volume (vph)	1	0	69	49	24	302	487	0	0	70	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	60		265			0	0	0	
Storage Lanes		1	1		1			0	0	1	
Taper Length (ft)		25			50				25		
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.865	
Flt Protected		0.950			0.950						
Satd. Flow (prot)	0	1736	1553	0	1671	3343	3539	0	0	1522	0
Flt Permitted		0.950			0.950						
Satd. Flow (perm)	0	1736	1553	0	1671	3343	3539	0	0	1522	0
Right Turn on Red			Yes								No
Satd. Flow (RTOR)			109								
Link Speed (mph)		30				35	35		30		
Link Distance (ft)		369				675	1774		538		
Travel Time (s)		8.4				13.1	34.6		12.2		
Peak Hour Factor	0.78	0.78	0.78	0.71	0.71	0.71	0.75	0.75	0.82	0.82	0.82
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	2%	2%	8%	8%	8%
Adj. Flow (vph)	1	0	88	69	34	425	649	0	0	85	4
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1	88	0	103	425	649	0	0	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)		12				12	12		0		
Link Offset(ft)		0				0	0		0		
Crosswalk Width(ft)		16				16	16		16		
Two way Left Turn Lane											
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	1	2	2			1	
Detector Template	Left	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel											
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)						94	94				
Detector 2 Size(ft)						6	6				
Detector 2 Type						Cl+Ex	Cl+Ex				
Detector 2 Channel											
Detector 2 Extend (s)						0.0	0.0				
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Permitted Phases	4		4								
Detector Phase	4	4	4	1	1	2	2			3	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	15.0	15.0	15.0	20.0	20.0		71.6			19.0	
Total Split (%)	11.9%	11.9%	11.9%	15.9%	15.9%		57.0%			15.1%	
Maximum Green (s)	10.0	10.0	10.0	14.8	14.8		66.4			13.8	
Yellow Time (s)	4.0	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0	24.0								
Pedestrian Calls (#/hr)	0	0	0								
Act Effct Green (s)		11.2	11.2		12.2	60.6	35.9			12.5	
Actuated g/C Ratio		0.15	0.15		0.16	0.81	0.48			0.17	
v/c Ratio		0.00	0.27		0.38	0.16	0.38			0.35	
Control Delay		37.0	8.0		38.9	2.7	20.6			39.1	
Queue Delay		0.0	0.0		0.0	0.0	0.0			0.0	
Total Delay		37.0	8.0		38.9	2.7	20.6			39.1	
LOS		D	A		D	A	C			D	
Approach Delay		8.3				9.7	20.6		39.1		
Approach LOS		A				A	C		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 75.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 43.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	69	49	24	302	487	0	0	70	3
Future Volume (vph)	1	0	69	49	24	302	487	0	0	70	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00	1.00		1.00	0.95	0.95			1.00	
Frt		1.00	0.85		1.00	1.00	1.00			0.86	
Flt Protected		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1736	1553		1671	3343	3539			1522	
Flt Permitted		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1736	1553		1671	3343	3539			1522	
Peak-hour factor, PHF	0.78	0.78	0.78	0.71	0.71	0.71	0.75	0.75	0.82	0.82	0.82
Adj. Flow (vph)	1	0	88	69	34	425	649	0	0	85	4
RTOR Reduction (vph)	0	0	80	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	8	0	103	425	649	0	0	89	0
Heavy Vehicles (%)	4%	4%	4%	8%	8%	8%	2%	2%	8%	8%	8%
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	
Permitted Phases	4		4								
Actuated Green, G (s)		7.2	7.2		8.6	61.4	33.9			8.5	
Effective Green, g (s)		7.2	7.2		8.6	61.4	33.9			8.5	
Actuated g/C Ratio		0.09	0.09		0.11	0.78	0.43			0.11	
Clearance Time (s)		5.0	5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0	3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		158	141		182	2604	1522			164	
v/s Ratio Prot					c0.06	0.13	c0.18			c0.06	
v/s Ratio Perm		0.00	c0.01								
v/c Ratio		0.01	0.06		0.57	0.16	0.43			0.54	
Uniform Delay, d1		32.5	32.7		33.3	2.2	15.7			33.3	
Progression Factor		1.00	1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.0	0.2		4.8	0.0	0.3			4.5	
Delay (s)		32.6	32.9		38.2	2.2	15.9			37.8	
Level of Service		C	C		D	A	B			D	
Approach Delay (s)		32.9				9.2	15.9		37.8		
Approach LOS		C				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	78.8	Sum of lost time (s)	20.6
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	679	166	364	620	6
Future Volume (vph)	12	679	166	364	620	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.855	0.850			0.999	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1589	1504	1687	3374	3535	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1589	1504	1687	3374	3535	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	356	356			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.81	0.81	0.71	0.71	0.74	0.74
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%
Adj. Flow (vph)	15	838	234	513	838	8
Shared Lane Traffic (%)		49%				
Lane Group Flow (vph)	426	427	234	513	846	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	21.0	21.0	21.0	78.4	57.4	
Total Split (%)	21.1%	21.1%	21.1%	78.9%	57.7%	
Maximum Green (s)	16.0	16.0	15.8	73.2	52.2	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	12.3	12.3	14.4	42.5	22.7	
Actuated g/C Ratio	0.19	0.19	0.22	0.65	0.35	
v/c Ratio	0.72	0.75	0.63	0.23	0.69	
Control Delay	13.9	15.2	33.8	5.0	21.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.9	15.2	33.8	5.0	21.6	
LOS	B	B	C	A	C	
Approach Delay	14.6			14.1	21.6	
Approach LOS	B			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 65.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 16.9		Intersection LOS: B	
Intersection Capacity Utilization 54.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	679	166	364	620	6
Future Volume (vph)	12	679	166	364	620	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.86	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1590	1504	1687	3374	3534	
Flt Permitted	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1590	1504	1687	3374	3534	
Peak-hour factor, PHF	0.81	0.81	0.71	0.71	0.74	0.74
Adj. Flow (vph)	15	838	234	513	838	8
RTOR Reduction (vph)	289	289	0	0	1	0
Lane Group Flow (vph)	137	138	234	513	845	0
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	2%	7%	7%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	12.3	12.3	14.4	42.5	22.9	
Effective Green, g (s)	12.3	12.3	14.4	42.5	22.9	
Actuated g/C Ratio	0.19	0.19	0.22	0.65	0.35	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	300	284	373	2206	1245	
v/s Ratio Prot	0.09		c0.14	0.15	c0.24	
v/s Ratio Perm		c0.09				
v/c Ratio	0.46	0.49	0.63	0.23	0.68	
Uniform Delay, d1	23.4	23.5	22.9	4.6	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	1.0	3.3	0.1	1.5	
Delay (s)	24.2	24.5	26.2	4.6	19.4	
Level of Service	C	C	C	A	B	
Approach Delay (s)	24.3			11.4	19.4	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	15.4
Intersection Capacity Utilization	54.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	171	122	247	91	15	75	457	499	127	1070	103
Future Volume (vph)	58	171	122	247	91	15	75	457	499	127	1070	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		525	325		75	200		250	400		0
Storage Lanes	1		1	2		1	0		1	1		0
Taper Length (ft)	75			100			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99					0.98					1.00	
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	3400	1845	1568	1687	3374	1509	1770	3486	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1710	1827	1553	3400	1845	1537	1687	3374	1509	1770	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			141			138			482		11	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			754			574			1022	
Travel Time (s)		12.7			17.1			11.2			19.9	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	7%	7%	7%	2%	2%	2%
Adj. Flow (vph)	74	219	156	287	106	17	93	564	616	143	1202	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	74	219	156	287	106	17	93	564	616	143	1318	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	30.0	30.0	13.1	13.1	13.1	13.1	32.1	32.1	14.1	32.1	
Total Split (s)	17.0	30.0	30.0	17.2	30.2	30.2	13.1	62.3	62.3	26.8	76.0	
Total Split (%)	12.5%	22.0%	22.0%	12.6%	22.2%	22.2%	9.6%	45.7%	45.7%	19.7%	55.8%	
Maximum Green (s)	12.0	25.0	25.0	12.1	25.1	25.1	8.0	57.2	57.2	21.7	70.9	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)		7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)		18.0	18.0					20.0	20.0		20.0	
Pedestrian Calls (#/hr)		5	5					0	0		0	
Act Effct Green (s)	20.6	15.4	15.4	11.6	9.8	9.8	8.3	37.1	37.1	11.9	40.7	
Actuated g/C Ratio	0.21	0.16	0.16	0.12	0.10	0.10	0.09	0.38	0.38	0.12	0.42	
v/c Ratio	0.20	0.76	0.43	0.71	0.57	0.06	0.65	0.44	0.70	0.66	0.90	
Control Delay	39.3	57.7	12.7	54.1	57.9	0.4	69.6	24.1	10.9	59.0	34.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	39.3	57.7	12.7	54.1	57.9	0.4	69.6	24.1	10.9	59.0	34.9	
LOS	D	E	B	D	E	A	E	C	B	E	C	
Approach Delay		39.0			52.8			21.0			37.3	
Approach LOS		D			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 136.3			
Actuated Cycle Length: 96.9			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 33.5		Intersection LOS: C	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	58	171	122	247	91	15	75	457	499	127	1070	103
Future Volume (veh/h)	58	171	122	247	91	15	75	457	499	127	1070	103
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		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1796	1796	1796	1870	1870	1870
Adj Flow Rate, veh/h	74	219	156	287	106	17	93	564	616	143	1202	116
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.81	0.81	0.81	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	3	3	3	7	7	7	2	2	2
Cap, veh/h	300	285	239	356	162	135	135	1439	642	175	1440	139
Arrive On Green	0.17	0.15	0.15	0.10	0.09	0.09	0.08	0.42	0.42	0.10	0.44	0.44
Sat Flow, veh/h	1753	1841	1545	3428	1856	1545	1711	3413	1522	1781	3267	315
Grp Volume(v), veh/h	74	219	156	287	106	17	93	564	616	143	652	666
Grp Sat Flow(s),veh/h/ln	1753	1841	1545	1714	1856	1545	1711	1706	1522	1781	1777	1805
Q Serve(g_s), s	3.3	10.5	8.7	7.5	5.1	0.7	4.8	10.5	36.0	7.2	29.7	29.9
Cycle Q Clear(g_c), s	3.3	10.5	8.7	7.5	5.1	0.7	4.8	10.5	36.0	7.2	29.7	29.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.17
Lane Grp Cap(c), veh/h	300	285	239	356	162	135	135	1439	642	175	783	795
V/C Ratio(X)	0.25	0.77	0.65	0.81	0.65	0.13	0.69	0.39	0.96	0.82	0.83	0.84
Avail Cap(c_a), veh/h	300	502	422	453	508	423	149	2131	950	422	1375	1397
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.8	37.1	36.4	40.1	40.5	22.9	41.1	18.4	25.7	40.5	22.6	22.7
Incr Delay (d2), s/veh	0.2	1.7	1.1	6.4	1.7	0.2	8.4	0.1	13.5	3.5	0.9	0.9
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	1.4	4.8	3.3	3.4	2.4	0.4	2.3	3.9	14.9	3.3	11.7	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	38.8	37.5	46.5	42.1	23.1	49.5	18.4	39.3	44.0	23.6	23.6
LnGrp LOS	C	D	D	D	D	C	D	B	D	D	C	C
Approach Vol, veh/h		449			410			1273			1461	
Approach Delay, s/veh		37.4			44.4			30.8			25.6	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	45.5	20.7	13.1	14.1	43.7	14.6	19.2
Change Period (Y+Rc), s	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.0
Max Green Setting (Gmax), s	8.0	70.9	12.0	25.1	21.7	57.2	12.1	25.0
Max Q Clear Time (g_c+I1), s	6.8	31.9	5.3	7.1	9.2	38.0	9.5	12.5
Green Ext Time (p_c), s	0.0	1.4	0.0	0.1	0.0	0.6	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

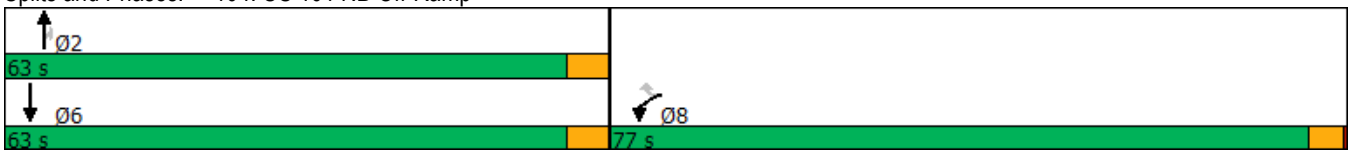


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1407	88	940	1302	0	991
Future Volume (vph)	1407	88	940	1302	0	991
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140	0	
Storage Lanes	2	1		2	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frt		0.850		0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	1583	5036	2760	0	5085
Flt Permitted	0.950					
Satd. Flow (perm)	3433	1583	5036	2760	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		45		1104		
Link Speed (mph)	30		35			35
Link Distance (ft)	385		681			604
Travel Time (s)	8.8		13.3			11.8
Peak Hour Factor	0.92	0.92	0.95	0.95	0.98	0.98
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	1529	96	989	1371	0	1011
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1529	96	989	1371	0	1011
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			12
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1		2
Detector Template	Left	Right	Thru	Right		Thru
Leading Detector (ft)	20	20	100	20		100
Trailing Detector (ft)	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20		6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8		2		
Detector Phase	8	8	2	2		6
Switch Phase						
Minimum Initial (s)	5.0	5.0	12.0	12.0		12.0
Minimum Split (s)	9.2	9.2	29.5	29.5		16.5
Total Split (s)	77.0	77.0	63.0	63.0		63.0
Total Split (%)	55.0%	55.0%	45.0%	45.0%		45.0%
Maximum Green (s)	72.8	72.8	58.5	58.5		58.5
Yellow Time (s)	3.7	3.7	4.5	4.5		4.5
All-Red Time (s)	0.5	0.5	0.0	0.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.2	4.2	4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.5	2.5		2.5
Recall Mode	None	None	Min	Min		Min
Walk Time (s)			4.0	4.0		
Flash Dont Walk (s)			21.0	21.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	52.4	52.4	46.3	46.3		46.3
Actuated g/C Ratio	0.48	0.48	0.43	0.43		0.43
v/c Ratio	0.92	0.12	0.46	0.76		0.46
Control Delay	36.2	10.1	24.0	8.3		24.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	36.2	10.1	24.0	8.3		24.0
LOS	D	B	C	A		C
Approach Delay	34.7		14.8			24.0
Approach LOS	C		B			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 108.1			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 23.1		Intersection LOS: C	
Intersection Capacity Utilization 66.5%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 104: US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1407	88	940	1302	0	991
Future Volume (veh/h)	1407	88	940	1302	0	991
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	0	1870
Adj Flow Rate, veh/h	1529	96	989	1371	0	1011
Peak Hour Factor	0.92	0.92	0.95	0.95	0.98	0.98
Percent Heavy Veh, %	2	2	3	3	0	2
Cap, veh/h	1582	726	2391	1306	0	2410
Arrive On Green	0.46	0.46	0.47	0.47	0.00	0.47
Sat Flow, veh/h	3456	1585	5233	2768	0	5443
Grp Volume(v), veh/h	1529	96	989	1371	0	1011
Grp Sat Flow(s),veh/h/ln	1728	1585	1689	1384	0	1702
Q Serve(g_s), s	53.3	4.3	15.9	58.5	0.0	16.2
Cycle Q Clear(g_c), s	53.3	4.3	15.9	58.5	0.0	16.2
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1582	726	2391	1306	0	2410
V/C Ratio(X)	0.97	0.13	0.41	1.05	0.00	0.42
Avail Cap(c_a), veh/h	2030	931	2391	1306	0	2410
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	32.7	19.4	21.5	32.7	0.0	21.5
Incr Delay (d2), s/veh	10.6	0.0	0.1	39.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	23.9	1.6	6.2	25.7	0.0	6.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.2	19.4	21.5	71.7	0.0	21.6
LnGrp LOS	D	B	C	F	A	C
Approach Vol, veh/h	1625		2360			1011
Approach Delay, s/veh	41.8		50.7			21.6
Approach LOS	D		D			C

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	63.0				63.0	60.9
Change Period (Y+Rc), s	4.5				4.5	4.2
Max Green Setting (Gmax), s	58.5				58.5	72.8
Max Q Clear Time (g_c+I1), s	60.5				18.2	55.3
Green Ext Time (p_c), s	0.0				6.9	1.4

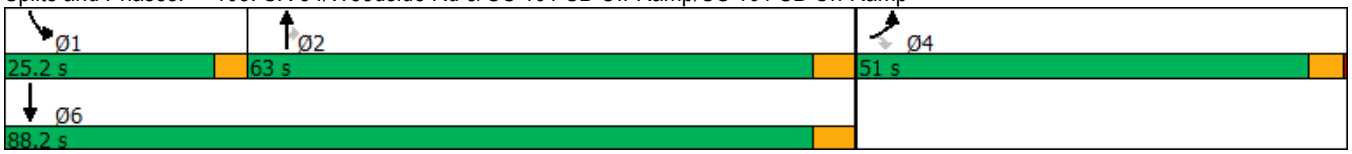
Intersection Summary	
HCM 6th Ctrl Delay	41.9
HCM 6th LOS	D

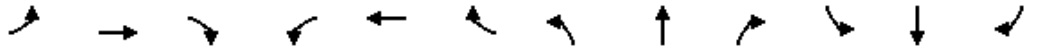
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	0	1291	0	0	0	0	2091	810	544	1854	0
Future Volume (vph)	151	0	1291	0	0	0	0	2091	810	544	1854	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	0		0	100		255	425		0
Storage Lanes	1		1	0		0	0		2	1		0
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	0.97	1.00	0.76	1.00	1.00	1.00	1.00	0.91	0.88	0.97	0.91	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3502	0	3682	0	0	0	0	5036	2760	3433	5085	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3502	0	3682	0	0	0	0	5036	2760	3433	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39						529			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1002			538			589			681	
Travel Time (s)		22.8			12.2			11.5			13.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	164	0	1403	0	0	0	0	2201	853	555	1892	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	164	0	1403	0	0	0	0	2201	853	555	1892	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1					2	1	1	2	
Detector Template	Left		Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20		20					100	20	20	100	
Trailing Detector (ft)	0		0					0	0	0	0	
Detector 1 Position(ft)	0		0					0	0	0	0	
Detector 1 Size(ft)	20		20					6	20	20	6	
Detector 1 Type	Cl+Ex		Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4						2			
Detector Phase	4		4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0		5.0					12.0	12.0	4.0	12.0	
Minimum Split (s)	9.2		9.2					29.5	29.5	7.5	16.5	
Total Split (s)	51.0		51.0					63.0	63.0	25.2	88.2	
Total Split (%)	36.6%		36.6%					45.3%	45.3%	18.1%	63.4%	
Maximum Green (s)	46.8		46.8					58.5	58.5	21.7	83.7	
Yellow Time (s)	3.7		3.7					4.5	4.5	3.5	4.5	
All-Red Time (s)	0.5		0.5					0.0	0.0	0.0	0.0	
Lost Time Adjust (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.2		4.2					4.5	4.5	3.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	1.0		1.0					2.5	2.5	2.0	2.5	
Recall Mode	None		None					Min	Min	None	Min	
Walk Time (s)								4.0	4.0			
Flash Dont Walk (s)								21.0	21.0			
Pedestrian Calls (#/hr)								0	0			
Act Effct Green (s)	46.8		46.8					58.5	58.5	21.7	83.7	
Actuated g/C Ratio	0.34		0.34					0.42	0.42	0.16	0.60	
v/c Ratio	0.14		1.11					1.04	0.58	1.04	0.62	
Control Delay	32.6		103.0					70.3	12.4	105.1	18.7	
Queue Delay	0.0		0.0					24.9	0.1	0.0	0.7	
Total Delay	32.6		103.0					95.2	12.5	105.1	19.4	
LOS	C		F					F	B	F	B	
Approach Delay		95.7						72.1			38.9	
Approach LOS		F						E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 139.2			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 65.8		Intersection LOS: E	
Intersection Capacity Utilization 73.2%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 105: SR 84/Woodside Rd & US 101 SB Off-Ramp/US 101 SB On-Ramp





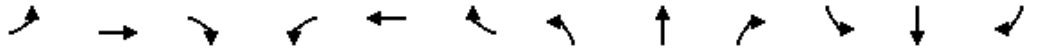
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	0	1291	0	0	0	0	2091	810	544	1854	0
Future Volume (veh/h)	151	0	1291	0	0	0	0	2091	810	544	1854	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	0	1900				0	1856	1856	1870	1870	0
Adj Flow Rate, veh/h	164	0	1403				0	2201	853	555	1892	0
Peak Hour Factor	0.92	0.92	0.92				0.95	0.95	0.95	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	3	3	2	2	0
Cap, veh/h	1180	0	1234				0	2129	1163	539	3070	0
Arrive On Green	0.34	0.00	0.34				0.00	0.42	0.42	0.16	0.60	0.00
Sat Flow, veh/h	3510	0	3671				0	5233	2768	3456	5274	0
Grp Volume(v), veh/h	164	0	1403				0	2201	853	555	1892	0
Grp Sat Flow(s),veh/h/ln	1755	0	1224				0	1689	1384	1728	1702	0
Q Serve(g_s), s	4.5	0.0	46.8				0.0	58.5	36.0	21.7	32.7	0.0
Cycle Q Clear(g_c), s	4.5	0.0	46.8				0.0	58.5	36.0	21.7	32.7	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1180	0	1234				0	2129	1163	539	3070	0
V/C Ratio(X)	0.14	0.00	1.14				0.00	1.03	0.73	1.03	0.62	0.00
Avail Cap(c_a), veh/h	1180	0	1234				0	2129	1163	539	3070	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.2	0.0	46.2				0.0	40.3	33.8	58.8	17.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	71.9				0.0	28.9	2.3	46.7	0.3	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
%ile BackOfQ(50%),veh/ln	2.0	0.0	22.3				0.0	29.3	12.3	12.9	12.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	0.0	118.1				0.0	69.2	36.1	105.5	17.9	0.0
LnGrp LOS	C	A	F				A	F	D	F	B	A
Approach Vol, veh/h		1567						3054			2447	
Approach Delay, s/veh		109.1						60.0			37.8	
Approach LOS		F						E			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.2	63.0		51.0		88.2
Change Period (Y+Rc), s	3.5	4.5		* 4.2		4.5
Max Green Setting (Gmax), s	21.7	58.5		* 47		83.7
Max Q Clear Time (g_c+I1), s	23.7	60.5		48.8		34.7
Green Ext Time (p_c), s	0.0	0.0		0.0		18.8

Intersection Summary	
HCM 6th Ctrl Delay	63.2
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

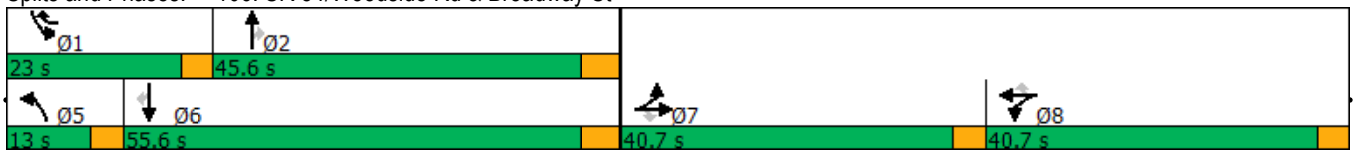


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	669	481	205	286	366	855	346	1377	33	714	2041	390
Future Volume (vph)	669	481	205	286	366	855	346	1377	33	714	2041	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		130	400		400	275		275	550		450
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	40			50			80			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.95	0.98					0.99			0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1787	3574	1599	3400	5036	1568	3467	5136	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1503	1754	3574	1599	3400	5036	1548	3467	5136	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			38			84			361
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1179			2103			625			589	
Travel Time (s)		32.2			57.4			12.2			11.5	
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	743	534	228	314	402	940	380	1513	36	893	2551	488
Shared Lane Traffic (%)												
Lane Group Flow (vph)	743	534	228	314	402	940	380	1513	36	893	2551	488
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Detector Phase	7	7	7	8	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	16.0	16.0	4.0	10.0	10.0
Minimum Split (s)	40.7	40.7	40.7	40.7	40.7	7.6	7.6	29.5	29.5	7.6	29.5	29.5
Total Split (s)	40.7	40.7	40.7	40.7	40.7	23.0	13.0	45.6	45.6	23.0	55.6	55.6
Total Split (%)	27.1%	27.1%	27.1%	27.1%	27.1%	15.3%	8.7%	30.4%	30.4%	15.3%	37.1%	37.1%
Maximum Green (s)	37.0	37.0	37.0	37.0	37.0	19.4	9.4	41.1	41.1	19.4	51.1	51.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Time Before Reduce (s)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	0.8	1.0	1.0
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	Max	Max	Max	Max	Max	None	None	Max	Max	None	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Flash Dont Walk (s)	33.0	33.0	33.0	33.0	33.0			21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)	32	32	32	0	0			0	0		0	0
Act Effct Green (s)	37.0	37.0	37.0	37.0	37.0	60.1	9.4	41.1	41.1	19.4	51.1	51.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.40	0.06	0.27	0.27	0.13	0.34	0.34
v/c Ratio	0.88	0.61	0.46	0.71	0.46	1.42	1.78	1.10	0.07	1.99	1.46	0.63
Control Delay	67.0	53.7	18.2	61.9	50.0	230.3	408.0	105.2	0.3	486.3	245.7	14.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.2
Total Delay	67.0	53.7	18.2	61.9	50.0	230.3	408.0	105.2	0.3	486.3	246.0	14.4
LOS	E	D	B	E	D	F	F	F	A	F	F	B
Approach Delay		54.9			154.6			162.9			271.8	
Approach LOS		D			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.99			
Intersection Signal Delay: 190.8		Intersection LOS: F	
Intersection Capacity Utilization 109.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 106: SR 84/Woodside Rd & Broadway St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	669	481	205	286	366	855	346	1377	33	714	2041	390
Future Volume (vph)	669	481	205	286	366	855	346	1377	33	714	2041	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	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	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1503	1787	3574	1599	3400	5036	1548	3467	5136	1579
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1503	1787	3574	1599	3400	5036	1548	3467	5136	1579
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	743	534	228	314	402	940	380	1513	36	892	2551	488
RTOR Reduction (vph)	0	0	121	0	0	24	0	0	26	0	0	238
Lane Group Flow (vph)	743	534	107	314	402	916	380	1513	10	893	2551	250
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	37.0	37.0	37.0	37.0	37.0	56.4	9.4	41.1	41.1	19.4	51.1	51.1
Effective Green, g (s)	37.0	37.0	37.0	37.0	37.0	56.4	9.4	41.1	41.1	19.4	51.1	51.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.38	0.06	0.27	0.27	0.13	0.34	0.34
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Lane Grp Cap (vph)	846	872	370	440	881	601	213	1379	424	448	1749	537
v/s Ratio Prot	c0.22	0.15		0.18	0.11	c0.20	0.11	0.30		c0.26	c0.50	
v/s Ratio Perm			0.07			0.38			0.01			0.16
v/c Ratio	0.88	0.61	0.29	0.71	0.46	1.52	1.78	1.10	0.02	1.99	1.46	0.47
Uniform Delay, d1	54.3	50.1	45.8	51.7	48.0	46.8	70.3	54.4	39.8	65.3	49.5	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.5	3.2	2.0	9.5	1.7	244.5	371.1	55.4	0.1	454.9	209.6	2.9
Delay (s)	66.8	53.3	47.8	61.2	49.7	291.3	441.4	109.8	39.9	520.2	259.0	41.6
Level of Service	E	D	D	E	D	F	F	F	D	F	F	D
Approach Delay (s)		59.2			189.0			173.8			291.4	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	208.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	109.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	562	151	786	567	336	203	1845	842	274	1876	65
Future Volume (vph)	221	562	151	786	567	336	203	1845	842	274	1876	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.968				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3411	0	3467	1881	1599	1752	3505	1568	3467	3574	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3411	0	3463	1881	1599	1752	3505	1568	3467	3574	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22				44			37			64
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			1060			1475			776	
Travel Time (s)		19.2			24.1			28.7			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			4									
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	257	653	176	845	610	361	218	1984	905	288	1975	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	257	829	0	845	610	361	218	1984	905	288	1975	68
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

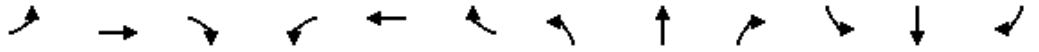
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	16.0	25.0		24.0	33.0	12.0	14.0	68.6	24.0	12.0	66.6	16.0
Total Split (%)	12.3%	19.3%		18.5%	25.5%	9.3%	10.8%	52.9%	18.5%	9.3%	51.4%	12.3%
Maximum Green (s)	12.8	20.8		20.8	28.8	8.8	10.8	63.6	20.8	8.8	61.6	12.8
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	12.8	22.9		20.8	30.9	43.9	10.8	63.7	89.5	8.8	61.6	79.5
Actuated g/C Ratio	0.10	0.17		0.16	0.23	0.33	0.08	0.48	0.68	0.07	0.47	0.60
v/c Ratio	1.50	1.36		1.54	1.38	0.64	1.51	1.17	0.84	1.25	1.18	0.07
Control Delay	293.2	211.7		290.8	224.2	38.3	305.1	116.4	24.8	190.4	121.2	3.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	293.2	211.7		290.8	224.2	38.3	305.1	116.4	24.8	190.4	121.2	3.4
LOS	F	F		F	F	D	F	F	C	F	F	A
Approach Delay		231.0			218.2			102.9			126.3	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 129.6
Actuated Cycle Length: 131.8
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.54
Intersection Signal Delay: 151.3 — Intersection LOS: F
Intersection Capacity Utilization 120.7% — ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	562	151	786	567	336	203	1845	842	274	1876	65
Future Volume (veh/h)	221	562	151	786	567	336	203	1845	842	274	1876	65
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	257	653	176	845	610	361	218	1984	905	288	1975	68
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	1	1	1
Cap, veh/h	176	442	119	559	419	463	147	1730	1024	237	1702	917
Arrive On Green	0.10	0.16	0.16	0.16	0.22	0.22	0.08	0.49	0.49	0.07	0.48	0.48
Sat Flow, veh/h	1781	2754	741	3483	1885	1593	1767	3526	1572	3483	3582	1598
Grp Volume(v), veh/h	257	421	408	845	610	361	218	1984	905	288	1975	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1718	1742	1885	1593	1767	1763	1572	1742	1791	1598
Q Serve(g_s), s	12.8	20.8	20.8	20.8	28.8	27.0	10.8	63.6	61.3	8.8	61.6	2.5
Cycle Q Clear(g_c), s	12.8	20.8	20.8	20.8	28.8	27.0	10.8	63.6	61.3	8.8	61.6	2.5
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	176	285	276	559	419	463	147	1730	1024	237	1702	917
V/C Ratio(X)	1.46	1.48	1.48	1.51	1.46	0.78	1.48	1.15	0.88	1.22	1.16	0.07
Avail Cap(c_a), veh/h	176	285	276	559	419	463	147	1730	1024	237	1702	917
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.4	54.4	54.4	54.4	50.4	42.2	59.4	33.0	18.6	60.4	34.0	12.3
Incr Delay (d2), s/veh	235.9	232.5	234.2	239.4	218.1	7.7	248.9	73.4	9.0	130.0	79.0	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	17.3	27.7	26.9	27.7	38.9	11.6	15.0	43.5	23.1	8.1	44.3	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	294.3	286.9	288.6	293.8	268.5	49.9	308.3	106.4	27.5	190.4	113.0	12.3
LnGrp LOS	F	F	F	F	F	D	F	F	C	F	F	B
Approach Vol, veh/h		1086			1816			3107			2331	
Approach Delay, s/veh		289.3			236.8			97.6			119.6	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	68.6	24.0	25.0	14.0	66.6	16.0	33.0
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	8.8	63.6	20.8	* 21	10.8	61.6	12.8	* 29
Max Q Clear Time (g_c+I1), s	10.8	65.6	22.8	22.8	12.8	63.6	14.8	30.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	159.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	12	18	418	10	8	13	12	281	12	16	0
Future Volume (vph)	0	12	18	418	10	8	13	12	281	12	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.998			0.876				
Flt Protected					0.954			0.998		0.950		
Satd. Flow (prot)	0	1746	0	0	1774	0	0	1613	0	1805	1900	0
Flt Permitted					0.954			0.998		0.950		
Satd. Flow (perm)	0	1746	0	0	1774	0	0	1613	0	1805	1900	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)			2			26			7			2
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	0	16	24	536	13	10	14	13	302	16	21	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	559	0	0	329	0	16	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

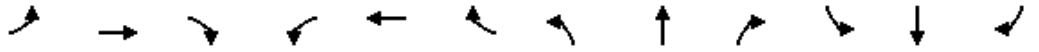
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	20.4
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	12	18	418	10	8	13	12	281	12	16	0
Future Vol, veh/h	0	12	18	418	10	8	13	12	281	12	16	0
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	2	2	2	3	3	3	0	0	0
Mvmt Flow	0	16	24	536	13	10	14	13	302	16	21	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.8	26.3	13	9.9
HCM LOS	A	D	B	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	96%	100%	0%
Vol Thru, %	4%	40%	2%	0%	100%
Vol Right, %	92%	60%	2%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	306	30	436	12	16
LT Vol	13	0	418	12	0
Through Vol	12	12	10	0	16
RT Vol	281	18	8	0	0
Lane Flow Rate	329	40	559	16	21
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.478	0.06	0.807	0.032	0.04
Departure Headway (Hd)	5.229	5.425	5.197	7.197	6.687
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	688	658	699	497	534
Service Time	3.267	3.474	3.223	4.953	4.442
HCM Lane V/C Ratio	0.478	0.061	0.8	0.032	0.039
HCM Control Delay	13	8.8	26.3	10.2	9.7
HCM Lane LOS	B	A	D	B	A
HCM 95th-tile Q	2.6	0.2	8.4	0.1	0.1

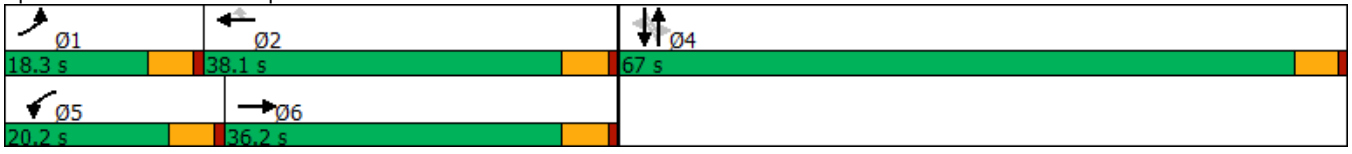


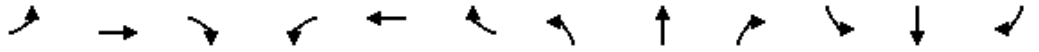
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	522	169	100	809	55	230	126	136	91	251	226
Future Volume (vph)	178	522	169	100	809	55	230	126	136	91	251	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.97		0.97	0.98	0.99		1.00	0.97	
Frt		0.963				0.850		0.922			0.929	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3357	0	1770	3539	1583	1770	1697	0	1770	1678	0
Flt Permitted	0.950			0.950			0.296			0.495		
Satd. Flow (perm)	1781	3357	0	1720	3539	1533	543	1697	0	919	1678	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34				64		63			53	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1835			558			661	
Travel Time (s)		32.0			41.7			15.2			18.0	
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	193	567	184	114	919	63	277	152	164	105	289	260
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	751	0	114	919	63	277	316	0	105	549	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	18.3	36.2		20.2	38.1	38.1	67.0	67.0		67.0	67.0	
Total Split (%)	14.8%	29.3%		16.4%	30.9%	30.9%	54.3%	54.3%		54.3%	54.3%	
Maximum Green (s)	13.1	31.0		15.0	32.9	32.9	62.0	62.0		62.0	62.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		36			6	6	57	57		57	57	
Act Effct Green (s)	13.1	33.8		12.2	32.9	32.9	62.0	62.0		62.0	62.0	
Actuated g/C Ratio	0.11	0.27		0.10	0.27	0.27	0.50	0.50		0.50	0.50	
v/c Ratio	1.02	0.79		0.66	0.97	0.14	1.02	0.36		0.23	0.63	
Control Delay	125.3	47.3		70.9	68.8	8.9	91.4	15.9		18.9	24.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	125.3	47.3		70.9	68.8	8.9	91.4	15.9		18.9	24.0	
LOS	F	D		E	E	A	F	B		B	C	
Approach Delay		63.2			65.6			51.2			23.2	
Approach LOS		E			E			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 123.4			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 53.9		Intersection LOS: D	
Intersection Capacity Utilization 96.3%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	522	169	100	809	55	230	126	136	91	251	226
Future Volume (vph)	178	522	169	100	809	55	230	126	136	91	251	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3358		1770	3539	1533	1742	1697		1764	1678	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.30	1.00		0.49	1.00	
Satd. Flow (perm)	1787	3358		1770	3539	1533	544	1697		918	1678	
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Adj. Flow (vph)	193	567	184	114	919	62	277	152	164	105	289	260
RTOR Reduction (vph)	0	25	0	0	0	46	0	31	0	0	26	0
Lane Group Flow (vph)	193	726	0	114	919	17	277	285	0	105	523	0
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	13.1	33.8		12.2	32.9	32.9	62.0	62.0		62.0	62.0	
Effective Green, g (s)	13.1	33.8		12.2	32.9	32.9	62.0	62.0		62.0	62.0	
Actuated g/C Ratio	0.11	0.27		0.10	0.27	0.27	0.50	0.50		0.50	0.50	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	189	919		174	943	408	273	852		461	843	
v/s Ratio Prot	c0.11	0.22		0.06	c0.26			0.17			0.31	
v/s Ratio Perm						0.01	c0.51			0.11		
v/c Ratio	1.02	0.79		0.66	0.97	0.04	1.01	0.33		0.23	0.62	
Uniform Delay, d1	55.2	41.5		53.6	44.8	33.6	30.7	18.4		17.2	22.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	71.1	4.4		6.6	23.0	0.0	58.3	0.2		0.2	1.2	
Delay (s)	126.2	45.9		60.2	67.8	33.6	89.0	18.5		17.4	23.4	
Level of Service	F	D		E	E	C	F	B		B	C	
Approach Delay (s)		62.3			65.1			51.4			22.4	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	123.4	Sum of lost time (s)	15.4
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

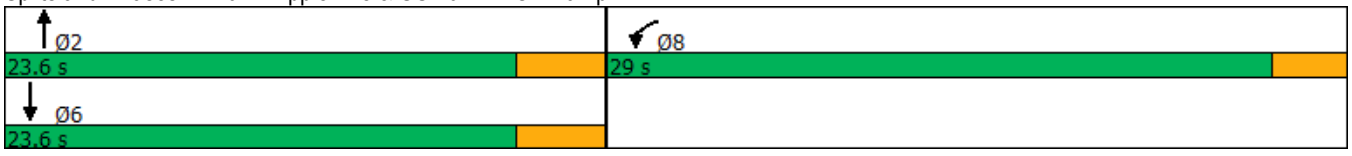


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1203	110	350	0	0	303
Future Volume (vph)	1203	110	350	0	0	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.987					
Flt Protected	0.956					
Satd. Flow (prot)	3410	0	1863	0	0	3574
Flt Permitted	0.956					
Satd. Flow (perm)	3410	0	1863	0	0	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	26					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.93	0.93	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	1294	118	438	0	0	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1412	0	438	0	0	379
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	29.0		23.6			23.6
Total Split (%)	55.1%		44.9%			44.9%
Maximum Green (s)	26.0		20.0			20.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	19.7		13.3			13.3
Actuated g/C Ratio	0.49		0.33			0.33
v/c Ratio	0.84		0.71			0.32
Control Delay	15.1		19.8			11.4
Queue Delay	0.0		0.0			0.0
Total Delay	15.1		19.8			11.4
LOS	B		B			B
Approach Delay	15.1		19.8			11.4
Approach LOS	B		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 40.1			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 15.4		Intersection LOS: B	
Intersection Capacity Utilization 106.7%		ICU Level of Service G	
Analysis Period (min) 15			

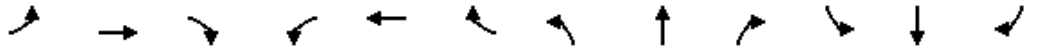
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1203	110	350	0	0	303
Future Volume (vph)	1203	110	350	0	0	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3412		1863			3574
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3412		1863			3574
Peak-hour factor, PHF	0.93	0.93	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1294	118	438	0	0	379
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	1399	0	438	0	0	379
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	19.7		13.3			13.3
Effective Green, g (s)	19.7		13.3			13.3
Actuated g/C Ratio	0.50		0.34			0.34
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1697		625			1200
v/s Ratio Prot	c0.41		c0.24			0.11
v/s Ratio Perm						
v/c Ratio	0.82		0.70			0.32
Uniform Delay, d1	8.5		11.4			9.8
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	3.2		2.9			0.1
Delay (s)	11.7		14.3			9.8
Level of Service	B		B			A
Approach Delay (s)	11.7		14.3			9.8
Approach LOS	B		B			A

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	39.6	Sum of lost time (s)	6.6
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

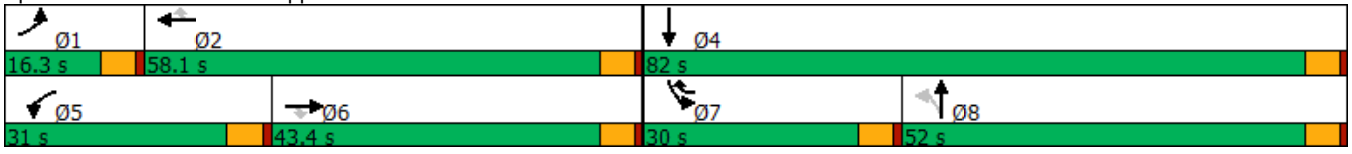


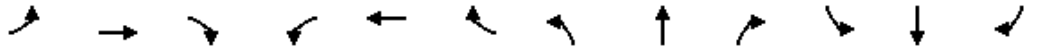
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1008	308	466	30	1370	19	939	155	223	1134	25
Future Volume (vph)	121	1008	308	466	30	1370	19	939	155	223	1134	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.97	0.99		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.979			0.997	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3467	5136	1599	3467	1881	3646	0	4962	0	1770	3525	0
Flt Permitted	0.950			0.950				0.882		0.950		
Satd. Flow (perm)	3453	5136	1555	3448	1881	3569	0	4381	0	1769	3525	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			121					20			2	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)	1		11	11		1	16		2	2		16
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	136	1133	346	555	36	1631	22	1067	176	248	1260	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	1133	346	555	36	1631	0	1265	0	248	1288	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	16.3	43.4	43.4	31.0	58.1	30.0	52.0	52.0		30.0	82.0	
Total Split (%)	10.4%	27.7%	27.7%	19.8%	37.1%	19.2%	33.2%	33.2%		19.2%	52.4%	
Maximum Green (s)	11.1	38.2	38.2	25.8	52.9	25.0	47.0	47.0		25.0	77.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		11	11				2	2			16	
Act Effct Green (s)	10.2	37.5	37.5	25.7	53.0	77.4		46.4		24.1	75.5	
Actuated g/C Ratio	0.07	0.24	0.24	0.17	0.34	0.50		0.30		0.16	0.49	
v/c Ratio	0.60	0.91	0.74	0.96	0.06	0.90		0.95		0.90	0.75	
Control Delay	81.6	67.9	45.0	92.0	35.2	40.0		67.2		96.9	34.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	81.6	67.9	45.0	92.0	35.2	40.0		67.2		96.9	34.9	
LOS	F	E	D	F	D	D		E		F	C	
Approach Delay		64.2			52.9			67.2			44.9	
Approach LOS		E			D			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 154.1			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 56.5		Intersection LOS: E	
Intersection Capacity Utilization 107.2%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	1008	308	466	30	1370	19	939	155	223	1134	25
Future Volume (veh/h)	121	1008	308	466	30	1370	19	939	155	223	1134	25
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		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	136	1133	346	555	36	1631	22	1067	176	248	1260	28
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	211	1272	390	597	675	1835	39	1192	195	270	1695	38
Arrive On Green	0.06	0.25	0.25	0.17	0.36	0.36	0.29	0.29	0.29	0.15	0.48	0.48
Sat Flow, veh/h	3483	5147	1576	3483	1885	3587	47	4084	668	1781	3552	79
Grp Volume(v), veh/h	136	1133	346	555	36	1631	452	407	406	248	630	658
Grp Sat Flow(s),veh/h/ln	1742	1716	1576	1742	1885	1196	1711	1549	1540	1781	1777	1854
Q Serve(g_s), s	5.6	31.4	31.3	23.2	1.8	52.9	20.0	37.4	37.4	20.3	42.4	42.5
Cycle Q Clear(g_c), s	5.6	31.4	31.3	23.2	1.8	52.9	37.1	37.4	37.4	20.3	42.4	42.5
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.43	1.00		0.04
Lane Grp Cap(c), veh/h	211	1272	390	597	675	1835	525	452	450	270	848	885
V/C Ratio(X)	0.64	0.89	0.89	0.93	0.05	0.89	0.86	0.90	0.90	0.92	0.74	0.74
Avail Cap(c_a), veh/h	262	1330	407	608	675	1835	567	492	490	301	926	966
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.9	53.7	53.7	60.4	31.1	32.6	49.5	50.3	50.3	61.8	31.3	31.3
Incr Delay (d2), s/veh	1.8	7.3	19.2	20.5	0.0	5.6	11.2	17.7	18.0	28.6	2.5	2.4
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	2.6	14.4	14.5	12.0	0.9	18.4	17.8	16.8	16.8	11.4	18.7	19.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.6	61.0	72.8	80.8	31.1	38.2	60.7	68.0	68.3	90.4	33.8	33.7
LnGrp LOS	E	E	E	F	C	D	E	E	E	F	C	C
Approach Vol, veh/h		1615			2222			1265			1536	
Approach Delay, s/veh		64.3			48.8			65.5			42.9	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	58.1		75.6	30.5	41.7	27.4	48.2				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	11.1	52.9		77.0	25.8	38.2	25.0	47.0				
Max Q Clear Time (g_c+I1), s	7.6	54.9		44.5	25.2	33.4	22.3	39.4				
Green Ext Time (p_c), s	0.1	0.0		6.8	0.1	2.8	0.1	3.7				

Intersection Summary												
HCM 6th Ctrl Delay			54.4									
HCM 6th LOS			D									

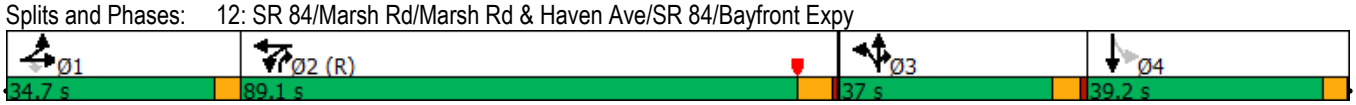
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	244	396	2488	120	6	315	0	2488	24	49	6
Future Volume (vph)	3	244	396	2488	120	6	315	0	2488	24	49	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00			1.00			1.00	
Frt			0.850		0.993				0.850		0.988	
Flt Protected		0.999		0.950				0.950			0.985	
Satd. Flow (prot)	0	3571	1599	4942	1827	0	0	1752	3575	0	3505	0
Flt Permitted		0.999		0.950				0.950			0.755	
Satd. Flow (perm)	0	3570	1577	4931	1827	0	0	1744	3575	0	2687	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			372		2						4	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Peak Hour Factor	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	3	271	440	2513	121	6	339	0	2675	38	78	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	274	440	2513	127	0	0	339	2675	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

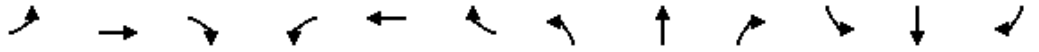
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	34.7	34.7	34.7	89.1	89.1		37.0	37.0		39.2	39.2	
Total Split (%)	17.4%	17.4%	17.4%	44.6%	44.6%		18.5%	18.5%		19.6%	19.6%	
Maximum Green (s)	31.0	31.0	31.0	82.9	82.9		31.9	31.9		35.0	35.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	7	7					2	2	
Act Effct Green (s)		21.5	21.5	110.5	110.5			31.9	147.5		16.9	
Actuated g/C Ratio		0.11	0.11	0.55	0.55			0.16	0.74		0.08	
v/c Ratio		0.72	0.88	0.92	0.13			1.22	1.01		0.55	
Control Delay		96.3	34.1	46.4	24.5			158.7	27.1		92.3	
Queue Delay		0.0	0.0	0.0	0.0			0.0	33.8		0.0	
Total Delay		96.3	34.1	46.4	24.5			158.7	60.9		92.3	
LOS		F	C	D	C			F	E		F	
Approach Delay		58.0			45.4			71.9			92.3	
Approach LOS		E			D			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 200
Actuated Cycle Length: 200
Offset: 58 (29%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 60.0 Intersection LOS: E
Intersection Capacity Utilization 94.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	244	396	2488	120	6	315	0	2488	24	49	6
Future Volume (vph)	3	244	396	2488	120	6	315	0	2488	24	49	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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		1.00	
Frt		1.00	0.85	1.00	0.99			1.00	0.85		0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)		3572	1577	4942	1827			1752	3575		3506	
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00		0.75	
Satd. Flow (perm)		3572	1577	4942	1827			1752	3575		2686	
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Adj. Flow (vph)	3	271	440	2513	121	6	339	0	2675	38	78	10
RTOR Reduction (vph)	0	0	332	0	1	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	274	108	2513	126	0	0	339	2675	0	122	0
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		21.5	21.5	110.5	110.5			31.9	148.6		16.9	
Effective Green, g (s)		21.5	21.5	110.5	110.5			31.9	148.6		16.9	
Actuated g/C Ratio		0.11	0.11	0.55	0.55			0.16	0.74		0.08	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		383	169	2730	1009			279	2656		226	
v/s Ratio Prot		c0.08		0.51	0.07			c0.19	c0.75			
v/s Ratio Perm			0.07								c0.05	
v/c Ratio		0.72	0.64	0.92	0.12			1.22	1.01		0.54	
Uniform Delay, d1		86.3	85.5	40.8	21.5			84.0	25.7		87.8	
Progression Factor		1.00	1.00	1.00	1.00			0.89	0.63		1.00	
Incremental Delay, d2		5.2	5.7	6.5	0.3			100.0	7.1		1.4	
Delay (s)		91.5	91.2	47.2	21.8			174.6	23.3		89.3	
Level of Service		F	F	D	C			F	C		F	
Approach Delay (s)		91.4			46.0			40.3			89.3	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

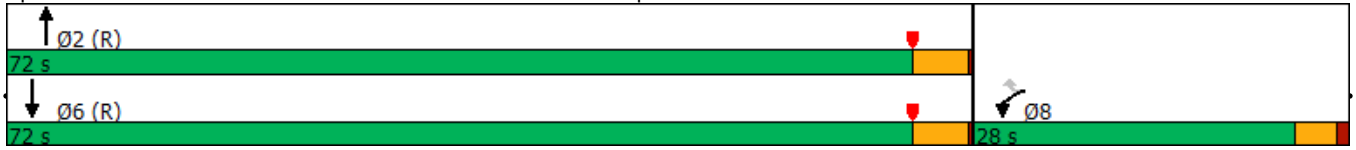


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	850	249	2899	0	0	1280
Future Volume (vph)	850	249	2899	0	0	1280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2646	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	924	271	3084	0	0	1376
Shared Lane Traffic (%)						
Lane Group Flow (vph)	924	271	3084	0	0	1376
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	28.0	28.0	72.0			72.0
Total Split (%)	28.0%	28.0%	72.0%			72.0%
Maximum Green (s)	23.8	23.8	67.4			67.4
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	23.8	23.8	67.4			67.4
Actuated g/C Ratio	0.24	0.24	0.67			0.67
v/c Ratio	1.17	0.43	1.31			0.58
Control Delay	123.4	34.5	157.8			15.4
Queue Delay	0.0	0.4	0.2			0.0
Total Delay	123.4	34.9	158.0			15.4
LOS	F	C	F			B
Approach Delay	103.4		158.0			15.4
Approach LOS	F		F			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 79 (79%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.31			
Intersection Signal Delay: 111.8		Intersection LOS: F	
Intersection Capacity Utilization 167.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	850	249	2899	0	0	1280
Future Volume (veh/h)	850	249	2899	0	0	1280
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	924	271	3084	0	0	1376
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	803	648	2376	0	0	2376
Arrive On Green	0.24	0.24	0.67	0.00	0.00	0.67
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	924	271	3084	0	0	1376
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	23.8	8.4	67.4	0.0	0.0	20.9
Cycle Q Clear(g_c), s	23.8	8.4	67.4	0.0	0.0	20.9
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	803	648	2376	0	0	2376
V/C Ratio(X)	1.15	0.42	1.30	0.00	0.00	0.58
Avail Cap(c_a), veh/h	803	648	2376	0	0	2376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	32.2	16.3	0.0	0.0	8.7
Incr Delay (d2), s/veh	82.0	0.2	137.3	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	2.8	67.0	0.0	0.0	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	120.1	32.4	153.6	0.0	0.0	9.8
LnGrp LOS	F	C	F	A	A	A
Approach Vol, veh/h	1195		3084			1376
Approach Delay, s/veh	100.2		153.6			9.8
Approach LOS	F		F			A

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	72.0			72.0	28.0
Change Period (Y+Rc), s	4.6			4.6	4.2
Max Green Setting (Gmax), s	67.4			67.4	23.8
Max Q Clear Time (g_c+I1), s	69.4			22.9	25.8
Green Ext Time (p_c), s	0.0			8.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	107.3
HCM 6th LOS	F

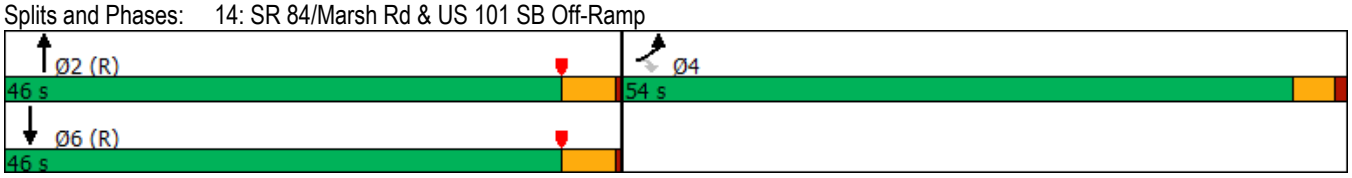


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2006	708	0	1438	1667	0
Future Volume (vph)	2006	708	0	1438	1667	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	2112	745	0	1598	1873	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2112	745	0	1598	1873	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	54.0	54.0		46.0	46.0	
Total Split (%)	54.0%	54.0%		46.0%	46.0%	
Maximum Green (s)	49.9	49.9		41.4	41.4	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	49.9	49.9		41.4	41.4	
Actuated g/C Ratio	0.50	0.50		0.41	0.41	
v/c Ratio	1.27	0.97		1.08	1.29	
Control Delay	151.6	51.7		78.0	165.1	
Queue Delay	2.9	0.0		0.0	0.0	
Total Delay	154.5	51.7		78.0	165.1	
LOS	F	D		E	F	
Approach Delay	127.7			78.0	165.1	
Approach LOS	F			E	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 25 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.29			
Intersection Signal Delay: 126.2		Intersection LOS: F	
Intersection Capacity Utilization 153.6%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2006	708	0	1438	1667	0
Future Volume (veh/h)	2006	708	0	1438	1667	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	2112	745	0	1598	1873	0
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1683	772	0	1483	1460	0
Arrive On Green	0.50	0.50	0.00	0.41	0.41	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	2112	745	0	1598	1873	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	49.9	46.5	0.0	41.4	41.4	0.0
Cycle Q Clear(g_c), s	49.9	46.5	0.0	41.4	41.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1683	772	0	1483	1460	0
V/C Ratio(X)	1.25	0.96	0.00	1.08	1.28	0.00
Avail Cap(c_a), veh/h	1683	772	0	1483	1460	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.0	24.2	0.0	29.3	29.3	0.0
Incr Delay (d2), s/veh	119.6	23.9	0.0	47.4	132.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	46.5	20.9	0.0	26.4	43.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	144.7	48.1	0.0	76.7	162.1	0.0
LnGrp LOS	F	D	A	F	F	A
Approach Vol, veh/h	2857			1598	1873	
Approach Delay, s/veh	119.5			76.7	162.1	
Approach LOS	F			E	F	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		46.0		54.0		46.0
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		41.4		49.9		41.4
Max Q Clear Time (g_c+I1), s		43.4		51.9		43.4
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay	121.3	
HCM 6th LOS	F	

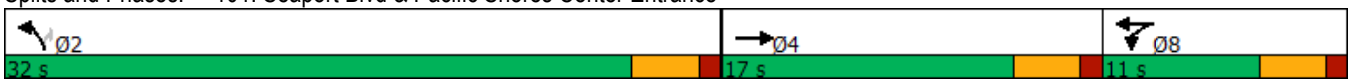
Cumulative Full Project AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	552	55	4	555	412
Future Volume (vph)	4	552	55	4	555	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.866					0.850
Flt Protected				0.955	0.950	
Satd. Flow (prot)	1567	0	0	1728	1752	1568
Flt Permitted				0.955	0.950	
Satd. Flow (perm)	1567	0	0	1728	1752	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	620					535
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.89	0.89	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	5%	5%	5%	5%	3%	3%
Adj. Flow (vph)	4	620	71	5	721	535
Shared Lane Traffic (%)						
Lane Group Flow (vph)	624	0	0	76	721	535
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Detector Phase	4		8	8	2	2
Switch Phase						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	17.0		11.0	11.0	32.0	32.0
Total Split (%)	28.3%		18.3%	18.3%	53.3%	53.3%
Maximum Green (s)	13.0		7.0	7.0	28.0	28.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.0			4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None
Act Effct Green (s)	9.3			7.0	24.2	24.2
Actuated g/C Ratio	0.19			0.15	0.51	0.51
v/c Ratio	0.78			0.30	0.81	0.51
Control Delay	10.5			26.6	22.0	3.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.5			26.6	22.0	3.0
LOS	B			C	C	A
Approach Delay	10.5			26.6	13.9	
Approach LOS	B			C	B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 47.7			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 79.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 101: Seaport Blvd & Pacific Shores Center Entrance



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	552	55	4	555	412
Future Volume (vph)	4	552	55	4	555	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.87			1.00	1.00	0.85
Flt Protected	1.00			0.96	0.95	1.00
Satd. Flow (prot)	1567			1729	1752	1568
Flt Permitted	1.00			0.96	0.95	1.00
Satd. Flow (perm)	1567			1729	1752	1568
Peak-hour factor, PHF	0.89	0.89	0.77	0.77	0.77	0.77
Adj. Flow (vph)	4	620	71	5	721	535
RTOR Reduction (vph)	502	0	0	0	0	271
Lane Group Flow (vph)	122	0	0	76	721	264
Heavy Vehicles (%)	5%	5%	5%	5%	3%	3%
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Actuated Green, G (s)	9.3			3.5	24.2	24.2
Effective Green, g (s)	9.3			3.5	24.2	24.2
Actuated g/C Ratio	0.19			0.07	0.49	0.49
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	297			123	865	774
v/s Ratio Prot	c0.08			c0.04	c0.41	
v/s Ratio Perm						0.17
v/c Ratio	0.41			0.62	0.83	0.34
Uniform Delay, d1	17.4			22.1	10.7	7.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.9			8.9	6.9	0.3
Delay (s)	18.4			31.0	17.6	7.8
Level of Service	B			C	B	A
Approach Delay (s)	18.4			31.0	13.4	
Approach LOS	B			C	B	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	30	967	606	1
Future Volume (vph)	0	0	30	967	606	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1736	3471	3406	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1736	3471	3406	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.77	0.77	0.89	0.89
Heavy Vehicles (%)	2%	2%	4%	4%	6%	6%
Adj. Flow (vph)	0	0	39	1256	681	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	39	1256	682	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	30.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	30	967	606	1
Future Vol, veh/h	0	0	30	967	606	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	77	77	89	89
Heavy Vehicles, %	2	2	4	4	6	6
Mvmt Flow	0	0	39	1256	681	1

Major/Minor	Minor2		Major2	
Conflicting Flow All	682	682	-	0
Stage 1	682	682	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.88	6.58	-	-
Critical Hdwy Stg 1	5.88	5.58	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.54	4.04	-	-
Pot Cap-1 Maneuver	379	~ 367	-	-
Stage 1	458	~ 443	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	379	0	-	-
Mov Cap-2 Maneuver	379	0	-	-
Stage 1	458	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	379	-	-	-	-
HCM Lane V/C Ratio	0.103	-	-	-	-
HCM Control Delay (s)	15.6	-	-	-	-
HCM Lane LOS	C	-	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	501	293	266	55	0
Future Volume (vph)	0	501	293	266	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1596	0	1752	1845	1496	0
Flt Permitted			0.950			
Satd. Flow (perm)	1596	0	1752	1845	1496	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			484	416	
Travel Time (s)	10.1			11.0	9.5	
Peak Hour Factor	0.90	0.90	0.81	0.81	0.80	0.80
Heavy Vehicles (%)	3%	3%	3%	3%	27%	27%
Adj. Flow (vph)	0	557	362	328	69	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	557	0	362	328	69	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	22
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	501	293	266	55	0
Future Vol, veh/h	0	501	293	266	55	0
Peak Hour Factor	0.90	0.90	0.81	0.81	0.80	0.80
Heavy Vehicles, %	3	3	3	3	27	27
Mvmt Flow	0	557	362	328	69	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	25.8	20	11.2
HCM LOS	D	C	B

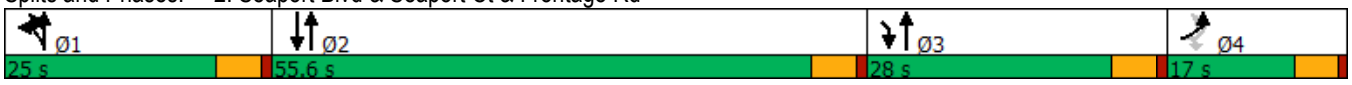
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	293	266	501	55
LT Vol	293	0	0	0
Through Vol	0	266	0	55
RT Vol	0	0	501	0
Lane Flow Rate	362	328	557	69
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.679	0.57	0.803	0.134
Departure Headway (Hd)	6.758	6.25	5.192	7.022
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	535	578	701	509
Service Time	4.504	3.995	3.192	5.086
HCM Lane V/C Ratio	0.677	0.567	0.795	0.136
HCM Control Delay	22.7	17	25.8	11.2
HCM Lane LOS	C	C	D	B
HCM 95th-tile Q	5.1	3.6	8.2	0.5

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	19	46	22	997	605	2	0	49	1
Future Volume (vph)	0	19	46	22	997	605	2	0	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60		265			0	0	0	
Storage Lanes	1	1		1			0	0	1	
Taper Length (ft)	25			50				25		
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00						
Frt		0.850							0.865	
Flt Protected				0.950						
Satd. Flow (prot)	1759	1495	0	1656	3312	3438	0	0	1015	0
Flt Permitted				0.950						
Satd. Flow (perm)	1759	1474	0	1654	3312	3438	0	0	1015	0
Right Turn on Red		Yes								No
Satd. Flow (RTOR)		470								
Link Speed (mph)	30				35	35		30		
Link Distance (ft)	369				675	1774		538		
Travel Time (s)	8.4				13.1	34.6		12.2		
Confl. Peds. (#/hr)		2	1							1
Peak Hour Factor	0.54	0.54	0.80	0.80	0.80	0.89	0.89	0.85	0.85	0.85
Heavy Vehicles (%)	8%	8%	9%	9%	9%	5%	5%	62%	62%	62%
Adj. Flow (vph)	0	35	58	28	1246	680	2	0	58	1
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	35	0	86	1246	682	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	12				12	12		0		
Link Offset(ft)	0				0	0		0		
Crosswalk Width(ft)	16				16	16		16		
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	2	2			1	
Detector Template	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)					94	94				
Detector 2 Size(ft)					6	6				
Detector 2 Type					Cl+Ex	Cl+Ex				
Detector 2 Channel										
Detector 2 Extend (s)					0.0	0.0				

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Detector Phase	4	4	1	1	2	2			3	
Switch Phase										
Minimum Initial (s)	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	17.0	17.0	25.0	25.0		55.6			28.0	
Total Split (%)	13.5%	13.5%	19.9%	19.9%		44.3%			22.3%	
Maximum Green (s)	12.0	12.0	19.8	19.8		50.4			22.8	
Yellow Time (s)	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0								
Pedestrian Calls (#/hr)	2	2								
Act Effct Green (s)		14.3		13.1	83.2	54.4			14.4	
Actuated g/C Ratio		0.15		0.14	0.87	0.57			0.15	
v/c Ratio		0.06		0.38	0.43	0.35			0.39	
Control Delay		0.2		52.7	4.4	21.0			55.0	
Queue Delay		0.0		0.0	0.0	0.0			0.0	
Total Delay		0.2		52.7	4.4	21.0			55.0	
LOS		A		D	A	C			D	
Approach Delay	0.2				7.6	21.0		55.0		
Approach LOS	A				A	C		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 96			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.43			
Intersection Signal Delay: 13.1		Intersection LOS: B	
Intersection Capacity Utilization 53.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	19	46	22	997	605	2	0	49	1
Future Volume (vph)	0	19	46	22	997	605	2	0	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00		1.00	0.95	0.95			1.00	
Frpb, ped/bikes		0.99		1.00	1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00			1.00	
Frt		0.85		1.00	1.00	1.00			0.86	
Flt Protected		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1475		1656	3312	3437			1015	
Flt Permitted		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1475		1656	3312	3437			1015	
Peak-hour factor, PHF	0.54	0.54	0.80	0.80	0.80	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	0	35	58	28	1246	680	2	0	58	1
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3	0	86	1246	682	0	0	59	0
Confl. Peds. (#/hr)		2	1							1
Heavy Vehicles (%)	8%	8%	9%	9%	9%	5%	5%	62%	62%	62%
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Actuated Green, G (s)		7.8		9.4	82.4	52.3			10.3	
Effective Green, g (s)		7.8		9.4	82.4	52.3			10.3	
Actuated g/C Ratio		0.08		0.09	0.82	0.52			0.10	
Clearance Time (s)		5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		114		155	2718	1790			104	
v/s Ratio Prot				0.05	c0.38	0.20			0.06	
v/s Ratio Perm		c0.00								
v/c Ratio		0.02		0.55	0.46	0.38			0.57	
Uniform Delay, d1		42.8		43.5	2.6	14.4			42.9	
Progression Factor		1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.1		5.2	0.2	0.2			8.4	
Delay (s)		42.9		48.7	2.8	14.6			51.3	
Level of Service		D		D	A	B			D	
Approach Delay (s)	42.9				5.7	14.6		51.3		
Approach LOS	D				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.4	Sum of lost time (s)	20.6
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

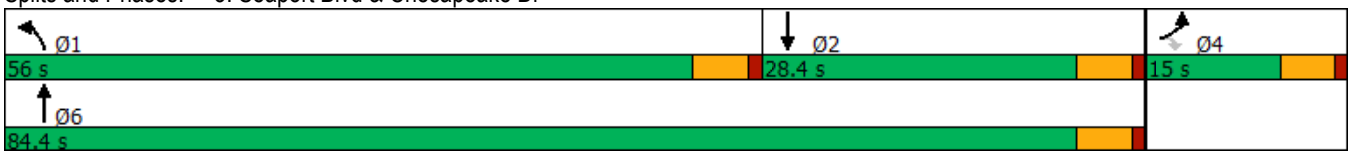


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	99	787	1058	664	9
Future Volume (vph)	7	99	787	1058	664	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.869	0.850			0.998	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1440	1346	1736	3471	3275	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1440	1346	1736	3471	3275	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	61	68			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.77	0.77	0.84	0.84	0.88	0.88
Heavy Vehicles (%)	14%	14%	4%	4%	10%	10%
Adj. Flow (vph)	9	129	937	1260	755	10
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	70	68	937	1260	765	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	15.0	15.0	56.0	84.4	28.4	
Total Split (%)	15.1%	15.1%	56.3%	84.9%	28.6%	
Maximum Green (s)	10.0	10.0	50.8	79.2	23.2	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.0	10.0	51.0	80.7	23.3	
Actuated g/C Ratio	0.10	0.10	0.53	0.84	0.24	
v/c Ratio	0.34	0.34	1.02	0.43	0.97	
Control Delay	18.9	15.8	60.2	3.3	62.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	15.8	60.2	3.3	62.6	
LOS	B	B	E	A	E	
Approach Delay	17.4			27.6	62.6	
Approach LOS	B			C	E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 96.4			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 35.8		Intersection LOS: D	
Intersection Capacity Utilization 83.4%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	99	787	1058	664	9
Future Volume (vph)	7	99	787	1058	664	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.87	0.85	1.00	1.00	1.00	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1440	1346	1736	3471	3275	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1440	1346	1736	3471	3275	
Peak-hour factor, PHF	0.77	0.77	0.84	0.84	0.88	0.88
Adj. Flow (vph)	9	129	937	1260	755	10
RTOR Reduction (vph)	56	63	0	0	1	0
Lane Group Flow (vph)	14	5	937	1260	764	0
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	14%	14%	4%	4%	10%	10%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	7.8	7.8	51.0	79.5	23.3	
Effective Green, g (s)	7.8	7.8	51.0	79.5	23.3	
Actuated g/C Ratio	0.08	0.08	0.52	0.82	0.24	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	115	107	908	2830	782	
v/s Ratio Prot	c0.01		c0.54	0.36	c0.23	
v/s Ratio Perm		0.00				
v/c Ratio	0.12	0.05	1.03	0.45	0.98	
Uniform Delay, d1	41.7	41.4	23.2	2.6	36.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.1	38.4	0.1	26.4	
Delay (s)	42.0	41.6	61.6	2.7	63.2	
Level of Service	D	D	E	A	E	
Approach Delay (s)	41.8			27.8	63.2	
Approach LOS	D			C	E	

Intersection Summary			
HCM 2000 Control Delay	37.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	97.5	Sum of lost time (s)	15.4
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	95	124	358	121	97	157	1591	311	18	643	101
Future Volume (vph)	157	95	124	358	121	97	157	1591	311	18	643	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		525	325		75	200		250	400		0
Storage Lanes	1		1	2		1	0		1	1		0
Taper Length (ft)	75			100			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850			0.850		0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1410	1484	1262	3273	1776	1509	1687	3374	1509	1626	3177	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1408	1484	1262	3273	1776	1488	1686	3374	1509	1626	3177	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			133			207		14	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			713			574			1022	
Travel Time (s)		12.7			16.2			11.2			19.9	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.84	0.84	0.84
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	7%	7%	7%	11%	11%	11%
Adj. Flow (vph)	183	110	144	402	136	109	174	1768	346	21	765	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	183	110	144	402	136	109	174	1768	346	21	885	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	30.0	30.0	13.1	13.1	13.1	13.1	32.1	32.1	14.1	32.1	
Total Split (s)	28.0	30.0	30.0	22.0	24.0	24.0	29.6	76.2	76.2	14.1	60.7	
Total Split (%)	19.7%	21.1%	21.1%	15.5%	16.9%	16.9%	20.8%	53.5%	53.5%	9.9%	42.7%	
Maximum Green (s)	23.0	25.0	25.0	16.9	18.9	18.9	24.5	71.1	71.1	9.0	55.6	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)		7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)		18.0	18.0					20.0	20.0		20.0	
Pedestrian Calls (#/hr)		1	1					0	0		1	
Act Effct Green (s)	20.7	16.4	16.4	17.1	12.7	12.7	15.9	71.8	71.8	9.1	58.6	
Actuated g/C Ratio	0.16	0.13	0.13	0.13	0.10	0.10	0.12	0.56	0.56	0.07	0.46	
v/c Ratio	0.81	0.58	0.50	0.93	0.77	0.41	0.83	0.94	0.37	0.18	0.61	
Control Delay	79.7	66.1	14.2	84.1	85.7	9.4	86.4	38.9	8.4	65.3	29.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	79.7	66.1	14.2	84.1	85.7	9.4	86.4	38.9	8.4	65.3	29.8	
LOS	E	E	B	F	F	A	F	D	A	E	C	
Approach Delay		54.7			71.8			37.9			30.7	
Approach LOS		D			E			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 142.3			
Actuated Cycle Length: 128.5			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 43.2		Intersection LOS: D	
Intersection Capacity Utilization 86.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	95	124	358	121	97	157	1591	311	18	643	101
Future Volume (veh/h)	157	95	124	358	121	97	157	1591	311	18	643	101
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		1.00	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1485	1485	1796	1796	1796	1796	1796	1796	1737	1737	1737
Adj Flow Rate, veh/h	183	110	144	402	136	109	174	1768	346	21	765	120
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.84	0.84	0.84
Percent Heavy Veh, %	28	28	28	7	7	7	7	7	7	11	11	11
Cap, veh/h	248	196	165	448	164	138	198	1822	812	62	1296	203
Arrive On Green	0.18	0.13	0.13	0.13	0.09	0.09	0.12	0.53	0.53	0.04	0.46	0.46
Sat Flow, veh/h	1414	1485	1256	3319	1796	1517	1711	3413	1521	1654	2848	447
Grp Volume(v), veh/h	183	110	144	402	136	109	174	1768	346	21	443	442
Grp Sat Flow(s),veh/h/ln	1414	1485	1256	1659	1796	1517	1711	1706	1521	1654	1650	1644
Q Serve(g_s), s	15.3	8.7	14.1	14.9	9.3	7.7	12.5	62.7	17.2	1.6	25.1	25.1
Cycle Q Clear(g_c), s	15.3	8.7	14.1	14.9	9.3	7.7	12.5	62.7	17.2	1.6	25.1	25.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.27
Lane Grp Cap(c), veh/h	248	196	165	448	164	138	198	1822	812	62	751	748
V/C Ratio(X)	0.74	0.56	0.87	0.90	0.83	0.79	0.88	0.97	0.43	0.34	0.59	0.59
Avail Cap(c_a), veh/h	260	296	251	448	271	229	335	1938	863	119	751	748
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	51.0	53.3	53.3	56.0	42.1	54.5	28.2	17.6	58.8	25.4	25.4
Incr Delay (d2), s/veh	8.6	0.9	13.0	19.9	4.2	3.7	6.7	13.5	0.1	1.2	0.8	0.8
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	6.1	3.3	5.1	7.5	4.4	3.1	5.7	27.4	6.1	0.7	9.8	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.5	51.9	66.3	73.3	60.2	45.9	61.2	41.7	17.7	60.0	26.3	26.3
LnGrp LOS	E	D	E	E	E	D	E	D	B	E	C	C
Approach Vol, veh/h		437			647			2288			906	
Approach Delay, s/veh		59.0			65.9			39.5			27.0	
Approach LOS		E			E			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	19.6	62.1	27.0	16.5	9.8	72.0	22.0	21.5
Change Period (Y+Rc), s	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.0
Max Green Setting (Gmax), s	24.5	55.6	23.0	18.9	9.0	71.1	16.9	25.0
Max Q Clear Time (g_c+I1), s	14.5	27.1	17.3	11.3	3.6	64.7	16.9	16.1
Green Ext Time (p_c), s	0.0	0.9	0.0	0.1	0.0	2.1	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.9
HCM 6th LOS	D

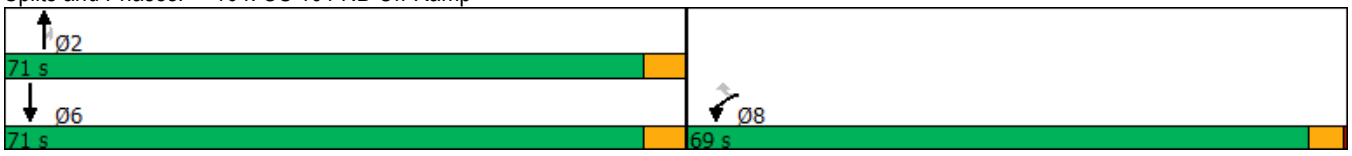


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1540	362	1698	1714	0	645
Future Volume (vph)	1540	362	1698	1714	0	645
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140	0	
Storage Lanes	2	1		2	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frt		0.850		0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	1583	4940	2707	0	4803
Flt Permitted	0.950					
Satd. Flow (perm)	3433	1583	4940	2707	0	4803
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5		891		
Link Speed (mph)	30		35			35
Link Distance (ft)	385		681			605
Travel Time (s)	8.8		13.3			11.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.89	0.89
Heavy Vehicles (%)	2%	2%	5%	5%	8%	8%
Adj. Flow (vph)	1674	393	1846	1863	0	725
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1674	393	1846	1863	0	725
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			12
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1		2
Detector Template	Left	Right	Thru	Right		Thru
Leading Detector (ft)	20	20	100	20		100
Trailing Detector (ft)	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20		6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8		2		
Detector Phase	8	8	2	2		6
Switch Phase						
Minimum Initial (s)	5.0	5.0	12.0	12.0		12.0
Minimum Split (s)	9.2	9.2	29.5	29.5		16.5
Total Split (s)	69.0	69.0	71.0	71.0		71.0
Total Split (%)	49.3%	49.3%	50.7%	50.7%		50.7%
Maximum Green (s)	64.8	64.8	66.5	66.5		66.5
Yellow Time (s)	3.7	3.7	4.5	4.5		4.5
All-Red Time (s)	0.5	0.5	0.0	0.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.2	4.2	4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.5	2.5		2.5
Recall Mode	None	None	Min	Min		Min
Walk Time (s)			4.0	4.0		
Flash Dont Walk (s)			21.0	21.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	64.8	64.8	66.5	66.5		66.5
Actuated g/C Ratio	0.46	0.46	0.48	0.48		0.48
v/c Ratio	1.05	0.53	0.79	1.06		0.32
Control Delay	75.0	29.8	33.9	59.7		23.2
Queue Delay	0.0	0.0	1.5	3.5		0.0
Total Delay	75.0	29.8	35.3	63.2		23.2
LOS	E	C	D	E		C
Approach Delay	66.4		49.3			23.2
Approach LOS	E		D			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay: 51.9		Intersection LOS: D	
Intersection Capacity Utilization 84.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 104: US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1540	362	1698	1714	0	645
Future Volume (veh/h)	1540	362	1698	1714	0	645
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1826	1826	0	1781
Adj Flow Rate, veh/h	1674	393	1846	1863	0	725
Peak Hour Factor	0.92	0.92	0.92	0.92	0.89	0.89
Percent Heavy Veh, %	2	2	5	5	0	8
Cap, veh/h	1600	734	2368	1294	0	2310
Arrive On Green	0.46	0.46	0.47	0.47	0.00	0.47
Sat Flow, veh/h	3456	1585	5149	2723	0	5184
Grp Volume(v), veh/h	1674	393	1846	1863	0	725
Grp Sat Flow(s),veh/h/ln	1728	1585	1662	1362	0	1621
Q Serve(g_s), s	64.8	24.8	43.2	66.5	0.0	12.9
Cycle Q Clear(g_c), s	64.8	24.8	43.2	66.5	0.0	12.9
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1600	734	2368	1294	0	2310
V/C Ratio(X)	1.05	0.54	0.78	1.44	0.00	0.31
Avail Cap(c_a), veh/h	1600	734	2368	1294	0	2310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.6	26.9	30.6	36.8	0.0	22.7
Incr Delay (d2), s/veh	35.8	0.4	1.7	202.5	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	34.7	9.5	17.3	57.7	0.0	4.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	73.4	27.3	32.3	239.3	0.0	22.7
LnGrp LOS	F	C	C	F	A	C
Approach Vol, veh/h	2067		3709			725
Approach Delay, s/veh	64.6		136.3			22.7
Approach LOS	E		F			C

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	71.0				71.0	69.0
Change Period (Y+Rc), s	4.5				4.5	4.2
Max Green Setting (Gmax), s	66.5				66.5	64.8
Max Q Clear Time (g_c+I1), s	68.5				14.9	66.8
Green Ext Time (p_c), s	0.0				4.6	0.0

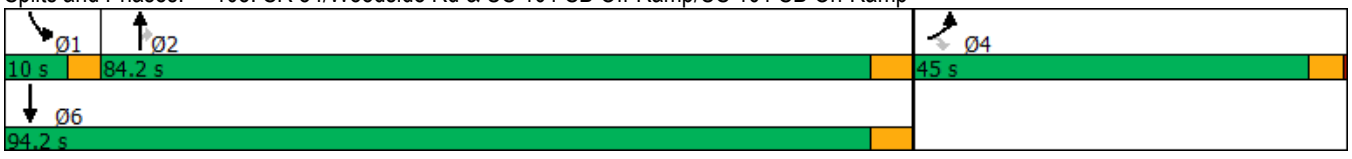
Intersection Summary	
HCM 6th Ctrl Delay	100.8
HCM 6th LOS	F

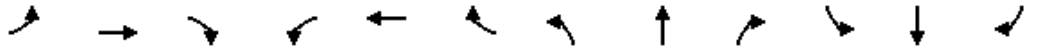
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	578	0	1068	0	0	0	0	2834	853	149	2035	0
Future Volume (vph)	578	0	1068	0	0	0	0	2834	853	149	2035	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	0		0	100		255	425		0
Storage Lanes	1		1	0		0	0		2	1		0
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	0.97	1.00	0.76	1.00	1.00	1.00	1.00	0.91	0.88	0.97	0.91	1.00
Ped Bike Factor												
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3273	0	3441	0	0	0	0	4940	2707	3242	4803	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3273	0	3441	0	0	0	0	4940	2707	3242	4803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39						557			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1002			538			589			681	
Travel Time (s)		22.8			12.2			11.5			13.3	
Confl. Peds. (#/hr)							3					3
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.92	0.92	0.89	0.89	0.89
Heavy Vehicles (%)	7%	7%	7%	2%	2%	2%	5%	5%	5%	8%	8%	8%
Adj. Flow (vph)	649	0	1200	0	0	0	0	3080	927	167	2287	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	649	0	1200	0	0	0	0	3080	927	167	2287	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1					2	1	1	2	
Detector Template	Left		Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20		20					100	20	20	100	
Trailing Detector (ft)	0		0					0	0	0	0	
Detector 1 Position(ft)	0		0					0	0	0	0	
Detector 1 Size(ft)	20		20					6	20	20	6	
Detector 1 Type	Cl+Ex		Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	
Permitted Phases			4						2			
Detector Phase	4		4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0		5.0					12.0	12.0	4.0	12.0	
Minimum Split (s)	9.2		9.2					29.5	29.5	7.5	16.5	
Total Split (s)	45.0		45.0					84.2	84.2	10.0	94.2	
Total Split (%)	32.3%		32.3%					60.5%	60.5%	7.2%	67.7%	
Maximum Green (s)	40.8		40.8					79.7	79.7	6.5	89.7	
Yellow Time (s)	3.7		3.7					4.5	4.5	3.5	4.5	
All-Red Time (s)	0.5		0.5					0.0	0.0	0.0	0.0	
Lost Time Adjust (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.2		4.2					4.5	4.5	3.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	1.0		1.0					2.5	2.5	2.0	2.5	
Recall Mode	None		None					Min	Min	None	Min	
Walk Time (s)								4.0	4.0			
Flash Dont Walk (s)								21.0	21.0			
Pedestrian Calls (#/hr)								0	0			
Act Effct Green (s)	40.8		40.8					79.7	79.7	6.5	89.7	
Actuated g/C Ratio	0.29		0.29					0.57	0.57	0.05	0.64	
v/c Ratio	0.68		1.16					1.09	0.52	1.11	0.74	
Control Delay	47.6		124.5					76.3	7.4	163.1	18.7	
Queue Delay	0.0		0.0					5.1	0.3	0.0	2.0	
Total Delay	47.6		124.5					81.4	7.7	163.1	20.6	
LOS	D		F					F	A	F	C	
Approach Delay		97.5						64.3			30.3	
Approach LOS		F						E			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 139.2			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 61.7		Intersection LOS: E	
Intersection Capacity Utilization 85.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 105: SR 84/Woodside Rd & US 101 SB Off-Ramp/US 101 SB On-Ramp





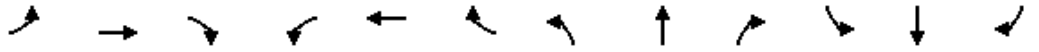
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	578	0	1068	0	0	0	0	2834	853	149	2035	0
Future Volume (veh/h)	578	0	1068	0	0	0	0	2834	853	149	2035	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1796	0	1796				0	1826	1826	1781	1781	0
Adj Flow Rate, veh/h	649	0	1200				0	3080	927	167	2287	0
Peak Hour Factor	0.89	0.89	0.89				0.92	0.92	0.92	0.89	0.89	0.89
Percent Heavy Veh, %	7	0	7				0	5	5	8	8	0
Cap, veh/h	973	0	1017				0	2854	1559	154	3134	0
Arrive On Green	0.29	0.00	0.29				0.00	0.57	0.57	0.05	0.64	0.00
Sat Flow, veh/h	3319	0	3471				0	5149	2723	3291	5024	0
Grp Volume(v), veh/h	649	0	1200				0	3080	927	167	2287	0
Grp Sat Flow(s),veh/h/ln	1659	0	1157				0	1662	1362	1646	1621	0
Q Serve(g_s), s	23.9	0.0	40.8				0.0	79.7	30.7	6.5	43.9	0.0
Cycle Q Clear(g_c), s	23.9	0.0	40.8				0.0	79.7	30.7	6.5	43.9	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	973	0	1017				0	2854	1559	154	3134	0
V/C Ratio(X)	0.67	0.00	1.18				0.00	1.08	0.59	1.09	0.73	0.00
Avail Cap(c_a), veh/h	973	0	1017				0	2854	1559	154	3134	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.2	0.0	49.2				0.0	29.8	19.3	66.3	16.6	0.0
Incr Delay (d2), s/veh	1.4	0.0	91.1				0.0	42.8	0.5	97.6	0.8	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
%ile BackOfQ(50%),veh/ln	10.0	0.0	20.3				0.0	41.1	9.5	4.8	15.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	0.0	140.3				0.0	72.5	19.8	164.0	17.5	0.0
LnGrp LOS	D	A	F				A	F	B	F	B	A
Approach Vol, veh/h		1849						4007			2454	
Approach Delay, s/veh		106.7						60.3			27.4	
Approach LOS		F						E			C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	10.0	84.2		45.0		94.2
Change Period (Y+Rc), s	3.5	4.5		* 4.2		4.5
Max Green Setting (Gmax), s	6.5	79.7		* 41		89.7
Max Q Clear Time (g_c+I1), s	8.5	81.7		42.8		45.9
Green Ext Time (p_c), s	0.0	0.0		0.0		24.9

Intersection Summary	
HCM 6th Ctrl Delay	60.9
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

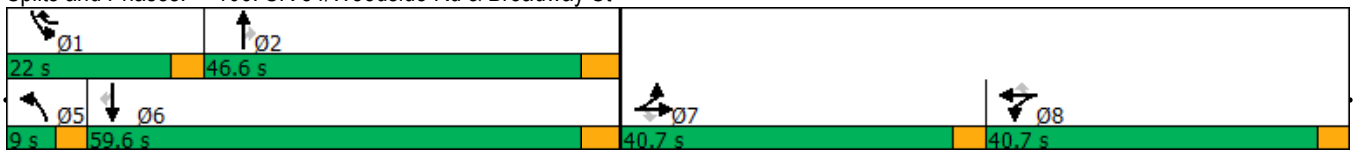


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	344	136	164	309	888	166	2130	81	866	1869	368
Future Volume (vph)	670	344	136	164	309	888	166	2130	81	866	1869	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		130	400		400	275		275	550		450
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	40			50			80			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.92	0.97								
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1719	3438	1538	3242	4803	1495	3155	4673	1455
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1463	1660	3438	1538	3242	4803	1495	3155	4673	1455
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			148			38			84			387
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1179			2103			625			589	
Travel Time (s)		32.2			57.4			12.2			11.5	
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Peak Hour Factor	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Adj. Flow (vph)	770	395	156	191	359	1033	180	2315	88	952	2054	404
Shared Lane Traffic (%)												
Lane Group Flow (vph)	770	395	156	191	359	1033	180	2315	88	952	2054	404
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Detector Phase	7	7	7	8	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	16.0	16.0	4.0	10.0	10.0
Minimum Split (s)	40.7	40.7	40.7	40.7	40.7	7.6	7.6	29.5	29.5	7.6	29.5	29.5
Total Split (s)	40.7	40.7	40.7	40.7	40.7	22.0	9.0	46.6	46.6	22.0	59.6	59.6
Total Split (%)	27.1%	27.1%	27.1%	27.1%	27.1%	14.7%	6.0%	31.1%	31.1%	14.7%	39.7%	39.7%
Maximum Green (s)	37.0	37.0	37.0	37.0	37.0	18.4	5.4	42.1	42.1	18.4	55.1	55.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Time Before Reduce (s)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	0.8	1.0	1.0
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	Max	Max	Max	Max	Max	None	None	Max	Max	None	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Flash Dont Walk (s)	33.0	33.0	33.0	33.0	33.0			21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)	49	49	49	0	0			0	0		0	0
Act Effct Green (s)	37.0	37.0	37.0	37.0	37.0	59.1	5.4	42.1	42.1	18.4	55.1	55.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.39	0.04	0.28	0.28	0.12	0.37	0.37
v/c Ratio	0.91	0.45	0.33	0.45	0.42	1.64	1.55	1.72	0.18	2.46	1.20	0.52
Control Delay	70.4	49.9	9.6	52.0	49.4	326.3	329.7	358.9	9.5	690.1	136.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1
Total Delay	70.4	49.9	9.6	52.0	49.4	326.3	329.7	358.9	9.5	690.1	136.2	6.4
LOS	E	D	A	D	D	F	F	F	A	F	F	A
Approach Delay		57.1			230.4			344.9			275.5	
Approach LOS		E			F			F			F	

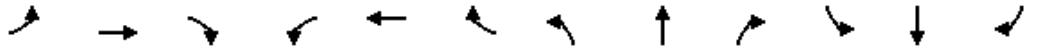
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 2.46			
Intersection Signal Delay: 255.2		Intersection LOS: F	
Intersection Capacity Utilization 125.7%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 106: SR 84/Woodside Rd & Broadway St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	670	344	136	164	309	888	166	2130	81	866	1869	368
Future Volume (vph)	670	344	136	164	309	888	166	2130	81	866	1869	368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	1.00	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	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1463	1719	3438	1538	3242	4803	1495	3155	4673	1455
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1463	1719	3438	1538	3242	4803	1495	3155	4673	1455
Peak-hour factor, PHF	0.87	0.87	0.87	0.86	0.86	0.86	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	770	395	156	191	359	1033	180	2315	88	952	2054	404
RTOR Reduction (vph)	0	0	111	0	0	24	0	0	60	0	0	245
Lane Group Flow (vph)	770	395	45	191	359	1009	180	2315	28	952	2054	159
Confl. Peds. (#/hr)			49	49								
Confl. Bikes (#/hr)			7									
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	8%	8%	8%	11%	11%	11%
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	37.0	37.0	37.0	37.0	37.0	55.4	5.4	42.1	42.1	18.4	55.1	55.1
Effective Green, g (s)	37.0	37.0	37.0	37.0	37.0	55.4	5.4	42.1	42.1	18.4	55.1	55.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.37	0.04	0.28	0.28	0.12	0.37	0.37
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Lane Grp Cap (vph)	846	872	360	424	848	568	116	1348	419	387	1716	534
v/s Ratio Prot	c0.22	0.11		0.11	0.10	c0.22	0.06	c0.48		c0.30	0.44	
v/s Ratio Perm			0.03			0.44			0.02			0.11
v/c Ratio	0.91	0.45	0.12	0.45	0.42	1.78	1.55	1.72	0.07	2.46	1.20	0.30
Uniform Delay, d1	54.9	47.9	43.9	47.9	47.5	47.3	72.3	54.0	39.5	65.8	47.5	33.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	15.6	1.7	0.7	3.4	1.5	356.5	286.1	326.0	0.3	664.7	94.6	1.4
Delay (s)	70.4	49.6	44.6	51.3	49.1	403.8	358.4	379.9	39.8	730.5	142.1	35.1
Level of Service	E	D	D	D	D	F	F	F	D	F	F	D
Approach Delay (s)		61.2			280.8			366.8			293.7	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	278.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	125.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



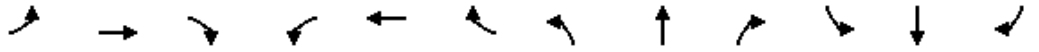
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	490	155	755	525	313	175	2485	688	284	1815	103
Future Volume (vph)	262	490	155	755	525	313	175	2485	688	284	1815	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		0.99		1.00								
Frt		0.964				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3422	0	3400	1845	1568	1770	3539	1583	3273	3374	1509
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	3422	0	3394	1845	1568	1770	3539	1583	3273	3374	1509
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25				40			34			59
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			1060			1475			776	
Travel Time (s)		19.2			24.1			28.7			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			10									
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	2%	2%	2%	7%	7%	7%
Adj. Flow (vph)	298	557	176	812	565	337	182	2589	717	326	2086	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	298	733	0	812	565	337	182	2589	717	326	2086	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	18.0	26.0		24.0	32.0	14.0	13.0	77.6	24.0	14.0	78.6	18.0
Total Split (%)	12.7%	18.4%		16.9%	22.6%	9.9%	9.2%	54.8%	16.9%	9.9%	55.5%	12.7%
Maximum Green (s)	14.8	21.8		20.8	27.8	10.8	9.8	72.6	20.8	10.8	73.6	14.8
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	14.8	23.7		20.8	29.7	44.8	9.8	72.6	98.4	10.8	73.6	93.4
Actuated g/C Ratio	0.10	0.17		0.14	0.21	0.31	0.07	0.51	0.69	0.08	0.51	0.65
v/c Ratio	1.62	1.25		1.65	1.48	0.65	1.52	1.45	0.65	1.33	1.21	0.12
Control Delay	342.6	173.0		338.2	268.7	44.0	310.7	233.9	16.2	221.3	131.0	5.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	342.6	173.0		338.2	268.7	44.0	310.7	233.9	16.2	221.3	131.0	5.5
LOS	F	F		F	F	D	F	F	B	F	F	A
Approach Delay		222.0			257.5			193.2			136.8	
Approach LOS		F			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 141.6			
Actuated Cycle Length: 143.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.65			
Intersection Signal Delay: 192.9		Intersection LOS: F	
Intersection Capacity Utilization 133.3%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	262	490	155	755	525	313	175	2485	688	284	1815	103
Future Volume (veh/h)	262	490	155	755	525	313	175	2485	688	284	1815	103
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1856	1856	1856	1870	1870	1870	1796	1796	1796
Adj Flow Rate, veh/h	298	557	176	812	565	337	182	2589	717	326	2086	118
Peak Hour Factor	0.88	0.88	0.88	0.93	0.93	0.93	0.96	0.96	0.96	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	3	3	3	2	2	2	7	7	7
Cap, veh/h	188	409	129	504	364	428	123	1822	1046	253	1774	950
Arrive On Green	0.10	0.15	0.15	0.15	0.20	0.20	0.07	0.51	0.51	0.08	0.52	0.52
Sat Flow, veh/h	1795	2658	837	3428	1856	1568	1781	3554	1585	3319	3413	1522
Grp Volume(v), veh/h	298	375	358	812	565	337	182	2589	717	326	2086	118
Grp Sat Flow(s),veh/h/ln	1795	1791	1704	1714	1856	1568	1781	1777	1585	1659	1706	1522
Q Serve(g_s), s	14.8	21.8	21.8	20.8	27.8	27.8	9.8	72.6	39.8	10.8	73.6	4.5
Cycle Q Clear(g_c), s	14.8	21.8	21.8	20.8	27.8	27.8	9.8	72.6	39.8	10.8	73.6	4.5
Prop In Lane	1.00		0.49	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	276	262	504	364	428	123	1822	1046	253	1774	950
V/C Ratio(X)	1.59	1.36	1.37	1.61	1.55	0.79	1.48	1.42	0.69	1.29	1.18	0.12
Avail Cap(c_a), veh/h	188	276	262	504	364	428	123	1822	1046	253	1774	950
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.4	59.9	59.9	60.4	56.9	47.7	65.9	34.5	15.0	65.4	34.0	10.8
Incr Delay (d2), s/veh	288.4	183.1	187.4	284.7	261.1	8.7	252.7	192.7	1.6	156.0	85.4	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	21.8	23.9	23.1	29.0	39.4	12.1	13.1	78.8	14.2	10.0	50.2	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	351.8	243.0	247.3	345.1	318.0	56.5	318.6	227.2	16.5	221.4	119.4	10.9
LnGrp LOS	F	F	F	F	F	E	F	F	B	F	F	B
Approach Vol, veh/h		1031			1714			3488			2530	
Approach Delay, s/veh		275.9			279.4			188.7			127.5	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.0	77.6	24.0	26.0	13.0	78.6	18.0	32.0
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	10.8	72.6	20.8	* 22	9.8	73.6	14.8	* 28
Max Q Clear Time (g_c+I1), s	12.8	74.6	22.8	23.8	11.8	75.6	16.8	29.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	199.0
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	13	13	273	11	32	15	0	407	17	12	0
Future Volume (vph)	0	13	13	273	11	32	15	0	407	17	12	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.932			0.986			0.870				
Flt Protected					0.959			0.998		0.950		
Satd. Flow (prot)	0	1671	0	0	1711	0	0	1571	0	1703	1792	0
Flt Permitted					0.959			0.998		0.950		
Satd. Flow (perm)	0	1671	0	0	1711	0	0	1571	0	1703	1792	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)									5	5		
Confl. Bikes (#/hr)			16			11			33			15
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles (%)	6%	6%	6%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Adj. Flow (vph)	0	15	15	307	12	36	17	0	463	20	14	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	30	0	0	355	0	0	480	0	20	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

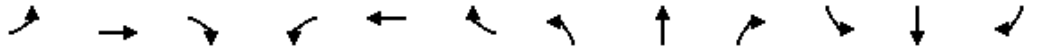
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.2%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	14.6
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	13	13	273	11	32	15	0	407	17	12	0
Future Vol, veh/h	0	13	13	273	11	32	15	0	407	17	12	0
Peak Hour Factor	0.85	0.85	0.85	0.89	0.89	0.89	0.88	0.88	0.88	0.85	0.85	0.85
Heavy Vehicles, %	6	6	6	5	5	5	5	5	5	6	6	6
Mvmt Flow	0	15	15	307	12	36	17	0	463	20	14	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	8.9	14.6	15.3	9.6
HCM LOS	A	B	C	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	86%	100%	0%
Vol Thru, %	0%	50%	3%	0%	100%
Vol Right, %	96%	50%	10%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	422	26	316	17	12
LT Vol	15	0	273	17	0
Through Vol	0	13	11	0	12
RT Vol	407	13	32	0	0
Lane Flow Rate	480	31	355	20	14
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.628	0.048	0.536	0.038	0.025
Departure Headway (Hd)	4.712	5.597	5.434	6.813	6.304
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	772	638	664	525	567
Service Time	2.712	3.644	3.466	4.557	4.049
HCM Lane V/C Ratio	0.622	0.049	0.535	0.038	0.025
HCM Control Delay	15.3	8.9	14.6	9.8	9.2
HCM Lane LOS	C	A	B	A	A
HCM 95th-tile Q	4.5	0.2	3.2	0.1	0.1



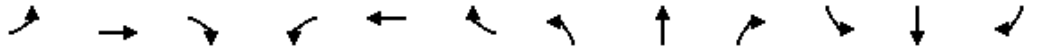
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	535	66	144	693	49	137	226	268	32	144	149
Future Volume (vph)	221	535	66	144	693	49	137	226	268	32	144	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99		0.98		0.97	0.98	0.97		1.00	0.97	
Frt		0.984				0.850		0.919			0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3388	0	1719	3438	1538	1719	1617	0	1687	1599	0
Flt Permitted	0.950			0.950			0.434			0.183		
Satd. Flow (perm)	1732	3388	0	1687	3438	1498	769	1617	0	324	1599	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				110		57			50	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1341			558			661	
Travel Time (s)		32.0			30.5			15.2			18.0	
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Peak Hour Factor	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Adj. Flow (vph)	273	660	81	155	745	53	159	263	312	36	164	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	273	741	0	155	745	53	159	575	0	36	333	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	30.2	47.0		22.4	39.2	39.2	54.0	54.0		54.0	54.0	
Total Split (%)	24.5%	38.1%		18.2%	31.8%	31.8%	43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	25.0	41.8		17.2	34.0	34.0	49.0	49.0		49.0	49.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		24			3	3	51	51		51	51	
Act Effct Green (s)	20.6	34.7		14.0	28.0	28.0	42.4	42.4		42.4	42.4	
Actuated g/C Ratio	0.19	0.32		0.13	0.26	0.26	0.40	0.40		0.40	0.40	
v/c Ratio	0.82	0.67		0.70	0.83	0.11	0.52	0.85		0.28	0.50	
Control Delay	64.0	35.0		65.2	47.6	0.5	34.2	41.4		31.9	24.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	64.0	35.0		65.2	47.6	0.5	34.2	41.4		31.9	24.7	
LOS	E	D		E	D	A	C	D		C	C	
Approach Delay		42.8			47.9			39.8			25.4	
Approach LOS		D			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 107.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 41.6		Intersection LOS: D	
Intersection Capacity Utilization 89.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	535	66	144	693	49	137	226	268	32	144	149
Future Volume (vph)	221	535	66	144	693	49	137	226	268	32	144	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	0.97		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.92		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	3390		1719	3438	1499	1688	1617		1684	1603	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.43	1.00		0.18	1.00	
Satd. Flow (perm)	1736	3390		1719	3438	1499	771	1617		325	1603	
Peak-hour factor, PHF	0.81	0.81	0.81	0.93	0.93	0.93	0.86	0.86	0.86	0.88	0.88	0.88
Adj. Flow (vph)	273	660	81	155	745	53	159	263	312	36	164	169
RTOR Reduction (vph)	0	8	0	0	0	39	0	34	0	0	30	0
Lane Group Flow (vph)	273	733	0	155	745	14	159	541	0	36	303	0
Confl. Peds. (#/hr)	3		24	24		3	43		8	8		43
Confl. Bikes (#/hr)			1						58			2
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	5%	5%	5%	7%	7%	7%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	20.6	34.7		13.9	28.0	28.0	42.4	42.4		42.4	42.4	
Effective Green, g (s)	20.6	34.7		13.9	28.0	28.0	42.4	42.4		42.4	42.4	
Actuated g/C Ratio	0.19	0.33		0.13	0.26	0.26	0.40	0.40		0.40	0.40	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	336	1105		224	904	394	307	644		129	638	
v/s Ratio Prot	c0.16	0.22		0.09	c0.22			c0.33			0.19	
v/s Ratio Perm						0.01	0.21			0.11		
v/c Ratio	0.81	0.66		0.69	0.82	0.04	0.52	0.84		0.28	0.47	
Uniform Delay, d1	41.1	30.8		44.2	36.9	29.2	24.3	28.9		21.7	23.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	13.2	1.2		7.2	5.9	0.0	1.1	9.3		0.9	0.4	
Delay (s)	54.3	32.0		51.4	42.8	29.2	25.4	38.2		22.5	24.1	
Level of Service	D	C		D	D	C	C	D		C	C	
Approach Delay (s)		38.0			43.4			35.4			24.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	106.4	Sum of lost time (s)	15.4
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

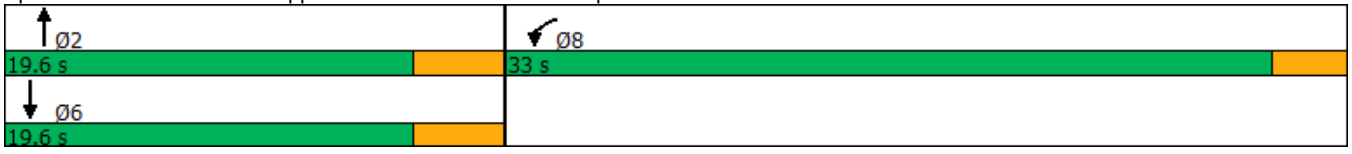


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1153	116	253	0	0	456
Future Volume (vph)	1153	116	253	0	0	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.986					
Flt Protected	0.957					
Satd. Flow (prot)	3344	0	1881	0	0	3539
Flt Permitted	0.957					
Satd. Flow (perm)	3344	0	1881	0	0	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	34					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.85	0.85	0.89	0.89	0.94	0.94
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Adj. Flow (vph)	1356	136	284	0	0	485
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1492	0	284	0	0	485
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	33.0		19.6			19.6
Total Split (%)	62.7%		37.3%			37.3%
Maximum Green (s)	30.0		16.0			16.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			7			
Act Effct Green (s)	19.5		9.7			9.7
Actuated g/C Ratio	0.53		0.27			0.27
v/c Ratio	0.83		0.57			0.51
Control Delay	11.9		17.8			14.5
Queue Delay	0.0		0.0			0.0
Total Delay	11.9		17.8			14.5
LOS	B		B			B
Approach Delay	11.9		17.8			14.5
Approach LOS	B		B			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 36.5			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 126.3%		ICU Level of Service H	
Analysis Period (min) 15			

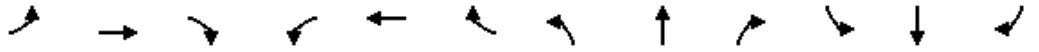
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1153	116	253	0	0	456
Future Volume (vph)	1153	116	253	0	0	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3344		1881			3539
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3344		1881			3539
Peak-hour factor, PHF	0.85	0.85	0.89	0.89	0.94	0.94
Adj. Flow (vph)	1356	136	284	0	0	485
RTOR Reduction (vph)	15	0	0	0	0	0
Lane Group Flow (vph)	1477	0	284	0	0	485
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	19.5		9.7			9.7
Effective Green, g (s)	19.5		9.7			9.7
Actuated g/C Ratio	0.54		0.27			0.27
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1821		509			958
v/s Ratio Prot	c0.44		c0.15			0.14
v/s Ratio Perm						
v/c Ratio	0.81		0.56			0.51
Uniform Delay, d1	6.6		11.2			11.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	2.7		0.8			0.2
Delay (s)	9.3		12.0			11.2
Level of Service	A		B			B
Approach Delay (s)	9.3		12.0			11.2
Approach LOS	A		B			B

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	35.8	Sum of lost time (s)	6.6
Intersection Capacity Utilization	126.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

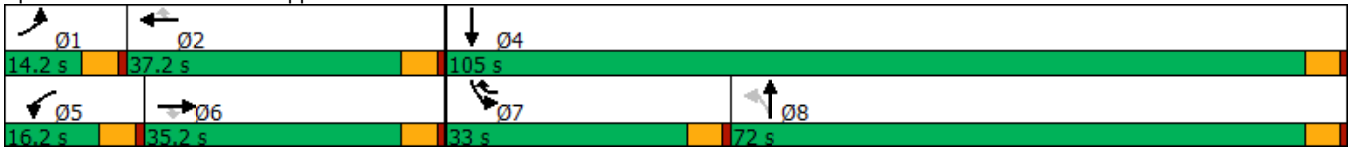


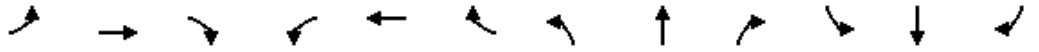
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1084	178	158	18	996	34	1804	181	342	1070	18
Future Volume (vph)	95	1084	178	158	18	996	34	1804	181	342	1070	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor			0.95	0.99				1.00		1.00	1.00	
Frt			0.850			0.850		0.987			0.998	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3433	5085	1583	3400	1845	3575	0	4957	0	1719	3428	0
Flt Permitted	0.950			0.950				0.866		0.950		
Satd. Flow (perm)	3433	5085	1503	3355	1845	3575	0	4297	0	1719	3428	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			85					13			2	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)			28	28			20		4	4		20
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	3%	3%	3%	5%	5%	5%
Adj. Flow (vph)	102	1166	191	178	20	1119	37	1961	197	398	1244	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	102	1166	191	178	20	1119	0	2195	0	398	1265	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	14.2	35.2	35.2	16.2	37.2	33.0	72.0	72.0		33.0	105.0	
Total Split (%)	9.1%	22.5%	22.5%	10.4%	23.8%	21.1%	46.0%	46.0%		21.1%	67.1%	
Maximum Green (s)	9.0	30.0	30.0	11.0	32.0	28.0	67.0	67.0		28.0	100.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		28	28				4	4			20	
Act Effct Green (s)	9.0	31.8	31.8	11.0	33.8	67.0		67.0		28.0	100.0	
Actuated g/C Ratio	0.06	0.20	0.20	0.07	0.21	0.42		0.42		0.18	0.63	
v/c Ratio	0.52	1.14	0.52	0.75	0.05	0.74		1.20		1.31	0.58	
Control Delay	82.9	130.7	36.0	92.1	49.8	41.9		135.9		210.4	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	82.9	130.7	36.0	92.1	49.8	41.9		135.9		210.4	18.4	
LOS	F	F	D	F	D	D		F		F	B	
Approach Delay		114.9			48.8			135.9			64.4	
Approach LOS		F			D			F			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 158.2			
Natural Cycle: 145			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.31			
Intersection Signal Delay: 96.1		Intersection LOS: F	
Intersection Capacity Utilization 119.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	1084	178	158	18	996	34	1804	181	342	1070	18
Future Volume (veh/h)	95	1084	178	158	18	996	34	1804	181	342	1070	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.96	1.00		0.93	1.00		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1856	1856	1856	1856	1856	1856	1826	1826	1826
Adj Flow Rate, veh/h	102	1166	191	178	20	1119	37	1961	197	398	1244	21
Peak Hour Factor	0.93	0.93	0.93	0.89	0.89	0.89	0.92	0.92	0.92	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	3	3	3	3	3	3	5	5	5
Cap, veh/h	196	979	291	241	381	1328	48	1845	184	311	2231	38
Arrive On Green	0.06	0.19	0.19	0.07	0.21	0.21	0.43	0.43	0.43	0.18	0.64	0.64
Sat Flow, veh/h	3456	5106	1516	3428	1856	3341	57	4306	430	1739	3489	59
Grp Volume(v), veh/h	102	1166	191	178	20	1119	774	694	728	398	618	647
Grp Sat Flow(s),veh/h/ln	1728	1702	1516	1714	1856	1114	1669	1537	1587	1739	1735	1814
Q Serve(g_s), s	4.5	30.0	18.2	8.0	1.4	32.1	49.6	67.0	67.0	28.0	31.2	31.3
Cycle Q Clear(g_c), s	4.5	30.0	18.2	8.0	1.4	32.1	67.0	67.0	67.0	28.0	31.2	31.3
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.27	1.00		0.03
Lane Grp Cap(c), veh/h	196	979	291	241	381	1328	739	658	680	311	1109	1160
V/C Ratio(X)	0.52	1.19	0.66	0.74	0.05	0.84	1.05	1.05	1.07	1.28	0.56	0.56
Avail Cap(c_a), veh/h	199	979	291	241	381	1328	739	658	680	311	1109	1160
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.7	63.2	58.4	71.3	49.9	44.4	44.9	44.7	44.7	64.2	15.8	15.8
Incr Delay (d2), s/veh	1.0	96.0	4.3	10.1	0.0	4.8	46.0	50.1	54.8	147.8	0.4	0.4
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	2.0	21.7	7.4	3.9	0.6	14.0	38.8	34.7	36.7	25.2	12.4	12.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.7	159.2	62.7	81.4	49.9	49.2	90.8	94.8	99.5	212.0	16.2	16.2
LnGrp LOS	E	F	E	F	D	D	F	F	F	F	B	B
Approach Vol, veh/h		1459			1317			2195			1663	
Approach Delay, s/veh		140.5			53.6			94.9			63.0	
Approach LOS		F			D			F			E	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	37.3		105.0	16.2	35.2	33.0	72.0				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	9.0	32.0		100.0	11.0	30.0	28.0	67.0				
Max Q Clear Time (g_c+I1), s	6.5	34.1		33.3	10.0	32.0	30.0	69.0				
Green Ext Time (p_c), s	0.0	0.0		7.0	0.0	0.0	0.0	0.0				

Intersection Summary												
HCM 6th Ctrl Delay			88.8									
HCM 6th LOS			F									

Notes

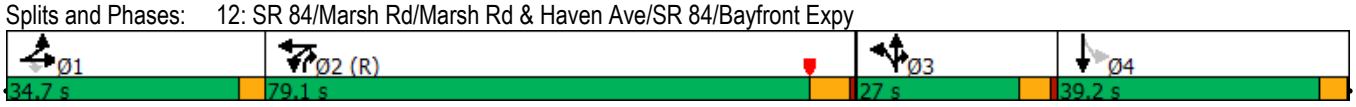
User approved pedestrian interval to be less than phase max green.

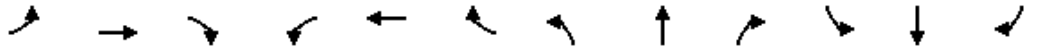
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	127	333	2886	217	15	246	38	1548	9	22	10
Future Volume (vph)	6	127	333	2886	217	15	246	38	1548	9	22	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00						0.99	
Frt			0.850		0.990				0.850		0.964	
Flt Protected		0.998		0.950				0.958			0.989	
Satd. Flow (prot)	0	3567	1599	4942	1819	0	0	1767	3575	0	3424	0
Flt Permitted		0.998		0.950				0.958			0.847	
Satd. Flow (perm)	0	3563	1577	4930	1819	0	0	1767	3575	0	2924	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			401		2						14	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Peak Hour Factor	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	7	153	401	3207	241	17	280	43	1759	13	31	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	160	401	3207	258	0	0	323	1759	0	58	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	34.7	34.7	34.7	79.1	79.1		27.0	27.0		39.2	39.2	
Total Split (%)	19.3%	19.3%	19.3%	43.9%	43.9%		15.0%	15.0%		21.8%	21.8%	
Maximum Green (s)	31.0	31.0	31.0	72.9	72.9		21.9	21.9		35.0	35.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	8	8					12	12	
Act Effct Green (s)		15.3	15.3	106.1	106.1			21.9	133.1		20.6	
Actuated g/C Ratio		0.08	0.08	0.59	0.59			0.12	0.74		0.11	
v/c Ratio		0.53	0.80	1.10	0.24			1.51	0.67		0.17	
Control Delay		83.8	18.5	85.2	22.9			286.6	20.1		51.5	
Queue Delay		0.0	0.0	0.0	0.0			0.0	0.6		0.0	
Total Delay		83.8	18.5	85.2	22.9			286.6	20.8		51.5	
LOS		F	B	F	C			F	C		D	
Approach Delay		37.1			80.5			62.0			51.5	
Approach LOS		D			F			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 180			
Actuated Cycle Length: 180			
Offset: 17 (9%), Referenced to phase 2:WBTL, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.51			
Intersection Signal Delay: 70.0		Intersection LOS: E	
Intersection Capacity Utilization 97.0%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	127	333	2886	217	15	246	38	1548	9	22	10
Future Volume (vph)	6	127	333	2886	217	15	246	38	1548	9	22	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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	0.99			1.00	0.85		0.96	
Flt Protected		1.00	1.00	0.95	1.00			0.96	1.00		0.99	
Satd. Flow (prot)		3566	1577	4942	1820			1768	3575		3412	
Flt Permitted		1.00	1.00	0.95	1.00			0.96	1.00		0.85	
Satd. Flow (perm)		3566	1577	4942	1820			1768	3575		2923	
Peak-hour factor, PHF	0.83	0.83	0.83	0.90	0.90	0.90	0.88	0.88	0.88	0.70	0.70	0.70
Adj. Flow (vph)	7	153	401	3207	241	17	280	43	1759	13	31	14
RTOR Reduction (vph)	0	0	367	0	1	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	160	34	3207	257	0	0	323	1759	0	45	0
Confl. Peds. (#/hr)	8		1	1		8			12	12		
Confl. Bikes (#/hr)						1						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		15.3	15.3	105.2	105.2			21.9	133.3		18.4	
Effective Green, g (s)		15.3	15.3	105.2	105.2			21.9	133.3		18.4	
Actuated g/C Ratio		0.09	0.09	0.58	0.58			0.12	0.74		0.10	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		303	134	2888	1063			215	2647		298	
v/s Ratio Prot		c0.04		c0.65	0.14			c0.18	0.49			
v/s Ratio Perm			0.02								c0.02	
v/c Ratio		0.53	0.25	1.11	0.24			1.50	0.66		0.15	
Uniform Delay, d1		78.9	77.0	37.4	18.1			79.0	11.9		73.7	
Progression Factor		1.00	1.00	1.00	1.00			1.04	1.15		1.00	
Incremental Delay, d2		0.8	0.4	55.3	0.5			234.0	0.2		0.1	
Delay (s)		79.7	77.4	92.7	18.6			316.2	13.9		73.8	
Level of Service		E	E	F	B			F	B		E	
Approach Delay (s)		78.0			87.2			60.8			73.8	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	77.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	180.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

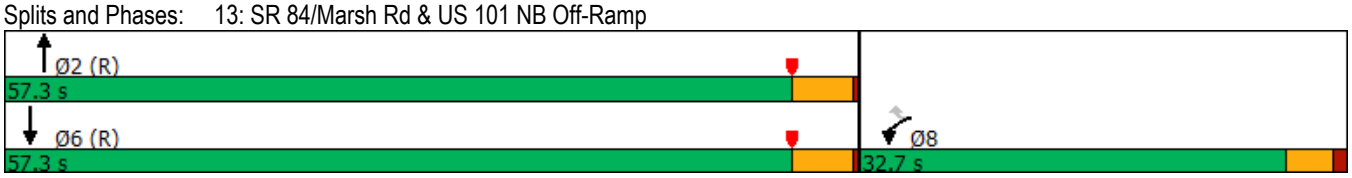


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1031	552	1890	0	0	1192
Future Volume (vph)	1031	552	1890	0	0	1192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		14				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	1074	575	2100	0	0	1255
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1074	575	2100	0	0	1255
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	32.7	32.7	57.3			57.3
Total Split (%)	36.3%	36.3%	63.7%			63.7%
Maximum Green (s)	28.5	28.5	52.7			52.7
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	28.5	28.5	52.7			52.7
Actuated g/C Ratio	0.32	0.32	0.59			0.59
v/c Ratio	1.02	0.66	1.02			0.61
Control Delay	63.9	30.4	35.3			17.2
Queue Delay	0.0	0.7	0.0			0.0
Total Delay	63.9	31.0	35.3			17.2
LOS	E	C	D			B
Approach Delay	52.4		35.3			17.2
Approach LOS	D		D			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 64 (71%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay: 36.4		Intersection LOS: D	
Intersection Capacity Utilization 142.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1031	552	1890	0	0	1192
Future Volume (veh/h)	1031	552	1890	0	0	1192
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	1074	575	2100	0	0	1255
Peak Hour Factor	0.96	0.96	0.90	0.90	0.95	0.95
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	1068	862	2064	0	0	2064
Arrive On Green	0.32	0.32	0.59	0.00	0.00	0.59
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	1074	575	2100	0	0	1255
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	28.5	16.5	52.7	0.0	0.0	20.6
Cycle Q Clear(g_c), s	28.5	16.5	52.7	0.0	0.0	20.6
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1068	862	2064	0	0	2064
V/C Ratio(X)	1.01	0.67	1.02	0.00	0.00	0.61
Avail Cap(c_a), veh/h	1068	862	2064	0	0	2064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	30.8	26.6	18.6	0.0	0.0	12.0
Incr Delay (d2), s/veh	28.8	1.6	24.2	0.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.4	5.4	25.0	0.0	0.0	7.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	59.6	28.2	42.9	0.0	0.0	13.3
LnGrp LOS	F	C	F	A	A	B
Approach Vol, veh/h	1649		2100			1255
Approach Delay, s/veh	48.7		42.9			13.3
Approach LOS	D		D			B

Timer - Assigned Phs		2			6	8
Phs Duration (G+Y+Rc), s		57.3			57.3	32.7
Change Period (Y+Rc), s		4.6			4.6	4.2
Max Green Setting (Gmax), s		52.7			52.7	28.5
Max Q Clear Time (g_c+I1), s		54.7			22.6	30.5
Green Ext Time (p_c), s		0.0			7.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	37.4
HCM 6th LOS	D

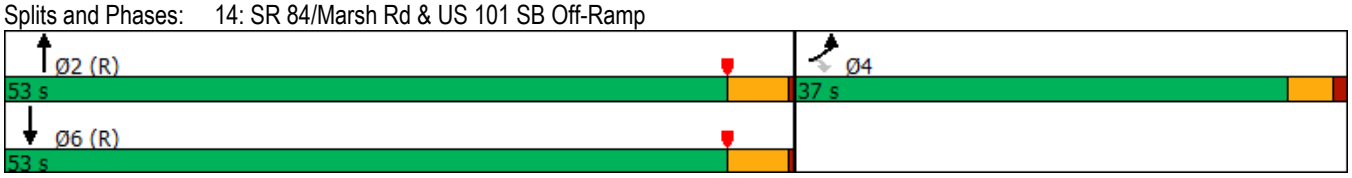


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1314	652	0	1111	2054	0
Future Volume (vph)	1314	652	0	1111	2054	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		3				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	1341	665	0	1157	2257	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1341	665	0	1157	2257	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	37.0	37.0		53.0	53.0	
Total Split (%)	41.1%	41.1%		58.9%	58.9%	
Maximum Green (s)	32.9	32.9		48.4	48.4	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	32.9	32.9		48.4	48.4	
Actuated g/C Ratio	0.37	0.37		0.54	0.54	
v/c Ratio	1.10	1.18		0.60	1.20	
Control Delay	86.7	126.6		15.9	120.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	86.7	126.6		15.9	120.2	
LOS	F	F		B	F	
Approach Delay	99.9			15.9	120.2	
Approach LOS	F			B	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 74 (82%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 90.4		Intersection LOS: F	
Intersection Capacity Utilization 138.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	1314	652	0	1111	2054	0
Future Volume (veh/h)	1314	652	0	1111	2054	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	1341	665	0	1157	2257	0
Peak Hour Factor	0.98	0.98	0.96	0.96	0.91	0.91
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1233	566	0	1926	1896	0
Arrive On Green	0.37	0.37	0.00	0.54	0.54	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	1341	665	0	1157	2257	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	32.9	32.9	0.0	19.8	48.4	0.0
Cycle Q Clear(g_c), s	32.9	32.9	0.0	19.8	48.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1233	566	0	1926	1896	0
V/C Ratio(X)	1.09	1.18	0.00	0.60	1.19	0.00
Avail Cap(c_a), veh/h	1233	566	0	1926	1896	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.6	28.5	0.0	14.2	20.8	0.0
Incr Delay (d2), s/veh	52.8	96.5	0.0	1.4	91.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	21.7	26.7	0.0	7.6	41.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	81.4	125.0	0.0	15.6	112.1	0.0
LnGrp LOS	F	F	A	B	F	A
Approach Vol, veh/h	2006			1157	2257	
Approach Delay, s/veh	95.9			15.6	112.1	
Approach LOS	F			B	F	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		53.0		37.0		53.0
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		48.4		32.9		48.4
Max Q Clear Time (g_c+I1), s		21.8		34.9		50.4
Green Ext Time (p_c), s		3.3		0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	85.5
HCM 6th LOS	F

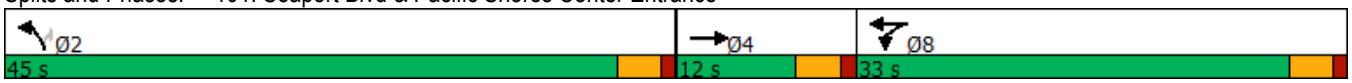
Cumulative Full Project PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	405	348	15	614	250
Future Volume (vph)	6	405	348	15	614	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.867					0.850
Flt Protected				0.954	0.950	
Satd. Flow (prot)	1599	0	0	1795	1752	1568
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	1599	0	0	1795	1752	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	455					321
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.89	0.89	0.70	0.70	0.78	0.78
Heavy Vehicles (%)	3%	3%	1%	1%	3%	3%
Adj. Flow (vph)	7	455	497	21	787	321
Shared Lane Traffic (%)						
Lane Group Flow (vph)	462	0	0	518	787	321
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Detector Phase	4		8	8	2	2
Switch Phase						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	12.0		33.0	33.0	45.0	45.0
Total Split (%)	13.3%		36.7%	36.7%	50.0%	50.0%
Maximum Green (s)	8.0		29.0	29.0	41.0	41.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.0			4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None
Act Effct Green (s)	7.5			27.7	41.1	41.1
Actuated g/C Ratio	0.09			0.31	0.47	0.47
v/c Ratio	0.84			0.92	0.97	0.36
Control Delay	19.5			53.4	49.3	3.0
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	19.5			53.4	49.3	3.0
LOS	B			D	D	A
Approach Delay	19.5			53.4	35.9	
Approach LOS	B			D	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 88.2			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 36.6		Intersection LOS: D	
Intersection Capacity Utilization 89.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 101: Seaport Blvd & Pacific Shores Center Entrance



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	405	348	15	614	250
Future Volume (vph)	6	405	348	15	614	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.87			1.00	1.00	0.85
Flt Protected	1.00			0.95	0.95	1.00
Satd. Flow (prot)	1599			1795	1752	1568
Flt Permitted	1.00			0.95	0.95	1.00
Satd. Flow (perm)	1599			1795	1752	1568
Peak-hour factor, PHF	0.89	0.89	0.70	0.70	0.78	0.78
Adj. Flow (vph)	7	455	497	21	787	321
RTOR Reduction (vph)	416	0	0	0	0	172
Lane Group Flow (vph)	46	0	0	518	787	149
Heavy Vehicles (%)	3%	3%	1%	1%	3%	3%
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Actuated Green, G (s)	7.5			27.6	41.0	41.0
Effective Green, g (s)	7.5			27.6	41.0	41.0
Actuated g/C Ratio	0.09			0.31	0.47	0.47
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	136			562	815	729
v/s Ratio Prot	c0.03			c0.29	c0.45	
v/s Ratio Perm						0.10
v/c Ratio	0.34			0.92	0.97	0.20
Uniform Delay, d1	38.0			29.2	22.9	13.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.5			20.7	23.2	0.1
Delay (s)	39.4			49.9	46.1	14.1
Level of Service	D			D	D	B
Approach Delay (s)	39.4			49.9	36.8	
Approach LOS	D			D	D	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	6	864	750	3
Future Volume (vph)	0	0	6	864	750	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1752	3505	3536	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1752	3505	3536	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.78	0.78	0.80	0.80
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	0	0	8	1108	938	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	8	1108	942	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	6	864	750	3
Future Vol, veh/h	0	0	6	864	750	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	78	78	80	80
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	0	8	1108	938	4

Major/Minor	Minor2		Major2	
Conflicting Flow All	940	940	-	0
Stage 1	940	940	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.86	6.56	-	-
Critical Hdwy Stg 1	5.86	5.56	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.53	4.03	-	-
Pot Cap-1 Maneuver	260	~ 260	-	-
Stage 1	338	~ 338	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	260	0	-	-
Mov Cap-2 Maneuver	260	0	-	-
Stage 1	338	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	260	-	-	-	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	19.3	-	-	-	-
HCM Lane LOS	C	-	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	263	568	58	148	0
Future Volume (vph)	0	263	568	58	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1596	0	1752	1845	1827	0
Flt Permitted			0.950			
Satd. Flow (perm)	1596	0	1752	1845	1827	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			485	412	
Travel Time (s)	10.1			11.0	9.4	
Peak Hour Factor	0.90	0.90	0.87	0.87	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%
Adj. Flow (vph)	0	292	653	67	168	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	292	0	653	67	168	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	59.8
Intersection LOS	F

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	263	568	58	148	0
Future Vol, veh/h	0	263	568	58	148	0
Peak Hour Factor	0.90	0.90	0.87	0.87	0.88	0.88
Heavy Vehicles, %	3	3	3	3	4	4
Mvmt Flow	0	292	653	67	168	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	13.5	89.9	11.4
HCM LOS	B	F	B

Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	568	58	263	148
LT Vol	568	0	0	0
Through Vol	0	58	0	148
RT Vol	0	0	263	0
Lane Flow Rate	653	67	292	168
Geometry Grp	5	5	2	4a
Degree of Util (X)	1.121	0.105	0.448	0.276
Departure Headway (Hd)	6.179	5.673	5.817	6.091
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	594	635	622	594
Service Time	3.885	3.379	3.817	4.091
HCM Lane V/C Ratio	1.099	0.106	0.469	0.283
HCM Control Delay	98.2	9	13.5	11.4
HCM Lane LOS	F	A	B	B
HCM 95th-tile Q	20.7	0.4	2.3	1.1

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	69	49	24	870	750	0	0	70	3
Future Volume (vph)	1	0	69	49	24	870	750	0	0	70	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	60		265			0	0	0	
Storage Lanes		1	1		1			0	0	1	
Taper Length (ft)		25			50				25		
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.865	
Flt Protected		0.950			0.950						
Satd. Flow (prot)	0	1736	1553	0	1719	3438	3539	0	0	1522	0
Flt Permitted		0.950			0.950						
Satd. Flow (perm)	0	1736	1553	0	1719	3438	3539	0	0	1522	0
Right Turn on Red			Yes								No
Satd. Flow (RTOR)			109								
Link Speed (mph)		30				35	35		30		
Link Distance (ft)		369				675	1774		538		
Travel Time (s)		8.4				13.1	34.6		12.2		
Peak Hour Factor	0.78	0.78	0.78	0.82	0.82	0.82	0.80	0.80	0.82	0.82	0.82
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	2%	2%	8%	8%	8%
Adj. Flow (vph)	1	0	88	60	29	1061	938	0	0	85	4
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1	88	0	89	1061	938	0	0	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)		12				12	12		0		
Link Offset(ft)		0				0	0		0		
Crosswalk Width(ft)		16				16	16		16		
Two way Left Turn Lane											
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	1	2	2			1	
Detector Template	Left	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel											
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)						94	94				
Detector 2 Size(ft)						6	6				
Detector 2 Type						Cl+Ex	Cl+Ex				
Detector 2 Channel											
Detector 2 Extend (s)						0.0	0.0				
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Permitted Phases	4		4								
Detector Phase	4	4	4	1	1	2	2			3	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	17.0	17.0	17.0	22.0	22.0		62.6			24.0	
Total Split (%)	13.5%	13.5%	13.5%	17.5%	17.5%		49.8%			19.1%	
Maximum Green (s)	12.0	12.0	12.0	16.8	16.8		57.4			18.8	
Yellow Time (s)	4.0	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0	24.0								
Pedestrian Calls (#/hr)	0	0	0								
Act Effct Green (s)		10.8	10.8		12.7	88.6	61.3			13.8	
Actuated g/C Ratio		0.10	0.10		0.12	0.86	0.59			0.13	
v/c Ratio		0.01	0.34		0.42	0.36	0.45			0.44	
Control Delay		51.0	9.9		54.4	2.6	18.9			54.6	
Queue Delay		0.0	0.0		0.0	0.0	0.0			0.0	
Total Delay		51.0	9.9		54.4	2.6	18.9			54.6	
LOS		D	A		D	A	B			D	
Approach Delay		10.4				6.6	18.9		54.6		
Approach LOS		B				A	B		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 103.2			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.45			
Intersection Signal Delay: 13.7		Intersection LOS: B	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	69	49	24	870	750	0	0	70	3
Future Volume (vph)	1	0	69	49	24	870	750	0	0	70	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00	1.00		1.00	0.95	0.95			1.00	
Frt		1.00	0.85		1.00	1.00	1.00			0.86	
Flt Protected		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1736	1553		1719	3438	3539			1522	
Flt Permitted		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1736	1553		1719	3438	3539			1522	
Peak-hour factor, PHF	0.78	0.78	0.78	0.82	0.82	0.82	0.80	0.80	0.82	0.82	0.82
Adj. Flow (vph)	1	0	88	60	29	1061	938	0	0	85	4
RTOR Reduction (vph)	0	0	82	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	6	0	89	1061	938	0	0	89	0
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	2%	2%	8%	8%	8%
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	
Permitted Phases	4		4								
Actuated Green, G (s)		7.2	7.2		9.5	89.5	59.4			10.2	
Effective Green, g (s)		7.2	7.2		9.5	89.5	59.4			10.2	
Actuated g/C Ratio		0.07	0.07		0.09	0.84	0.56			0.10	
Clearance Time (s)		5.0	5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0	3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		116	104		152	2878	1966			145	
v/s Ratio Prot					c0.05	0.31	c0.27			c0.06	
v/s Ratio Perm		0.00	c0.00								
v/c Ratio		0.01	0.06		0.59	0.37	0.48			0.61	
Uniform Delay, d1		46.5	46.7		46.8	2.0	14.4			46.5	
Progression Factor		1.00	1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.0	0.2		6.7	0.1	0.3			8.5	
Delay (s)		46.5	46.9		53.5	2.2	14.6			55.0	
Level of Service		D	D		D	A	B			D	
Approach Delay (s)		46.9				6.1	14.6		55.0		
Approach LOS		D				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	106.9	Sum of lost time (s)	20.6
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	679	166	932	883	6
Future Volume (vph)	12	679	166	932	883	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.855	0.850			0.999	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1589	1504	1719	3438	3535	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1589	1504	1719	3438	3535	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	361	361			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.79	0.79
Heavy Vehicles (%)	2%	2%	5%	5%	2%	2%
Adj. Flow (vph)	15	838	205	1151	1118	8
Shared Lane Traffic (%)		49%				
Lane Group Flow (vph)	426	427	205	1151	1126	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	29.0	29.0	24.0	70.4	46.4	
Total Split (%)	29.2%	29.2%	24.1%	70.8%	46.7%	
Maximum Green (s)	24.0	24.0	18.8	65.2	41.2	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	13.7	13.7	14.6	51.7	31.7	
Actuated g/C Ratio	0.18	0.18	0.19	0.68	0.42	
v/c Ratio	0.73	0.75	0.62	0.49	0.76	
Control Delay	14.8	16.0	40.1	7.0	23.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.8	16.0	40.1	7.0	23.7	
LOS	B	B	D	A	C	
Approach Delay	15.4			12.0	23.7	
Approach LOS	B			B	C	

Intersection Summary

Area Type: Other
Cycle Length: 99.4
Actuated Cycle Length: 76.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 16.8 Intersection LOS: B
Intersection Capacity Utilization 61.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	679	166	932	883	6
Future Volume (vph)	12	679	166	932	883	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.86	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1590	1504	1719	3438	3535	
Flt Permitted	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1590	1504	1719	3438	3535	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.79	0.79
Adj. Flow (vph)	15	838	205	1151	1118	8
RTOR Reduction (vph)	296	296	0	0	1	0
Lane Group Flow (vph)	130	131	205	1151	1125	0
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	2%	5%	5%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	13.7	13.7	14.6	51.7	31.9	
Effective Green, g (s)	13.7	13.7	14.6	51.7	31.9	
Actuated g/C Ratio	0.18	0.18	0.19	0.68	0.42	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	288	272	331	2351	1491	
v/s Ratio Prot	0.08		c0.12	0.33	c0.32	
v/s Ratio Perm		c0.09				
v/c Ratio	0.45	0.48	0.62	0.49	0.75	
Uniform Delay, d1	27.6	27.8	28.0	5.7	18.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.8	1.0	3.4	0.2	2.2	
Delay (s)	28.4	28.8	31.4	5.8	20.8	
Level of Service	C	C	C	A	C	
Approach Delay (s)	28.6			9.7	20.8	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	75.6	Sum of lost time (s)	15.4
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	171	99	244	91	20	75	945	495	132	1297	133
Future Volume (vph)	133	171	99	244	91	20	75	945	495	132	1297	133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		525	325		75	200		250	400		0
Storage Lanes	1		1	2		1	0		1	1		0
Taper Length (ft)	75			100			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99					0.98					1.00	
Frt			0.850			0.850			0.850		0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	3400	1845	1568	1703	3406	1524	1770	3482	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1722	1827	1553	3400	1845	1531	1703	3406	1524	1770	3482	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			138			481		11	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			754			574			1022	
Travel Time (s)		12.7			17.1			11.2			19.9	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.84	0.84	0.84	0.89	0.89	0.89
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	171	219	127	284	106	23	89	1125	589	148	1457	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	219	127	284	106	23	89	1125	589	148	1606	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	30.0	30.0	13.1	13.1	13.1	13.1	32.1	32.1	14.1	32.1	
Total Split (s)	27.0	30.0	30.0	19.0	22.0	22.0	14.0	66.7	66.7	20.6	73.3	
Total Split (%)	19.8%	22.0%	22.0%	13.9%	16.1%	16.1%	10.3%	48.9%	48.9%	15.1%	53.8%	
Maximum Green (s)	22.0	25.0	25.0	13.9	16.9	16.9	8.9	61.6	61.6	15.5	68.2	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)		7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)		18.0	18.0					20.0	20.0		20.0	
Pedestrian Calls (#/hr)		5	5					0	0		0	
Act Effct Green (s)	18.6	17.2	17.2	12.1	10.6	10.6	8.8	52.4	52.4	12.8	56.4	
Actuated g/C Ratio	0.16	0.15	0.15	0.10	0.09	0.09	0.08	0.45	0.45	0.11	0.49	
v/c Ratio	0.61	0.81	0.36	0.80	0.62	0.09	0.69	0.73	0.62	0.76	0.94	
Control Delay	57.6	72.0	9.2	70.2	71.2	0.7	83.8	29.7	7.8	77.4	39.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	57.6	72.0	9.2	70.2	71.2	0.7	83.8	29.7	7.8	77.4	39.9	
LOS	E	E	A	E	E	A	F	C	A	E	D	
Approach Delay		51.8			66.6			25.3			43.0	
Approach LOS		D			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 136.3			
Actuated Cycle Length: 115.4			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 39.1		Intersection LOS: D	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	171	99	244	91	20	75	945	495	132	1297	133
Future Volume (veh/h)	133	171	99	244	91	20	75	945	495	132	1297	133
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		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1811	1811	1811	1870	1870	1870
Adj Flow Rate, veh/h	171	219	127	284	106	23	89	1125	589	148	1457	149
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.84	0.84	0.84	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	3	3	3	6	6	6	2	2	2
Cap, veh/h	304	279	234	347	147	123	126	1534	684	178	1536	156
Arrive On Green	0.17	0.15	0.15	0.10	0.08	0.08	0.07	0.45	0.45	0.10	0.47	0.47
Sat Flow, veh/h	1753	1841	1544	3428	1856	1543	1725	3441	1535	1781	3249	330
Grp Volume(v), veh/h	171	219	127	284	106	23	89	1125	589	148	791	815
Grp Sat Flow(s),veh/h/ln	1753	1841	1544	1714	1856	1543	1725	1721	1535	1781	1777	1802
Q Serve(g_s), s	9.0	11.5	7.7	8.2	5.6	1.1	5.1	27.1	34.8	8.2	42.6	43.8
Cycle Q Clear(g_c), s	9.0	11.5	7.7	8.2	5.6	1.1	5.1	27.1	34.8	8.2	42.6	43.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	304	279	234	347	147	123	126	1534	684	178	840	852
V/C Ratio(X)	0.56	0.79	0.54	0.82	0.72	0.19	0.71	0.73	0.86	0.83	0.94	0.96
Avail Cap(c_a), veh/h	383	457	384	473	311	259	152	2105	939	274	1204	1221
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.1	41.1	39.5	44.3	45.2	26.4	45.6	23.0	25.1	44.5	25.2	25.5
Incr Delay (d2), s/veh	0.6	1.9	0.7	5.7	2.5	0.3	7.7	0.5	4.8	7.0	9.4	11.4
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	3.9	5.4	3.0	3.7	2.7	0.5	2.4	10.5	13.2	3.9	18.8	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.7	43.0	40.2	50.1	47.7	26.7	53.3	23.4	29.9	51.4	34.6	36.9
LnGrp LOS	D	D	D	D	D	C	D	C	C	D	C	D
Approach Vol, veh/h		517			413			1803			1754	
Approach Delay, s/veh		40.9			48.2			27.0			37.1	
Approach LOS		D			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	52.7	22.4	13.1	15.2	50.0	15.3	20.2
Change Period (Y+Rc), s	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.0
Max Green Setting (Gmax), s	8.9	68.2	22.0	16.9	15.5	61.6	13.9	25.0
Max Q Clear Time (g_c+I1), s	7.1	45.8	11.0	7.6	10.2	36.8	10.2	13.5
Green Ext Time (p_c), s	0.0	1.8	0.0	0.1	0.0	1.4	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	34.5
HCM 6th LOS	C

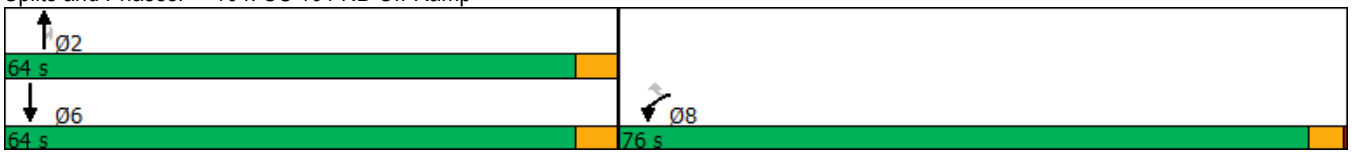


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1407	132	1380	1233	0	1131
Future Volume (vph)	1407	132	1380	1233	0	1131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		140	0	
Storage Lanes	2	1		2	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	1.00	0.91	0.88	1.00	0.91
Frt		0.850		0.850		
Flt Protected	0.950					
Satd. Flow (prot)	3433	1583	5036	2760	0	5085
Flt Permitted	0.950					
Satd. Flow (perm)	3433	1583	5036	2760	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		10		720		
Link Speed (mph)	30		35			35
Link Distance (ft)	385		681			604
Travel Time (s)	8.8		13.3			11.8
Peak Hour Factor	0.92	0.92	0.95	0.95	0.98	0.98
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	1529	143	1453	1298	0	1154
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1529	143	1453	1298	0	1154
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			12
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1		2
Detector Template	Left	Right	Thru	Right		Thru
Leading Detector (ft)	20	20	100	20		100
Trailing Detector (ft)	0	0	0	0		0
Detector 1 Position(ft)	0	0	0	0		0
Detector 1 Size(ft)	20	20	6	20		6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA	Perm		NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8		2		
Detector Phase	8	8	2	2		6
Switch Phase						
Minimum Initial (s)	5.0	5.0	12.0	12.0		12.0
Minimum Split (s)	9.2	9.2	29.5	29.5		16.5
Total Split (s)	76.0	76.0	64.0	64.0		64.0
Total Split (%)	54.3%	54.3%	45.7%	45.7%		45.7%
Maximum Green (s)	71.8	71.8	59.5	59.5		59.5
Yellow Time (s)	3.7	3.7	4.5	4.5		4.5
All-Red Time (s)	0.5	0.5	0.0	0.0		0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)	4.2	4.2	4.5	4.5		4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.5	2.5		2.5
Recall Mode	None	None	Min	Min		Min
Walk Time (s)			4.0	4.0		
Flash Dont Walk (s)			21.0	21.0		
Pedestrian Calls (#/hr)			0	0		
Act Effct Green (s)	59.2	59.2	56.8	56.8		56.8
Actuated g/C Ratio	0.47	0.47	0.45	0.45		0.45
v/c Ratio	0.94	0.19	0.63	0.79		0.50
Control Delay	43.3	18.3	28.7	16.8		26.0
Queue Delay	0.0	0.0	0.0	0.0		0.0
Total Delay	43.3	18.3	28.7	16.8		26.0
LOS	D	B	C	B		C
Approach Delay	41.2		23.1			26.0
Approach LOS	D		C			C

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 124.9			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 29.1		Intersection LOS: C	
Intersection Capacity Utilization 74.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 104: US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1407	132	1380	1233	0	1131
Future Volume (veh/h)	1407	132	1380	1233	0	1131
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1856	1856	0	1870
Adj Flow Rate, veh/h	1529	143	1453	1298	0	1154
Peak Hour Factor	0.92	0.92	0.95	0.95	0.98	0.98
Percent Heavy Veh, %	2	2	3	3	0	2
Cap, veh/h	1582	725	2397	1309	0	2416
Arrive On Green	0.46	0.46	0.47	0.47	0.00	0.47
Sat Flow, veh/h	3456	1585	5233	2768	0	5443
Grp Volume(v), veh/h	1529	143	1453	1298	0	1154
Grp Sat Flow(s),veh/h/ln	1728	1585	1689	1384	0	1702
Q Serve(g_s), s	54.1	6.8	26.6	58.5	0.0	19.3
Cycle Q Clear(g_c), s	54.1	6.8	26.6	58.5	0.0	19.3
Prop In Lane	1.00	1.00		1.00	0.00	
Lane Grp Cap(c), veh/h	1582	725	2397	1309	0	2416
V/C Ratio(X)	0.97	0.20	0.61	0.99	0.00	0.48
Avail Cap(c_a), veh/h	1973	905	2397	1309	0	2416
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.2	20.3	24.5	32.9	0.0	22.5
Incr Delay (d2), s/veh	11.1	0.0	0.4	22.7	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	24.4	2.5	10.5	22.8	0.0	7.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	44.3	20.4	24.9	55.6	0.0	22.7
LnGrp LOS	D	C	C	E	A	C
Approach Vol, veh/h	1672		2751			1154
Approach Delay, s/veh	42.2		39.3			22.7
Approach LOS	D		D			C

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	64.0			64.0	61.8
Change Period (Y+Rc), s	4.5			4.5	4.2
Max Green Setting (Gmax), s	59.5			59.5	71.8
Max Q Clear Time (g_c+I1), s	60.5			21.3	56.1
Green Ext Time (p_c), s	0.0			8.2	1.4

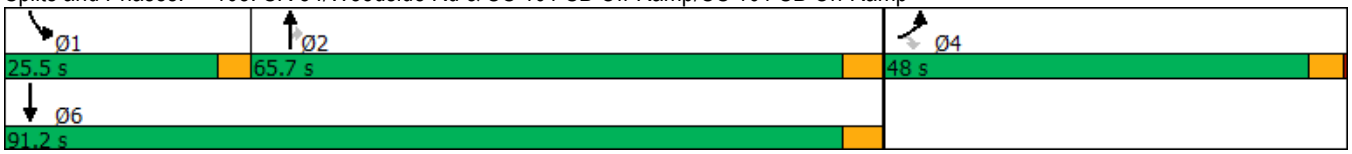
Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	430	0	1210	0	0	0	0	2183	810	550	1987	0
Future Volume (vph)	430	0	1210	0	0	0	0	2183	810	550	1987	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	0		0	100		255	425		0
Storage Lanes	1		1	0		0	0		2	1		0
Taper Length (ft)	50			25			50			25		
Lane Util. Factor	0.97	1.00	0.76	1.00	1.00	1.00	1.00	0.91	0.88	0.97	0.91	1.00
Frt			0.850						0.850			
Flt Protected	0.950									0.950		
Satd. Flow (prot)	3502	0	3682	0	0	0	0	5036	2760	3433	5085	0
Flt Permitted	0.950									0.950		
Satd. Flow (perm)	3502	0	3682	0	0	0	0	5036	2760	3433	5085	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39						524			
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		1002			538			589			681	
Travel Time (s)		22.8			12.2			11.5			13.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	467	0	1315	0	0	0	0	2298	853	561	2028	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	467	0	1315	0	0	0	0	2298	853	561	2028	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1		1					2	1	1	2	
Detector Template	Left		Right					Thru	Right	Left	Thru	
Leading Detector (ft)	20		20					100	20	20	100	
Trailing Detector (ft)	0		0					0	0	0	0	
Detector 1 Position(ft)	0		0					0	0	0	0	
Detector 1 Size(ft)	20		20					6	20	20	6	
Detector 1 Type	Cl+Ex		Cl+Ex					Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	Prot		Perm					NA	Perm	Prot	NA	
Protected Phases	4							2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4						2			
Detector Phase	4		4					2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0		5.0					12.0	12.0	4.0	12.0	
Minimum Split (s)	9.2		9.2					29.5	29.5	7.5	16.5	
Total Split (s)	48.0		48.0					65.7	65.7	25.5	91.2	
Total Split (%)	34.5%		34.5%					47.2%	47.2%	18.3%	65.5%	
Maximum Green (s)	43.8		43.8					61.2	61.2	22.0	86.7	
Yellow Time (s)	3.7		3.7					4.5	4.5	3.5	4.5	
All-Red Time (s)	0.5		0.5					0.0	0.0	0.0	0.0	
Lost Time Adjust (s)	0.0		0.0					0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.2		4.2					4.5	4.5	3.5	4.5	
Lead/Lag								Lag	Lag	Lead		
Lead-Lag Optimize?								Yes	Yes	Yes		
Vehicle Extension (s)	1.0		1.0					2.5	2.5	2.0	2.5	
Recall Mode	None		None					Min	Min	None	Min	
Walk Time (s)								4.0	4.0			
Flash Dont Walk (s)								21.0	21.0			
Pedestrian Calls (#/hr)								0	0			
Act Effct Green (s)	43.8		43.8					61.2	61.2	22.0	86.7	
Actuated g/C Ratio	0.31		0.31					0.44	0.44	0.16	0.62	
v/c Ratio	0.42		1.11					1.04	0.57	1.04	0.64	
Control Delay	39.2		104.4					68.0	11.7	104.2	17.6	
Queue Delay	0.0		0.0					25.8	0.2	0.0	0.9	
Total Delay	39.2		104.4					93.8	11.9	104.2	18.5	
LOS	D		F					F	B	F	B	
Approach Delay		87.3						71.6			37.1	
Approach LOS		F						E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 139.2			
Actuated Cycle Length: 139.2			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.11			
Intersection Signal Delay: 63.4		Intersection LOS: E	
Intersection Capacity Utilization 80.6%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 105: SR 84/Woodside Rd & US 101 SB Off-Ramp/US 101 SB On-Ramp



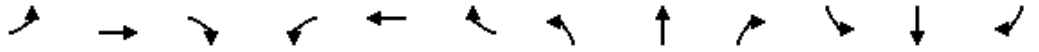
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	430	0	1210	0	0	0	0	2183	810	550	1987	0
Future Volume (veh/h)	430	0	1210	0	0	0	0	2183	810	550	1987	0
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No						No			No	
Adj Sat Flow, veh/h/ln	1900	0	1900				0	1856	1856	1870	1870	0
Adj Flow Rate, veh/h	467	0	1315				0	2298	853	561	2028	0
Peak Hour Factor	0.92	0.92	0.92				0.95	0.95	0.95	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0				0	3	3	2	2	0
Cap, veh/h	1105	0	1155				0	2227	1217	546	3180	0
Arrive On Green	0.31	0.00	0.31				0.00	0.44	0.44	0.16	0.62	0.00
Sat Flow, veh/h	3510	0	3671				0	5233	2768	3456	5274	0
Grp Volume(v), veh/h	467	0	1315				0	2298	853	561	2028	0
Grp Sat Flow(s),veh/h/ln	1755	0	1224				0	1689	1384	1728	1702	0
Q Serve(g_s), s	14.6	0.0	43.8				0.0	61.2	34.8	22.0	34.6	0.0
Cycle Q Clear(g_c), s	14.6	0.0	43.8				0.0	61.2	34.8	22.0	34.6	0.0
Prop In Lane	1.00		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	1105	0	1155				0	2227	1217	546	3180	0
V/C Ratio(X)	0.42	0.00	1.14				0.00	1.03	0.70	1.03	0.64	0.00
Avail Cap(c_a), veh/h	1105	0	1155				0	2227	1217	546	3180	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00				0.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.7	0.0	47.7				0.0	39.0	31.6	58.6	16.4	0.0
Incr Delay (d2), s/veh	0.1	0.0	73.2				0.0	27.8	1.7	45.6	0.4	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
%ile BackOfQ(50%),veh/ln	6.4	0.0	21.1				0.0	30.3	11.7	13.0	13.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.8	0.0	120.9				0.0	66.8	33.3	104.2	16.8	0.0
LnGrp LOS	D	A	F				A	F	C	F	B	A
Approach Vol, veh/h		1782						3151			2589	
Approach Delay, s/veh		99.1						57.7			35.8	
Approach LOS		F						E			D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.5	65.7		48.0		91.2
Change Period (Y+Rc), s	3.5	4.5		* 4.2		4.5
Max Green Setting (Gmax), s	22.0	61.2		* 44		86.7
Max Q Clear Time (g_c+I1), s	24.0	63.2		45.8		36.6
Green Ext Time (p_c), s	0.0	0.0		0.0		21.4

Intersection Summary			
HCM 6th Ctrl Delay			60.0
HCM 6th LOS			E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

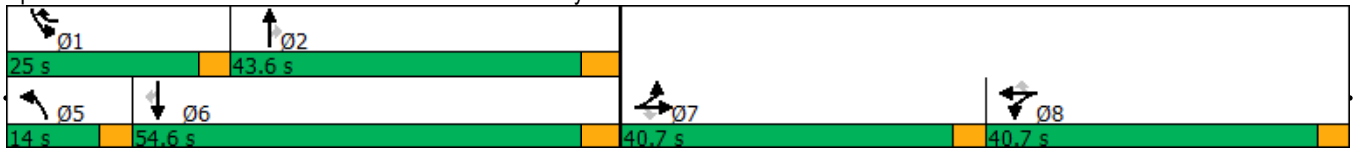


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	721	481	205	286	366	860	346	1412	33	719	2064	414
Future Volume (vph)	721	481	205	286	366	860	346	1412	33	719	2064	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	450		130	400		400	275		275	550		450
Storage Lanes	2		1	1		1	2		1	2		1
Taper Length (ft)	40			50			80			25		
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor			0.95	0.98					0.99			0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	1787	3574	1599	3400	5036	1568	3467	5136	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1503	1754	3574	1599	3400	5036	1548	3467	5136	1579
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			160			38			84			375
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		1179			2103			625			589	
Travel Time (s)		32.2			57.4			12.2			11.5	
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Peak Hour Factor	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	801	534	228	314	402	945	380	1552	36	899	2580	518
Shared Lane Traffic (%)												
Lane Group Flow (vph)	801	534	228	314	402	945	380	1552	36	899	2580	518
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Detector Phase	7	7	7	8	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	4.0	4.0	16.0	16.0	4.0	10.0	10.0
Minimum Split (s)	40.7	40.7	40.7	40.7	40.7	7.6	7.6	29.5	29.5	7.6	29.5	29.5
Total Split (s)	40.7	40.7	40.7	40.7	40.7	25.0	14.0	43.6	43.6	25.0	54.6	54.6
Total Split (%)	27.1%	27.1%	27.1%	27.1%	27.1%	16.7%	9.3%	29.1%	29.1%	16.7%	36.4%	36.4%
Maximum Green (s)	37.0	37.0	37.0	37.0	37.0	21.4	10.4	39.1	39.1	21.4	50.1	50.1
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Minimum Gap (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Time Before Reduce (s)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.0	1.0	0.8	1.0	1.0
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	Max	Max	Max	Max	Max	None	None	Max	Max	None	Max	Max
Walk Time (s)	4.0	4.0	4.0	4.0	4.0			4.0	4.0		4.0	4.0
Flash Dont Walk (s)	33.0	33.0	33.0	33.0	33.0			21.0	21.0		21.0	21.0
Pedestrian Calls (#/hr)	32	32	32	0	0			0	0		0	0
Act Effct Green (s)	37.0	37.0	37.0	37.0	37.0	62.1	10.4	39.1	39.1	21.4	50.1	50.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.41	0.07	0.26	0.26	0.14	0.33	0.33
v/c Ratio	0.95	0.61	0.46	0.71	0.46	1.38	1.62	1.18	0.08	1.82	1.50	0.67
Control Delay	75.7	53.7	18.2	61.9	50.0	214.5	337.3	137.8	0.3	411.1	265.5	15.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2
Total Delay	75.7	53.7	18.2	61.9	50.0	214.5	337.3	137.8	0.3	411.1	265.7	15.9
LOS	E	D	B	E	D	F	F	F	A	F	F	B
Approach Delay		59.8			145.8			173.8			266.1	
Approach LOS		E			F			F			F	

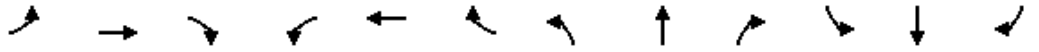
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Natural Cycle: 150			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.82			
Intersection Signal Delay: 189.5		Intersection LOS: F	
Intersection Capacity Utilization 111.5%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 106: SR 84/Woodside Rd & Broadway St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	721	481	205	286	366	860	346	1412	33	719	2064	414
Future Volume (vph)	721	481	205	286	366	860	346	1412	33	719	2064	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Lane Util. Factor	0.97	0.95	1.00	1.00	0.95	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	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	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	3539	1503	1787	3574	1599	3400	5036	1548	3467	5136	1579
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	3539	1503	1787	3574	1599	3400	5036	1548	3467	5136	1579
Peak-hour factor, PHF	0.90	0.90	0.90	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80
Adj. Flow (vph)	801	534	228	314	402	945	380	1552	36	899	2580	518
RTOR Reduction (vph)	0	0	121	0	0	23	0	0	27	0	0	250
Lane Group Flow (vph)	801	534	107	314	402	922	380	1552	9	899	2580	268
Confl. Peds. (#/hr)			32	32								
Confl. Bikes (#/hr)			1						1			1
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Turn Type	Split	NA	Perm	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	7		8	8	1	5	2		1	6	
Permitted Phases			7			8			2			6
Actuated Green, G (s)	37.0	37.0	37.0	37.0	37.0	58.4	10.4	39.1	39.1	21.4	50.1	50.1
Effective Green, g (s)	37.0	37.0	37.0	37.0	37.0	58.4	10.4	39.1	39.1	21.4	50.1	50.1
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.25	0.39	0.07	0.26	0.26	0.14	0.33	0.33
Clearance Time (s)	3.7	3.7	3.7	3.7	3.7	3.6	3.6	4.5	4.5	3.6	4.5	4.5
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	1.0	3.0	3.0
Lane Grp Cap (vph)	846	872	370	440	881	622	235	1312	403	494	1715	527
v/s Ratio Prot	c0.23	0.15		0.18	0.11	c0.21	0.11	0.31		c0.26	c0.50	
v/s Ratio Perm			0.07			0.37			0.01			0.17
v/c Ratio	0.95	0.61	0.29	0.71	0.46	1.48	1.62	1.18	0.02	1.82	1.50	0.51
Uniform Delay, d1	55.5	50.1	45.8	51.7	48.0	45.8	69.8	55.4	41.2	64.3	50.0	40.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	20.4	3.2	2.0	9.5	1.7	225.5	296.5	90.4	0.1	376.8	230.1	3.5
Delay (s)	76.0	53.3	47.8	61.2	49.7	271.3	366.3	145.8	41.4	441.1	280.0	43.6
Level of Service	E	D	D	E	D	F	F	F	D	F	F	D
Approach Delay (s)		64.1			177.9			186.5			285.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	207.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	562	151	786	567	340	203	1876	842	277	1896	65
Future Volume (vph)	221	562	151	786	567	340	203	1876	842	277	1896	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	400		75	200		200	230		80
Storage Lanes	1		0	1		1	1		1	2		1
Taper Length (ft)	25			60			100			65		
Lane Util. Factor	1.00	0.95	0.95	0.97	1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor		1.00		1.00								
Frt		0.968				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3412	0	3467	1881	1599	1752	3505	1568	3467	3574	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3412	0	3463	1881	1599	1752	3505	1568	3467	3574	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23				44			37			64
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		844			1060			1475			776	
Travel Time (s)		19.2			24.1			28.7			15.1	
Confl. Peds. (#/hr)			2	2								
Confl. Bikes (#/hr)			4									
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	3%	3%	3%	1%	1%	1%
Adj. Flow (vph)	257	653	176	845	610	366	218	2017	905	292	1996	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	257	829	0	845	610	366	218	2017	905	292	1996	68
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases						8			2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	4.0	8.0		4.0	8.0	8.0	4.0	10.0	4.0	8.0	10.0	4.0
Minimum Split (s)	7.2	12.2		7.2	12.2	11.2	7.2	32.0	7.2	11.2	32.0	7.2
Total Split (s)	17.0	26.0		25.0	34.0	13.0	15.0	65.6	25.0	13.0	63.6	17.0
Total Split (%)	13.1%	20.1%		19.3%	26.2%	10.0%	11.6%	50.6%	19.3%	10.0%	49.1%	13.1%
Maximum Green (s)	13.8	21.8		21.8	29.8	9.8	11.8	60.6	21.8	9.8	58.6	13.8
Yellow Time (s)	3.2	3.7		3.2	3.7	3.2	3.2	4.5	3.2	3.2	4.5	3.2
All-Red Time (s)	0.0	0.5		0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.2	4.2		3.2	4.2	3.2	3.2	5.0	3.2	3.2	5.0	3.2
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Minimum Gap (s)	1.0	1.0		1.0	1.0	1.0	1.0	2.0	1.0	1.0	2.0	1.0
Time Before Reduce (s)	0.8	0.8		0.8	0.8	0.8	0.8	1.2	0.8	0.8	1.2	0.8
Time To Reduce (s)	0.1	0.1		0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		25.0			25.0			20.0			20.0	
Pedestrian Calls (#/hr)		2			0			0			0	
Act Effct Green (s)	13.8	23.7		21.8	31.7	45.7	11.8	60.6	87.5	9.8	58.6	77.4
Actuated g/C Ratio	0.10	0.18		0.17	0.24	0.35	0.09	0.46	0.66	0.07	0.45	0.59
v/c Ratio	1.39	1.31		1.47	1.35	0.63	1.39	1.25	0.86	1.13	1.25	0.07
Control Delay	246.7	190.7		259.8	208.8	36.5	253.5	149.9	27.1	149.4	152.2	3.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	246.7	190.7		259.8	208.8	36.5	253.5	149.9	27.1	149.4	152.2	3.6
LOS	F	F		F	F	D	F	F	C	F	F	A
Approach Delay		204.0			197.8			121.7			147.6	
Approach LOS		F			F			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 129.6			
Actuated Cycle Length: 131.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.47			
Intersection Signal Delay: 156.1		Intersection LOS: F	
Intersection Capacity Utilization 121.2%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 7: SR 84/Woodside Rd & Middlefield Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	221	562	151	786	567	340	203	1876	842	277	1896	65
Future Volume (veh/h)	221	562	151	786	567	340	203	1876	842	277	1896	65
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		1.00	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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1856	1856	1856	1885	1885	1885
Adj Flow Rate, veh/h	257	653	176	845	610	366	218	2017	905	292	1996	68
Peak Hour Factor	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	1	1	1	3	3	3	1	1	1
Cap, veh/h	190	463	125	586	433	487	161	1649	1000	263	1620	892
Arrive On Green	0.11	0.17	0.17	0.17	0.23	0.23	0.09	0.47	0.47	0.08	0.45	0.45
Sat Flow, veh/h	1781	2754	741	3483	1885	1593	1767	3526	1572	3483	3582	1598
Grp Volume(v), veh/h	257	421	408	845	610	366	218	2017	905	292	1996	68
Grp Sat Flow(s),veh/h/ln	1781	1777	1718	1742	1885	1593	1767	1763	1572	1742	1791	1598
Q Serve(g_s), s	13.8	21.8	21.8	21.8	29.8	26.8	11.8	60.6	60.6	9.8	58.6	2.5
Cycle Q Clear(g_c), s	13.8	21.8	21.8	21.8	29.8	26.8	11.8	60.6	60.6	9.8	58.6	2.5
Prop In Lane	1.00		0.43	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	190	299	289	586	433	487	161	1649	1000	263	1620	892
V/C Ratio(X)	1.35	1.41	1.41	1.44	1.41	0.75	1.35	1.22	0.91	1.11	1.23	0.08
Avail Cap(c_a), veh/h	190	299	289	586	433	487	161	1649	1000	263	1620	892
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.9	53.9	53.9	53.9	49.9	40.6	58.9	34.5	20.2	59.9	35.5	13.2
Incr Delay (d2), s/veh	190.2	202.8	204.4	208.6	196.6	5.8	194.7	106.2	11.2	87.7	110.2	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	16.2	26.5	25.8	26.5	37.6	11.3	13.9	49.2	24.9	7.5	49.4	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	248.1	256.7	258.3	262.5	246.5	46.3	253.6	140.7	31.5	147.6	145.7	13.2
LnGrp LOS	F	F	F	F	F	D	F	F	C	F	F	B
Approach Vol, veh/h		1086			1821			3140			2356	
Approach Delay, s/veh		255.3			213.7			117.1			142.1	
Approach LOS		F			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.0	65.6	25.0	26.0	15.0	63.6	17.0	34.0
Change Period (Y+Rc), s	3.2	5.0	3.2	* 4.2	3.2	5.0	3.2	* 4.2
Max Green Setting (Gmax), s	9.8	60.6	21.8	* 22	11.8	58.6	13.8	* 30
Max Q Clear Time (g_c+I1), s	11.8	62.6	23.8	23.8	13.8	60.6	15.8	31.8
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	162.9
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	12	18	442	10	14	13	9	333	12	16	0
Future Volume (vph)	0	12	18	442	10	14	13	9	333	12	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	50		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.919			0.996			0.873				
Flt Protected					0.955			0.998		0.950		
Satd. Flow (prot)	0	1746	0	0	1772	0	0	1607	0	1805	1900	0
Flt Permitted					0.955			0.998		0.950		
Satd. Flow (perm)	0	1746	0	0	1772	0	0	1607	0	1805	1900	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		438			448			370			336	
Travel Time (s)		11.9			12.2			10.1			9.2	
Confl. Peds. (#/hr)	1					1						
Confl. Bikes (#/hr)			2			26			7			2
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles (%)	0%	0%	0%	2%	2%	2%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	0	16	24	567	13	18	14	10	358	16	21	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	598	0	0	382	0	16	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

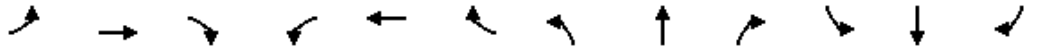
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	26.8
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	12	18	442	10	14	13	9	333	12	16	0
Future Vol, veh/h	0	12	18	442	10	14	13	9	333	12	16	0
Peak Hour Factor	0.75	0.75	0.75	0.78	0.78	0.78	0.93	0.93	0.93	0.75	0.75	0.75
Heavy Vehicles, %	0	0	0	2	2	2	3	3	3	0	0	0
Mvmt Flow	0	16	24	567	13	18	14	10	358	16	21	0
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay	9.2	36.3	15.4	10.3
HCM LOS	A	E	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	4%	0%	95%	100%	0%
Vol Thru, %	3%	40%	2%	0%	100%
Vol Right, %	94%	60%	3%	0%	0%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	355	30	466	12	16
LT Vol	13	0	442	12	0
Through Vol	9	12	10	0	16
RT Vol	333	18	14	0	0
Lane Flow Rate	382	40	597	16	21
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.57	0.064	0.89	0.033	0.041
Departure Headway (Hd)	5.371	5.719	5.364	7.486	6.974
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	668	623	675	476	511
Service Time	3.425	3.787	3.399	5.267	4.754
HCM Lane V/C Ratio	0.572	0.064	0.884	0.034	0.041
HCM Control Delay	15.4	9.2	36.3	10.5	10.1
HCM Lane LOS	C	A	E	B	B
HCM 95th-tile Q	3.6	0.2	11	0.1	0.1

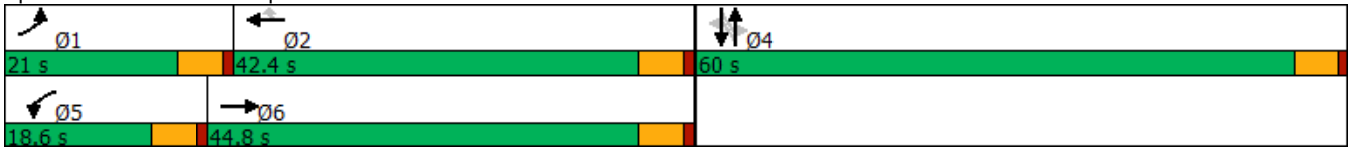


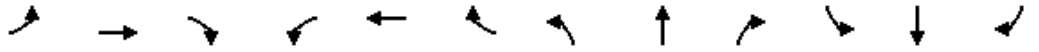
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	522	140	124	809	55	137	178	188	91	275	226
Future Volume (vph)	175	522	140	124	809	55	137	178	188	91	275	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	170		125	145		0	125		0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (ft)	60			50			25			50		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.98		0.97		0.97	0.99	0.99		1.00	0.97	
Frt		0.968				0.850		0.923			0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	3387	0	1770	3539	1583	1770	1698	0	1770	1685	0
Flt Permitted	0.950			0.950			0.225			0.349		
Satd. Flow (perm)	1781	3387	0	1718	3539	1533	413	1698	0	649	1685	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29				64		56			43	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		1406			1835			558			661	
Travel Time (s)		32.0			41.7			15.2			18.0	
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	190	567	152	141	919	63	165	214	227	105	316	260
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	719	0	141	919	63	165	441	0	105	576	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Detector Phase	1	6		5	2	2	4	4		4	4	
Switch Phase												
Minimum Initial (s)	9.0	7.0		9.0	7.0	7.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	33.2		14.2	35.2	35.2	16.0	16.0		16.0	16.0	
Total Split (s)	21.0	44.8		18.6	42.4	42.4	60.0	60.0		60.0	60.0	
Total Split (%)	17.0%	36.3%		15.1%	34.4%	34.4%	48.6%	48.6%		48.6%	48.6%	
Maximum Green (s)	15.8	39.6		13.4	37.2	37.2	55.0	55.0		55.0	55.0	
Yellow Time (s)	4.2	4.2		4.2	4.2	4.2	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Recall Mode	None	Min		None	Min	Min	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		21.0			23.0	23.0	35.0	35.0		35.0	35.0	
Pedestrian Calls (#/hr)		36			6	6	57	57		57	57	
Act Effct Green (s)	14.7	36.1		12.3	33.6	33.6	50.4	50.4		50.4	50.4	
Actuated g/C Ratio	0.13	0.32		0.11	0.29	0.29	0.44	0.44		0.44	0.44	
v/c Ratio	0.83	0.66		0.74	0.89	0.13	0.91	0.57		0.37	0.75	
Control Delay	79.6	36.6		75.9	50.7	8.2	80.2	24.4		27.1	32.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	79.6	36.6		75.9	50.7	8.2	80.2	24.4		27.1	32.6	
LOS	E	D		E	D	A	F	C		C	C	
Approach Delay		45.6			51.5			39.6			31.8	
Approach LOS		D			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 123.4			
Actuated Cycle Length: 114.6			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay: 43.7		Intersection LOS: D	
Intersection Capacity Utilization 92.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 9: Maple St & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	522	140	124	809	55	137	178	188	91	275	226
Future Volume (vph)	175	522	140	124	809	55	137	178	188	91	275	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	0.99		1.00	0.97	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.92		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1787	3392		1770	3539	1534	1746	1698		1766	1688	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.23	1.00		0.35	1.00	
Satd. Flow (perm)	1787	3392		1770	3539	1534	414	1698		649	1688	
Peak-hour factor, PHF	0.92	0.92	0.92	0.88	0.88	0.88	0.83	0.83	0.83	0.87	0.87	0.87
Adj. Flow (vph)	190	567	152	141	919	62	165	214	227	105	316	260
RTOR Reduction (vph)	0	20	0	0	0	44	0	31	0	0	24	0
Lane Group Flow (vph)	190	699	0	141	919	19	165	410	0	105	552	0
Confl. Peds. (#/hr)	6		36	36		6	51		6	6		51
Confl. Bikes (#/hr)			2						13			20
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Prot	NA		Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			4	
Permitted Phases						2	4			4		
Actuated Green, G (s)	14.7	36.1		12.3	33.7	33.7	50.4	50.4		50.4	50.4	
Effective Green, g (s)	14.7	36.1		12.3	33.7	33.7	50.4	50.4		50.4	50.4	
Actuated g/C Ratio	0.13	0.32		0.11	0.30	0.30	0.44	0.44		0.44	0.44	
Clearance Time (s)	5.2	5.2		5.2	5.2	5.2	5.0	5.0		5.0	5.0	
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	230	1072		190	1044	452	182	749		286	744	
v/s Ratio Prot	c0.11	0.21		0.08	c0.26			0.24			0.33	
v/s Ratio Perm						0.01	c0.40			0.16		
v/c Ratio	0.83	0.65		0.74	0.88	0.04	0.91	0.55		0.37	0.74	
Uniform Delay, d1	48.5	33.6		49.4	38.3	28.7	29.7	23.5		21.3	26.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.0	1.1		12.8	8.6	0.0	40.9	0.6		0.6	3.8	
Delay (s)	68.5	34.7		62.2	46.9	28.7	70.6	24.1		21.9	30.3	
Level of Service	E	C		E	D	C	E	C		C	C	
Approach Delay (s)		41.8			47.8			36.8			29.0	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	114.2	Sum of lost time (s)	15.4
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

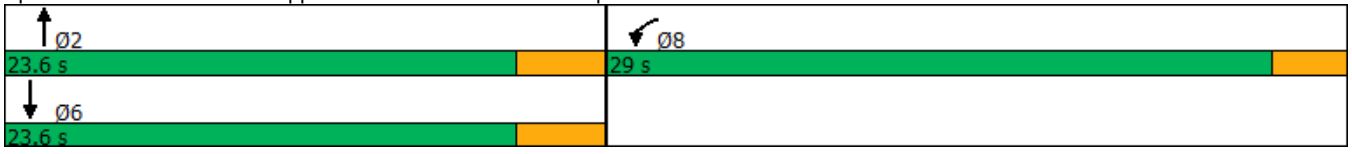


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1240	116	347	0	0	327
Future Volume (vph)	1240	116	347	0	0	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160	0		0	0	
Storage Lanes	0	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.987					
Flt Protected	0.956					
Satd. Flow (prot)	3410	0	1863	0	0	3574
Flt Permitted	0.956					
Satd. Flow (perm)	3410	0	1863	0	0	3574
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27					
Link Speed (mph)	30		30			30
Link Distance (ft)	357		271			209
Travel Time (s)	8.1		6.2			4.8
Peak Hour Factor	0.93	0.93	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Adj. Flow (vph)	1333	125	434	0	0	409
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1458	0	434	0	0	409
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1		2			2
Detector Template	Left		Thru			Thru
Leading Detector (ft)	20		100			100
Trailing Detector (ft)	0		0			0
Detector 1 Position(ft)	0		0			0
Detector 1 Size(ft)	20		6			6
Detector 1 Type	Cl+Ex		Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0			0.0
Detector 1 Queue (s)	0.0		0.0			0.0
Detector 1 Delay (s)	0.0		0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot		NA			NA
Protected Phases	8		2			6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases						
Detector Phase	8		2			6
Switch Phase						
Minimum Initial (s)	4.0		4.0			4.0
Minimum Split (s)	7.0		18.6			7.6
Total Split (s)	29.0		23.6			23.6
Total Split (%)	55.1%		44.9%			44.9%
Maximum Green (s)	26.0		20.0			20.0
Yellow Time (s)	3.0		3.6			3.6
All-Red Time (s)	0.0		0.0			0.0
Lost Time Adjust (s)	0.0		0.0			0.0
Total Lost Time (s)	3.0		3.6			3.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0		1.0			1.0
Minimum Gap (s)	1.0		1.0			1.0
Time Before Reduce (s)	0.5		0.8			0.8
Time To Reduce (s)	0.1		0.1			0.1
Recall Mode	None		Min			Min
Walk Time (s)			4.0			
Flash Dont Walk (s)			11.0			
Pedestrian Calls (#/hr)			0			
Act Effct Green (s)	20.3		13.3			13.3
Actuated g/C Ratio	0.50		0.33			0.33
v/c Ratio	0.85		0.71			0.35
Control Delay	16.0		20.0			11.8
Queue Delay	0.0		0.0			0.0
Total Delay	16.0		20.0			11.8
LOS	B		C			B
Approach Delay	16.0		20.0			11.8
Approach LOS	B		C			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 52.6			
Actuated Cycle Length: 40.7			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 16.0		Intersection LOS: B	
Intersection Capacity Utilization 102.3%		ICU Level of Service G	
Analysis Period (min) 15			

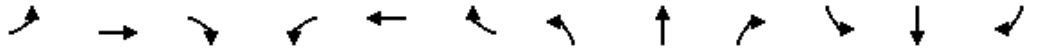
Splits and Phases: 10: Whipple Ave & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1240	116	347	0	0	327
Future Volume (vph)	1240	116	347	0	0	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0		3.6			3.6
Lane Util. Factor	0.97		1.00			0.95
Frt	0.99		1.00			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	3411		1863			3574
Flt Permitted	0.96		1.00			1.00
Satd. Flow (perm)	3411		1863			3574
Peak-hour factor, PHF	0.93	0.93	0.80	0.80	0.80	0.80
Adj. Flow (vph)	1333	125	434	0	0	409
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	1445	0	434	0	0	409
Heavy Vehicles (%)	2%	2%	2%	2%	1%	1%
Turn Type	Prot		NA			NA
Protected Phases	8		2			6
Permitted Phases						
Actuated Green, G (s)	20.3		13.3			13.3
Effective Green, g (s)	20.3		13.3			13.3
Actuated g/C Ratio	0.50		0.33			0.33
Clearance Time (s)	3.0		3.6			3.6
Vehicle Extension (s)	1.0		1.0			1.0
Lane Grp Cap (vph)	1722		616			1182
v/s Ratio Prot	c0.42		c0.23			0.11
v/s Ratio Perm						
v/c Ratio	0.84		0.70			0.35
Uniform Delay, d1	8.5		11.7			10.2
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	3.6		3.0			0.1
Delay (s)	12.1		14.7			10.2
Level of Service	B		B			B
Approach Delay (s)	12.1		14.7			10.2
Approach LOS	B		B			B

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	40.2	Sum of lost time (s)	6.6
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

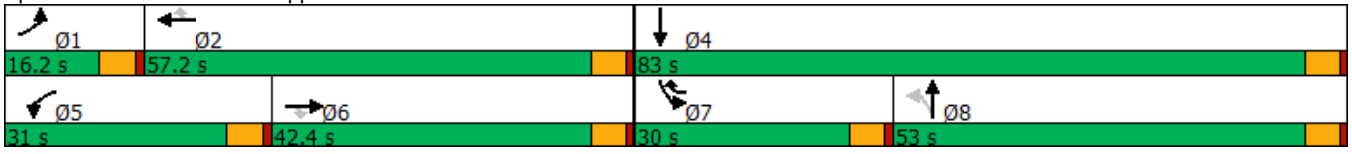


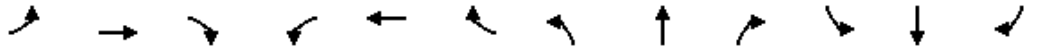
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	976	284	466	30	1277	19	949	155	223	1171	25
Future Volume (vph)	118	976	284	466	30	1277	19	949	155	223	1171	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	160		160	200		200	350		0	200		0
Storage Lanes	2		1	1		1	1		0	0		0
Taper Length (ft)	80			75			50			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	1.00	0.76	0.91	0.91	0.91	1.00	0.95	0.95
Ped Bike Factor	1.00		0.97	0.99		0.98		1.00		1.00	1.00	
Frt			0.850			0.850		0.979			0.997	
Flt Protected	0.950			0.950				0.999		0.950		
Satd. Flow (prot)	3467	5136	1599	3467	1881	3646	0	4962	0	1770	3525	0
Flt Permitted	0.950			0.950				0.880		0.950		
Satd. Flow (perm)	3453	5136	1555	3447	1881	3569	0	4371	0	1769	3525	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)			121					20			2	
Link Speed (mph)		30			30			25			30	
Link Distance (ft)		1009			515			634			241	
Travel Time (s)		22.9			11.7			17.3			5.5	
Confl. Peds. (#/hr)	1		11	11		1	16		2	2		16
Confl. Bikes (#/hr)									3			1
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	133	1097	319	555	36	1520	22	1078	176	248	1301	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	133	1097	319	555	36	1520	0	1276	0	248	1329	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Perm	NA		Prot	NA	
Protected Phases	1	6		5	2	7		8		7	4	
Permitted Phases			6			2	8					
Detector Phase	1	6	6	5	2	7	8	8		7	4	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	11.0	8.0	11.0	11.0	11.0		11.0	11.0	
Minimum Split (s)	14.2	15.2	15.2	16.2	13.2	16.0	44.0	44.0		16.0	44.0	
Total Split (s)	16.2	42.4	42.4	31.0	57.2	30.0	53.0	53.0		30.0	83.0	
Total Split (%)	10.4%	27.1%	27.1%	19.8%	36.6%	19.2%	33.9%	33.9%		19.2%	53.1%	
Maximum Green (s)	11.0	37.2	37.2	25.8	52.0	25.0	48.0	48.0		25.0	78.0	
Yellow Time (s)	4.2	4.2	4.2	4.2	4.2	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	5.2	5.2	5.2	5.2	5.2	5.0		5.0		5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag		Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes		
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Recall Mode	None	Min	Min	None	Min	None	None	None		None	None	
Walk Time (s)		7.0	7.0				7.0	7.0			7.0	
Flash Dont Walk (s)		26.0	26.0				32.0	32.0			32.0	
Pedestrian Calls (#/hr)		11	11				2	2			16	
Act Effct Green (s)	10.1	36.2	36.2	25.7	51.8	76.1		47.0		24.1	76.1	
Actuated g/C Ratio	0.07	0.24	0.24	0.17	0.34	0.50		0.31		0.16	0.50	
v/c Ratio	0.59	0.91	0.69	0.96	0.06	0.85		0.94		0.90	0.76	
Control Delay	81.1	68.3	41.7	91.3	35.8	36.3		65.3		96.2	34.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0	
Total Delay	81.1	68.3	41.7	91.3	35.8	36.3		65.3		96.2	34.8	
LOS	F	E	D	F	D	D		E		F	C	
Approach Delay		63.9			50.8			65.3			44.5	
Approach LOS		E			D			E			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 156.4			
Actuated Cycle Length: 153.5			
Natural Cycle: 125			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 55.2		Intersection LOS: E	
Intersection Capacity Utilization 107.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 11: Whipple Ave & Veterans Blvd





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	976	284	466	30	1277	19	949	155	223	1171	25
Future Volume (veh/h)	118	976	284	466	30	1277	19	949	155	223	1171	25
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		0.95	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	133	1097	319	555	36	1520	22	1078	176	248	1301	28
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.88	0.88	0.88	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	212	1248	382	597	665	1818	39	1210	196	270	1712	37
Arrive On Green	0.06	0.24	0.24	0.17	0.35	0.35	0.30	0.30	0.30	0.15	0.48	0.48
Sat Flow, veh/h	3483	5147	1576	3483	1885	3586	47	4087	662	1781	3555	76
Grp Volume(v), veh/h	133	1097	319	555	36	1520	455	411	410	248	650	679
Grp Sat Flow(s),veh/h/ln	1742	1716	1576	1742	1885	1195	1705	1549	1542	1781	1777	1855
Q Serve(g_s), s	5.5	30.2	28.3	23.1	1.9	52.0	19.9	37.5	37.6	20.2	44.0	44.1
Cycle Q Clear(g_c), s	5.5	30.2	28.3	23.1	1.9	52.0	37.1	37.5	37.6	20.2	44.0	44.1
Prop In Lane	1.00		1.00	1.00		1.00	0.05		0.43	1.00		0.04
Lane Grp Cap(c), veh/h	212	1248	382	597	665	1818	530	459	457	270	856	893
V/C Ratio(X)	0.63	0.88	0.84	0.93	0.05	0.84	0.86	0.90	0.90	0.92	0.76	0.76
Avail Cap(c_a), veh/h	260	1300	398	610	665	1818	578	505	502	302	941	982
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	67.5	53.7	53.0	60.2	31.4	31.4	48.9	49.7	49.7	61.6	31.2	31.2
Incr Delay (d2), s/veh	1.4	6.7	12.9	20.2	0.0	3.4	10.6	16.6	16.9	28.4	2.8	2.7
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	2.5	13.8	12.6	11.9	0.9	16.0	17.6	16.8	16.7	11.3	19.4	20.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.0	60.4	65.9	80.4	31.4	34.8	59.5	66.3	66.6	90.0	34.0	33.9
LnGrp LOS	E	E	E	F	C	C	E	E	E	F	C	C
Approach Vol, veh/h		1549			2111			1276			1577	
Approach Delay, s/veh		62.3			46.7			63.9			42.8	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2		4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.2	57.2		75.9	30.5	40.9	27.3	48.6				
Change Period (Y+Rc), s	5.2	5.2		5.0	5.2	5.2	5.0	5.0				
Max Green Setting (Gmax), s	11.0	52.0		78.0	25.8	37.2	25.0	48.0				
Max Q Clear Time (g_c+I1), s	7.5	54.0		46.1	25.1	32.2	22.2	39.6				
Green Ext Time (p_c), s	0.1	0.0		7.2	0.1	2.8	0.1	4.0				

Intersection Summary			
HCM 6th Ctrl Delay		52.8	
HCM 6th LOS		D	

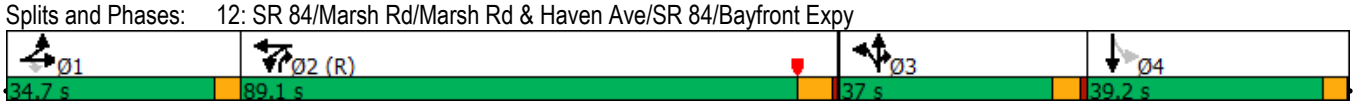
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	244	396	2486	120	6	315	0	2494	24	49	6
Future Volume (vph)	3	244	396	2486	120	6	315	0	2494	24	49	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	135		135	0		0	300		445	50		0
Storage Lanes	1		1	3		0	1		0	1		0
Taper Length (ft)	50			25			100			25		
Lane Util. Factor	0.95	0.95	1.00	0.94	1.00	1.00	1.00	1.00	0.76	0.95	0.95	0.95
Ped Bike Factor		1.00	0.99	1.00	1.00			1.00			1.00	
Frt			0.850		0.993				0.850		0.988	
Flt Protected		0.999		0.950				0.950			0.985	
Satd. Flow (prot)	0	3571	1599	4942	1827	0	0	1752	3575	0	3505	0
Flt Permitted		0.999		0.950				0.950			0.755	
Satd. Flow (perm)	0	3570	1577	4931	1827	0	0	1744	3575	0	2687	0
Right Turn on Red			Yes			Yes			No			Yes
Satd. Flow (RTOR)			372		2						4	
Link Speed (mph)		25			45			35			25	
Link Distance (ft)		617			1484			520			284	
Travel Time (s)		16.8			22.5			10.1			7.7	
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Peak Hour Factor	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Adj. Flow (vph)	3	271	440	2511	121	6	339	0	2682	38	78	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	274	440	2511	127	0	0	339	2682	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		36			36			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Detector Phase	1	1	1	2	2		3	3	2 3	4	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	16.0	16.0		11.0	11.0		11.0	11.0	
Minimum Split (s)	34.7	34.7	34.7	26.2	26.2		16.1	16.1		39.2	39.2	
Total Split (s)	34.7	34.7	34.7	89.1	89.1		37.0	37.0		39.2	39.2	
Total Split (%)	17.4%	17.4%	17.4%	44.6%	44.6%		18.5%	18.5%		19.6%	19.6%	
Maximum Green (s)	31.0	31.0	31.0	82.9	82.9		31.9	31.9		35.0	35.0	
Yellow Time (s)	3.7	3.7	3.7	5.2	5.2		4.1	4.1		3.7	3.7	
All-Red Time (s)	0.0	0.0	0.0	1.0	1.0		1.0	1.0		0.5	0.5	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0			0.0			0.0	
Total Lost Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Lead/Lag	Lead	Lead	Lead	Lag	Lag		Lead	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Minimum Gap (s)	1.5	1.5	1.5	3.5	3.5		1.5	1.5		1.5	1.5	
Time Before Reduce (s)	0.8	0.8	0.8	1.0	1.0		0.8	0.8		0.8	0.8	
Time To Reduce (s)	0.1	0.1	0.1	0.1	0.1		0.1	0.1		0.1	0.1	
Recall Mode	None	None	None	C-Min	C-Min		None	None		None	None	
Walk Time (s)	4.0	4.0	4.0	4.0	4.0					4.0	4.0	
Flash Dont Walk (s)	27.0	27.0	27.0	16.0	16.0					31.0	31.0	
Pedestrian Calls (#/hr)	1	1	1	7	7					2	2	
Act Effct Green (s)		21.5	21.5	110.5	110.5			31.9	147.5		16.9	
Actuated g/C Ratio		0.11	0.11	0.55	0.55			0.16	0.74		0.08	
v/c Ratio		0.72	0.88	0.92	0.13			1.22	1.02		0.55	
Control Delay		96.3	34.1	46.3	24.5			158.8	28.1		92.3	
Queue Delay		0.0	0.0	0.0	0.0			0.0	33.0		0.0	
Total Delay		96.3	34.1	46.3	24.5			158.8	61.1		92.3	
LOS		F	C	D	C			F	E		F	
Approach Delay		58.0			45.3			72.0			92.3	
Approach LOS		E			D			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 200
Actuated Cycle Length: 200
Offset: 58 (29%), Referenced to phase 2:WBTL, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 60.0 Intersection LOS: E
Intersection Capacity Utilization 94.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 12: SR 84/Marsh Rd/Marsh Rd & Haven Ave/SR 84/Bayfront Expy



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	244	396	2486	120	6	315	0	2494	24	49	6
Future Volume (vph)	3	244	396	2486	120	6	315	0	2494	24	49	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.7	3.7	6.2	6.2			5.1	6.2		4.2	
Lane Util. Factor		0.95	1.00	0.94	1.00			1.00	0.76		0.95	
Frpb, ped/bikes		1.00	0.99	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		1.00	
Frt		1.00	0.85	1.00	0.99			1.00	0.85		0.99	
Flt Protected		1.00	1.00	0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)		3572	1577	4942	1827			1752	3575		3506	
Flt Permitted		1.00	1.00	0.95	1.00			0.95	1.00		0.75	
Satd. Flow (perm)		3572	1577	4942	1827			1752	3575		2686	
Peak-hour factor, PHF	0.90	0.90	0.90	0.99	0.99	0.99	0.93	0.93	0.93	0.63	0.63	0.63
Adj. Flow (vph)	3	271	440	2511	121	6	339	0	2682	38	78	10
RTOR Reduction (vph)	0	0	332	0	1	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	274	108	2511	126	0	0	339	2682	0	122	0
Confl. Peds. (#/hr)	7		1	1		7	2					2
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	1%	1%	1%	3%	3%	3%	3%	3%	3%	0%	0%	0%
Turn Type	Split	NA	Perm	Split	NA		Split	NA	pt+ov	Perm	NA	
Protected Phases	1	1		2	2		3	3	2 3		4	
Permitted Phases			1							4		
Actuated Green, G (s)		21.5	21.5	110.5	110.5			31.9	148.6		16.9	
Effective Green, g (s)		21.5	21.5	110.5	110.5			31.9	148.6		16.9	
Actuated g/C Ratio		0.11	0.11	0.55	0.55			0.16	0.74		0.08	
Clearance Time (s)		3.7	3.7	6.2	6.2			5.1			4.2	
Vehicle Extension (s)		1.5	1.5	3.5	3.5			1.5			1.5	
Lane Grp Cap (vph)		383	169	2730	1009			279	2656		226	
v/s Ratio Prot		c0.08		0.51	0.07			c0.19	c0.75			
v/s Ratio Perm			0.07								c0.05	
v/c Ratio		0.72	0.64	0.92	0.12			1.22	1.01		0.54	
Uniform Delay, d1		86.3	85.5	40.7	21.5			84.0	25.7		87.8	
Progression Factor		1.00	1.00	1.00	1.00			0.89	0.63		1.00	
Incremental Delay, d2		5.2	5.7	6.4	0.3			100.0	7.9		1.4	
Delay (s)		91.5	91.2	47.1	21.8			174.7	24.1		89.3	
Level of Service		F	F	D	C			F	C		F	
Approach Delay (s)		91.4			45.9			41.0			89.3	
Approach LOS		F			D			D			F	

Intersection Summary			
HCM 2000 Control Delay	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	19.2
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

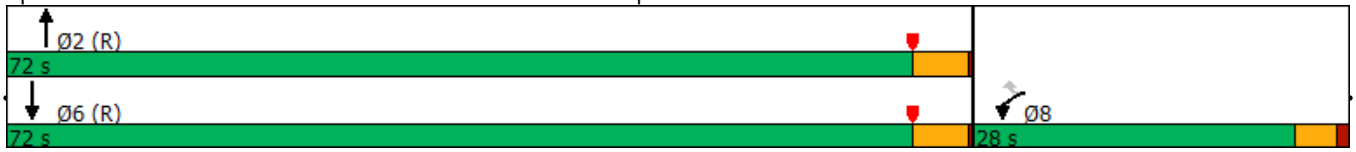


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	850	249	2905	0	0	1280
Future Volume (vph)	850	249	2905	0	0	1280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	360	175		0	0	
Storage Lanes	1	1		0	0	
Taper Length (ft)	75				25	
Lane Util. Factor	0.97	0.88	0.95	1.00	1.00	0.95
Ped Bike Factor		0.98				
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2646	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3				
Link Speed (mph)	30		35			35
Link Distance (ft)	610		326			248
Travel Time (s)	13.9		6.4			4.8
Confl. Peds. (#/hr)		1				
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Heavy Vehicles (%)	5%	5%	3%	3%	3%	3%
Adj. Flow (vph)	924	271	3090	0	0	1376
Shared Lane Traffic (%)						
Lane Group Flow (vph)	924	271	3090	0	0	1376
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (ft)	20	20	100			100
Trailing Detector (ft)	0	0	0			0
Detector 1 Position(ft)	0	0	0			0
Detector 1 Size(ft)	20	20	6			6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	6.0	6.0	9.0			10.0
Minimum Split (s)	24.2	24.2	30.6			14.6
Total Split (s)	28.0	28.0	72.0			72.0
Total Split (%)	28.0%	28.0%	72.0%			72.0%
Maximum Green (s)	23.8	23.8	67.4			67.4
Yellow Time (s)	3.2	3.2	4.1			4.1
All-Red Time (s)	1.0	1.0	0.5			0.5
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	4.2	4.2	4.6			4.6
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0	2.0			2.0
Minimum Gap (s)	1.0	1.0	2.0			2.0
Time Before Reduce (s)	1.0	1.0	1.0			1.0
Time To Reduce (s)	0.1	0.1	0.1			0.1
Recall Mode	None	None	C-Min			C-Min
Walk Time (s)	4.0	4.0	4.0			
Flash Dont Walk (s)	16.0	16.0	22.0			
Pedestrian Calls (#/hr)	0	0	0			
Act Effct Green (s)	23.8	23.8	67.4			67.4
Actuated g/C Ratio	0.24	0.24	0.67			0.67
v/c Ratio	1.17	0.43	1.31			0.58
Control Delay	123.4	34.5	158.9			15.4
Queue Delay	0.0	0.4	0.2			0.0
Total Delay	123.4	34.9	159.1			15.4
LOS	F	C	F			B
Approach Delay	103.4		159.1			15.4
Approach LOS	F		F			B

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 79 (79%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.31			
Intersection Signal Delay: 112.4		Intersection LOS: F	
Intersection Capacity Utilization 168.0%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 13: SR 84/Marsh Rd & US 101 NB Off-Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	850	249	2905	0	0	1280
Future Volume (veh/h)	850	249	2905	0	0	1280
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
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1826	1826	1856	0	0	1856
Adj Flow Rate, veh/h	924	271	3090	0	0	1376
Peak Hour Factor	0.92	0.92	0.94	0.94	0.93	0.93
Percent Heavy Veh, %	5	5	3	0	0	3
Cap, veh/h	803	648	2376	0	0	2376
Arrive On Green	0.24	0.24	0.67	0.00	0.00	0.67
Sat Flow, veh/h	3374	2723	3711	0	0	3711
Grp Volume(v), veh/h	924	271	3090	0	0	1376
Grp Sat Flow(s),veh/h/ln	1687	1362	1763	0	0	1763
Q Serve(g_s), s	23.8	8.4	67.4	0.0	0.0	20.9
Cycle Q Clear(g_c), s	23.8	8.4	67.4	0.0	0.0	20.9
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	803	648	2376	0	0	2376
V/C Ratio(X)	1.15	0.42	1.30	0.00	0.00	0.58
Avail Cap(c_a), veh/h	803	648	2376	0	0	2376
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	38.1	32.2	16.3	0.0	0.0	8.7
Incr Delay (d2), s/veh	82.0	0.2	138.4	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	18.8	2.8	67.3	0.0	0.0	7.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	120.1	32.4	154.7	0.0	0.0	9.8
LnGrp LOS	F	C	F	A	A	A
Approach Vol, veh/h	1195		3090			1376
Approach Delay, s/veh	100.2		154.7			9.8
Approach LOS	F		F			A

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	72.0			72.0	28.0
Change Period (Y+Rc), s	4.6			4.6	4.2
Max Green Setting (Gmax), s	67.4			67.4	23.8
Max Q Clear Time (g_c+I1), s	69.4			22.9	25.8
Green Ext Time (p_c), s	0.0			8.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	108.0
HCM 6th LOS	F

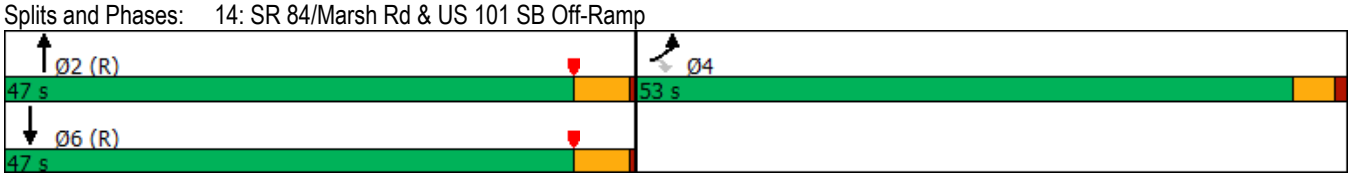


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	2012	708	0	1438	1667	0
Future Volume (vph)	2012	708	0	1438	1667	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	450	0			0
Storage Lanes	2	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	0.97	1.00	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1538	0	3574	3505	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1538	0	3574	3505	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (mph)	30			35	35	
Link Distance (ft)	670			235	248	
Travel Time (s)	15.2			4.6	4.8	
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Heavy Vehicles (%)	5%	5%	1%	1%	3%	3%
Adj. Flow (vph)	2118	745	0	1598	1873	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2118	745	0	1598	1873	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	24			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (ft)	20	20		100	100	
Trailing Detector (ft)	0	0		0	0	
Detector 1 Position(ft)	0	0		0	0	
Detector 1 Size(ft)	20	20		6	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	6.0	6.0		8.0	8.0	
Minimum Split (s)	28.1	28.1		12.6	24.6	
Total Split (s)	53.0	53.0		47.0	47.0	
Total Split (%)	53.0%	53.0%		47.0%	47.0%	
Maximum Green (s)	48.9	48.9		42.4	42.4	
Yellow Time (s)	3.1	3.1		4.1	4.1	
All-Red Time (s)	1.0	1.0		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.1	4.1		4.6	4.6	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	1.0	1.0		1.0	1.0	
Minimum Gap (s)	1.0	1.0		1.0	1.0	
Time Before Reduce (s)	1.0	1.0		1.5	1.5	
Time To Reduce (s)	0.1	0.1		0.1	0.1	
Recall Mode	None	None		C-Min	C-Min	
Walk Time (s)	4.0	4.0			4.0	
Flash Dont Walk (s)	20.0	20.0			16.0	
Pedestrian Calls (#/hr)	0	0			0	
Act Effct Green (s)	48.9	48.9		42.4	42.4	
Actuated g/C Ratio	0.49	0.49		0.42	0.42	
v/c Ratio	1.30	0.99		1.05	1.26	
Control Delay	165.1	57.0		68.4	151.6	
Queue Delay	3.0	0.0		0.0	0.0	
Total Delay	168.1	57.0		68.4	151.6	
LOS	F	E		E	F	
Approach Delay	139.2			68.4	151.6	
Approach LOS	F			E	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 25 (25%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay: 125.0		Intersection LOS: F	
Intersection Capacity Utilization 153.8%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 14: SR 84/Marsh Rd & US 101 SB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2012	708	0	1438	1667	0
Future Volume (veh/h)	2012	708	0	1438	1667	0
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
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1826	1826	0	1885	1856	0
Adj Flow Rate, veh/h	2118	745	0	1598	1873	0
Peak Hour Factor	0.95	0.95	0.90	0.90	0.89	0.89
Percent Heavy Veh, %	5	5	0	1	3	0
Cap, veh/h	1650	757	0	1519	1495	0
Arrive On Green	0.49	0.49	0.00	0.42	0.42	0.00
Sat Flow, veh/h	3374	1547	0	3770	3711	0
Grp Volume(v), veh/h	2118	745	0	1598	1873	0
Grp Sat Flow(s),veh/h/ln	1687	1547	0	1791	1763	0
Q Serve(g_s), s	48.9	47.4	0.0	42.4	42.4	0.0
Cycle Q Clear(g_c), s	48.9	47.4	0.0	42.4	42.4	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1650	757	0	1519	1495	0
V/C Ratio(X)	1.28	0.98	0.00	1.05	1.25	0.00
Avail Cap(c_a), veh/h	1650	757	0	1519	1495	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	25.2	0.0	28.8	28.8	0.0
Incr Delay (d2), s/veh	132.5	28.7	0.0	38.2	119.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	48.6	22.3	0.0	25.0	41.5	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	158.1	53.9	0.0	67.0	148.3	0.0
LnGrp LOS	F	D	A	F	F	A
Approach Vol, veh/h	2863			1598	1873	
Approach Delay, s/veh	131.0			67.0	148.3	
Approach LOS	F			E	F	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		47.0		53.0		47.0
Change Period (Y+Rc), s		4.6		4.1		4.6
Max Green Setting (Gmax), s		42.4		48.9		42.4
Max Q Clear Time (g_c+I1), s		44.4		50.9		44.4
Green Ext Time (p_c), s		0.0		0.0		0.0

Intersection Summary		
HCM 6th Ctrl Delay	120.0	
HCM 6th LOS	F	

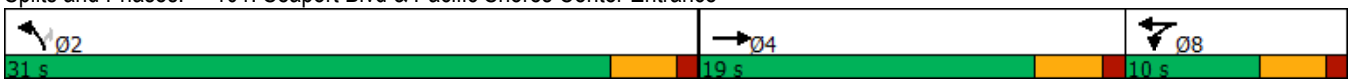
Cumulative Ferry Project AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	429	55	4	391	412
Future Volume (vph)	4	429	55	4	391	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.866					0.850
Flt Protected				0.955	0.950	
Satd. Flow (prot)	1552	0	0	1728	1752	1568
Flt Permitted				0.955	0.950	
Satd. Flow (perm)	1552	0	0	1728	1752	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	482					557
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.89	0.89	0.77	0.77	0.74	0.74
Heavy Vehicles (%)	6%	6%	5%	5%	3%	3%
Adj. Flow (vph)	4	482	71	5	528	557
Shared Lane Traffic (%)						
Lane Group Flow (vph)	486	0	0	76	528	557
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Detector Phase	4		8	8	2	2
Switch Phase						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	19.0		10.0	10.0	31.0	31.0
Total Split (%)	31.7%		16.7%	16.7%	51.7%	51.7%
Maximum Green (s)	15.0		6.0	6.0	27.0	27.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.0			4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None
Act Effct Green (s)	8.8			6.9	18.3	18.3
Actuated g/C Ratio	0.21			0.17	0.44	0.44
v/c Ratio	0.68			0.26	0.68	0.55
Control Delay	8.1			24.4	15.6	3.5
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	8.1			24.4	15.6	3.5
LOS	A			C	B	A
Approach Delay	8.1			24.4	9.4	
Approach LOS	A			C	A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 41.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.7		Intersection LOS: A	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 101: Seaport Blvd & Pacific Shores Center Entrance



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	4	429	55	4	391	412
Future Volume (vph)	4	429	55	4	391	412
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.87			1.00	1.00	0.85
Flt Protected	1.00			0.96	0.95	1.00
Satd. Flow (prot)	1552			1729	1752	1568
Flt Permitted	1.00			0.96	0.95	1.00
Satd. Flow (perm)	1552			1729	1752	1568
Peak-hour factor, PHF	0.89	0.89	0.77	0.77	0.74	0.74
Adj. Flow (vph)	4	482	71	5	528	557
RTOR Reduction (vph)	381	0	0	0	0	315
Lane Group Flow (vph)	105	0	0	76	528	242
Heavy Vehicles (%)	6%	6%	5%	5%	3%	3%
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Actuated Green, G (s)	8.8			2.9	18.2	18.2
Effective Green, g (s)	8.8			2.9	18.2	18.2
Actuated g/C Ratio	0.21			0.07	0.43	0.43
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	325			119	761	681
v/s Ratio Prot	c0.07			c0.04	c0.30	
v/s Ratio Perm						0.15
v/c Ratio	0.32			0.64	0.69	0.36
Uniform Delay, d1	14.0			19.0	9.6	7.9
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.6			10.7	2.8	0.3
Delay (s)	14.6			29.7	12.3	8.2
Level of Service	B			C	B	A
Approach Delay (s)	14.6			29.7	10.2	
Approach LOS	B			C	B	

Intersection Summary			
HCM 2000 Control Delay	12.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	41.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	30	803	483	1
Future Volume (vph)	0	0	30	803	483	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1719	3438	3406	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1719	3438	3406	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.75	0.75	0.88	0.88
Heavy Vehicles (%)	2%	2%	5%	5%	6%	6%
Adj. Flow (vph)	0	0	40	1071	549	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	40	1071	550	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	30	803	483	1
Future Vol, veh/h	0	0	30	803	483	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	75	75	88	88
Heavy Vehicles, %	2	2	5	5	6	6
Mvmt Flow	0	0	40	1071	549	1

Major/Minor	Minor2		Major2	
Conflicting Flow All	550	550	-	0
Stage 1	550	550	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.9	6.6	-	-
Critical Hdwy Stg 1	5.9	5.6	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.55	4.05	-	-
Pot Cap-1 Maneuver	458	~ 435	-	-
Stage 1	533	~ 507	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	458	0	-	-
Mov Cap-2 Maneuver	458	0	-	-
Stage 1	533	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	458	-	-	-	-
HCM Lane V/C Ratio	0.087	-	-	-	-
HCM Control Delay (s)	13.6	-	-	-	-
HCM Lane LOS	B	-	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	378	129	266	55	0
Future Volume (vph)	0	378	129	266	55	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1596	0	1752	1845	1496	0
Flt Permitted			0.950			
Satd. Flow (perm)	1596	0	1752	1845	1496	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			484	416	
Travel Time (s)	10.1			11.0	9.5	
Peak Hour Factor	0.90	0.90	0.77	0.77	0.80	0.80
Heavy Vehicles (%)	3%	3%	3%	3%	27%	27%
Adj. Flow (vph)	0	420	168	345	69	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	168	345	69	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	378	129	266	55	0
Future Vol, veh/h	0	378	129	266	55	0
Peak Hour Factor	0.90	0.90	0.77	0.77	0.80	0.80
Heavy Vehicles, %	3	3	3	3	27	27
Mvmt Flow	0	420	168	345	69	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	13.7	14.1	10.2
HCM LOS	B	B	B

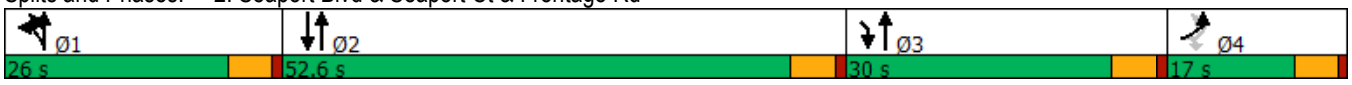
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	129	266	378	55
LT Vol	129	0	0	0
Through Vol	0	266	0	55
RT Vol	0	0	378	0
Lane Flow Rate	168	345	420	69
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.292	0.553	0.555	0.12
Departure Headway (Hd)	6.269	5.763	4.753	6.289
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	576	629	748	572
Service Time	3.972	3.466	2.843	4.302
HCM Lane V/C Ratio	0.292	0.548	0.561	0.121
HCM Control Delay	11.5	15.4	13.7	10.2
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	1.2	3.4	3.5	0.4

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	19	46	22	833	482	2	0	49	1
Future Volume (vph)	0	19	46	22	833	482	2	0	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	60		265			0	0	0	
Storage Lanes	1	1		1			0	0	1	
Taper Length (ft)	25			50				25		
Lane Util. Factor	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor		0.99		1.00						
Frt		0.850				0.999			0.865	
Flt Protected				0.950						
Satd. Flow (prot)	1759	1495	0	1641	3282	3402	0	0	1015	0
Flt Permitted				0.950						
Satd. Flow (perm)	1759	1474	0	1639	3282	3402	0	0	1015	0
Right Turn on Red		Yes								No
Satd. Flow (RTOR)		526								
Link Speed (mph)	30				35	35		30		
Link Distance (ft)	369				675	1774		538		
Travel Time (s)	8.4				13.1	34.6		12.2		
Confl. Peds. (#/hr)		2	1							1
Peak Hour Factor	0.54	0.54	0.78	0.78	0.78	0.89	0.89	0.85	0.85	0.85
Heavy Vehicles (%)	8%	8%	10%	10%	10%	6%	6%	62%	62%	62%
Adj. Flow (vph)	0	35	59	28	1068	542	2	0	58	1
Shared Lane Traffic (%)										
Lane Group Flow (vph)	0	35	0	87	1068	544	0	0	59	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)	12				12	12		0		
Link Offset(ft)	0				0	0		0		
Crosswalk Width(ft)	16				16	16		16		
Two way Left Turn Lane										
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	2	2			1	
Detector Template	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel										
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)					94	94				
Detector 2 Size(ft)					6	6				
Detector 2 Type					Cl+Ex	Cl+Ex				
Detector 2 Channel										
Detector 2 Extend (s)					0.0	0.0				

Lane Group	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Detector Phase	4	4	1	1	2	2			3	
Switch Phase										
Minimum Initial (s)	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	17.0	17.0	26.0	26.0		52.6			30.0	
Total Split (%)	13.5%	13.5%	20.7%	20.7%		41.9%			23.9%	
Maximum Green (s)	12.0	12.0	20.8	20.8		47.4			24.8	
Yellow Time (s)	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)	0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)	5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0								
Pedestrian Calls (#/hr)	2	2								
Act Effct Green (s)		15.0		13.6	72.9	47.5			14.9	
Actuated g/C Ratio		0.18		0.16	0.86	0.56			0.18	
v/c Ratio		0.05		0.33	0.38	0.29			0.33	
Control Delay		0.2		47.5	4.3	20.3			49.3	
Queue Delay		0.0		0.0	0.0	0.0			0.0	
Total Delay		0.2		47.5	4.3	20.3			49.3	
LOS		A		D	A	C			D	
Approach Delay	0.2				7.5	20.3		49.3		
Approach LOS	A				A	C		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 84.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay: 12.6		Intersection LOS: B	
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations										
Traffic Volume (vph)	0	19	46	22	833	482	2	0	49	1
Future Volume (vph)	0	19	46	22	833	482	2	0	49	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00		1.00	0.95	0.95			1.00	
Frpb, ped/bikes		0.99		1.00	1.00	1.00			1.00	
Flpb, ped/bikes		1.00		1.00	1.00	1.00			1.00	
Frt		0.85		1.00	1.00	1.00			0.86	
Flt Protected		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1475		1641	3282	3404			1015	
Flt Permitted		1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1475		1641	3282	3404			1015	
Peak-hour factor, PHF	0.54	0.54	0.78	0.78	0.78	0.89	0.89	0.85	0.85	0.85
Adj. Flow (vph)	0	35	59	28	1068	542	2	0	58	1
RTOR Reduction (vph)	0	32	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	3	0	87	1068	544	0	0	59	0
Confl. Peds. (#/hr)		2	1							1
Heavy Vehicles (%)	8%	8%	10%	10%	10%	6%	6%	62%	62%	62%
Turn Type	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases	4		1	1	1 2 3	2			3	
Permitted Phases		4								
Actuated Green, G (s)		7.3		9.7	72.5	45.3			7.1	
Effective Green, g (s)		7.3		9.7	72.5	45.3			7.1	
Actuated g/C Ratio		0.08		0.11	0.81	0.50			0.08	
Clearance Time (s)		5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		119		176	2643	1713			80	
v/s Ratio Prot				0.05	c0.33	0.16			c0.06	
v/s Ratio Perm		c0.00								
v/c Ratio		0.02		0.49	0.40	0.32			0.74	
Uniform Delay, d1		38.1		37.8	2.5	13.2			40.5	
Progression Factor		1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.1		3.0	0.1	0.1			31.1	
Delay (s)		38.2		40.8	2.7	13.4			71.7	
Level of Service		D		D	A	B			E	
Approach Delay (s)	38.2				5.5	13.4		71.7		
Approach LOS	D				A	B		E		

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

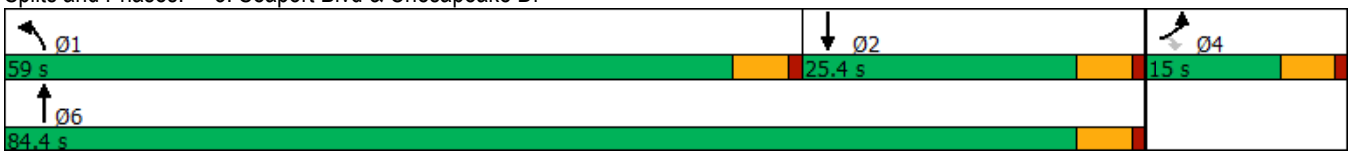


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	99	787	894	541	9
Future Volume (vph)	7	99	787	894	541	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.869	0.850			0.998	
Flt Protected	0.994		0.950			
Satd. Flow (prot)	1440	1346	1736	3471	3245	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1440	1346	1736	3471	3245	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	61	68			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						1
Peak Hour Factor	0.77	0.77	0.84	0.84	0.87	0.87
Heavy Vehicles (%)	14%	14%	4%	4%	11%	11%
Adj. Flow (vph)	9	129	937	1064	622	10
Shared Lane Traffic (%)		47%				
Lane Group Flow (vph)	70	68	937	1064	632	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	15.0	15.0	59.0	84.4	25.4	
Total Split (%)	15.1%	15.1%	59.4%	84.9%	25.6%	
Maximum Green (s)	10.0	10.0	53.8	79.2	20.2	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	10.1	10.1	53.3	79.9	20.1	
Actuated g/C Ratio	0.11	0.11	0.56	0.84	0.21	
v/c Ratio	0.34	0.34	0.97	0.37	0.92	
Control Delay	18.8	15.7	44.9	3.0	58.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.8	15.7	44.9	3.0	58.7	
LOS	B	B	D	A	E	
Approach Delay	17.2			22.6	58.7	
Approach LOS	B			C	E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 95.4			
Natural Cycle: 100			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 30.6		Intersection LOS: C	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	7	99	787	894	541	9
Future Volume (vph)	7	99	787	894	541	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.87	0.85	1.00	1.00	1.00	
Flt Protected	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1440	1346	1736	3471	3244	
Flt Permitted	0.99	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1440	1346	1736	3471	3244	
Peak-hour factor, PHF	0.77	0.77	0.84	0.84	0.87	0.87
Adj. Flow (vph)	9	129	937	1064	622	10
RTOR Reduction (vph)	56	63	0	0	1	0
Lane Group Flow (vph)	14	5	937	1064	631	0
Confl. Bikes (#/hr)						1
Heavy Vehicles (%)	14%	14%	4%	4%	11%	11%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	7.7	7.7	53.3	78.6	20.1	
Effective Green, g (s)	7.7	7.7	53.3	78.6	20.1	
Actuated g/C Ratio	0.08	0.08	0.55	0.81	0.21	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	114	107	958	2827	675	
v/s Ratio Prot	c0.01		c0.54	0.31	c0.19	
v/s Ratio Perm		0.00				
v/c Ratio	0.12	0.05	0.98	0.38	0.94	
Uniform Delay, d1	41.3	41.0	21.0	2.4	37.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.1	23.6	0.1	20.2	
Delay (s)	41.6	41.2	44.6	2.5	57.7	
Level of Service	D	D	D	A	E	
Approach Delay (s)	41.4			22.2	57.7	
Approach LOS	D			C	E	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	15.4
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	95	124	358	121	94	157	1450	311	16	537	86
Future Volume (vph)	137	95	124	358	121	94	157	1450	311	16	537	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		525	325		75	200		250	400		0
Storage Lanes	1		1	2		1	0		1	1		0
Taper Length (ft)	75			100			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00					0.99	1.00				1.00	
Frt			0.850			0.850			0.850		0.979	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1410	1484	1262	3273	1776	1509	1671	3343	1495	1612	3145	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1408	1484	1262	3273	1776	1488	1670	3343	1495	1612	3145	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			144			133			224		15	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			713			574			1022	
Travel Time (s)		12.7			16.2			11.2			19.9	
Confl. Peds. (#/hr)	1					1	1					1
Confl. Bikes (#/hr)												2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.83	0.83	0.83
Heavy Vehicles (%)	28%	28%	28%	7%	7%	7%	8%	8%	8%	12%	12%	12%
Adj. Flow (vph)	159	110	144	402	136	106	174	1611	346	19	647	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	110	144	402	136	106	174	1611	346	19	751	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	30.0	30.0	13.1	13.1	13.1	13.1	32.1	32.1	14.1	32.1	
Total Split (s)	25.0	30.0	30.0	23.0	28.0	28.0	29.9	75.2	75.2	14.1	59.4	
Total Split (%)	17.6%	21.1%	21.1%	16.2%	19.7%	19.7%	21.0%	52.8%	52.8%	9.9%	41.7%	
Maximum Green (s)	20.0	25.0	25.0	17.9	22.9	22.9	24.8	70.1	70.1	9.0	54.3	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)		7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)		18.0	18.0					20.0	20.0		20.0	
Pedestrian Calls (#/hr)		1	1					0	0		1	
Act Effct Green (s)	20.0	14.8	14.8	17.9	12.7	12.7	15.6	61.5	61.5	9.4	45.2	
Actuated g/C Ratio	0.17	0.13	0.13	0.16	0.11	0.11	0.14	0.54	0.54	0.08	0.39	
v/c Ratio	0.65	0.58	0.50	0.79	0.69	0.38	0.77	0.90	0.38	0.15	0.60	
Control Delay	62.3	63.2	14.4	61.2	71.6	8.1	72.3	33.1	7.4	61.4	30.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	62.3	63.2	14.4	61.2	71.6	8.1	72.3	33.1	7.4	61.4	30.0	
LOS	E	E	B	E	E	A	E	C	A	E	C	
Approach Delay		45.8			54.7			32.2			30.8	
Approach LOS		D			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 142.3			
Actuated Cycle Length: 114.7			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay: 37.0		Intersection LOS: D	
Intersection Capacity Utilization 83.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	95	124	358	121	94	157	1450	311	16	537	86
Future Volume (veh/h)	137	95	124	358	121	94	157	1450	311	16	537	86
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		1.00	1.00		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1485	1485	1485	1796	1796	1796	1781	1781	1781	1722	1722	1722
Adj Flow Rate, veh/h	159	110	144	402	136	106	174	1611	346	19	647	104
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.90	0.90	0.90	0.83	0.83	0.83
Percent Heavy Veh, %	28	28	28	7	7	7	8	8	8	12	12	12
Cap, veh/h	253	201	170	458	169	143	202	1687	752	60	1169	188
Arrive On Green	0.18	0.14	0.14	0.14	0.09	0.09	0.12	0.50	0.50	0.04	0.42	0.42
Sat Flow, veh/h	1414	1485	1256	3319	1796	1517	1697	3385	1508	1640	2813	451
Grp Volume(v), veh/h	159	110	144	402	136	106	174	1611	346	19	376	375
Grp Sat Flow(s),veh/h/ln	1414	1485	1256	1659	1796	1517	1697	1692	1508	1640	1636	1628
Q Serve(g_s), s	11.0	7.3	11.8	12.6	7.8	6.1	10.6	48.2	15.8	1.2	18.4	18.5
Cycle Q Clear(g_c), s	11.0	7.3	11.8	12.6	7.8	6.1	10.6	48.2	15.8	1.2	18.4	18.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.28
Lane Grp Cap(c), veh/h	253	201	170	458	169	143	202	1687	752	60	680	677
V/C Ratio(X)	0.63	0.55	0.85	0.88	0.80	0.74	0.86	0.96	0.46	0.32	0.55	0.55
Avail Cap(c_a), veh/h	268	351	297	562	389	329	398	2244	1000	140	840	836
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.1	42.7	44.7	44.7	46.9	34.0	45.7	25.4	17.3	49.7	23.4	23.5
Incr Delay (d2), s/veh	3.0	0.9	4.5	11.1	3.4	2.8	4.1	7.9	0.2	1.1	0.3	0.3
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	4.0	2.7	3.9	5.8	3.6	2.4	4.6	19.7	5.4	0.5	6.9	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.1	43.6	49.1	55.8	50.3	36.8	49.8	33.2	17.4	50.8	23.7	23.7
LnGrp LOS	D	D	D	E	D	D	D	C	B	D	C	C
Approach Vol, veh/h		413			644			2131			770	
Approach Delay, s/veh		45.3			51.5			32.0			24.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.7	49.0	23.9	15.1	8.9	57.8	19.7	19.3
Change Period (Y+Rc), s	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.0
Max Green Setting (Gmax), s	24.8	54.3	20.0	22.9	9.0	70.1	17.9	25.0
Max Q Clear Time (g_c+I1), s	12.6	20.5	13.0	9.8	3.2	50.2	14.6	13.8
Green Ext Time (p_c), s	0.0	0.7	0.0	0.1	0.0	2.5	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	35.1
HCM 6th LOS	D



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	159	110	144	402	136	106	174	1611	346	19	751
v/c Ratio	0.65	0.58	0.50	0.79	0.69	0.38	0.77	0.90	0.38	0.15	0.60
Control Delay (s/veh)	62.3	63.2	14.4	61.2	71.6	8.1	72.3	33.1	7.4	61.4	30.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.3	63.2	14.4	61.2	71.6	8.1	72.3	33.1	7.4	61.4	30.0
Queue Length 50th (ft)	115	80	0	152	100	0	127	461	38	14	218
Queue Length 95th (ft)	211	147	53	#297	189	31	233	#936	136	42	321
Internal Link Dist (ft)		386			633			494			942
Turn Bay Length (ft)	525		525	325		75	200		250	400	
Base Capacity (vph)	262	336	397	531	368	414	376	2125	1032	131	1582
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.33	0.36	0.76	0.37	0.26	0.46	0.76	0.34	0.15	0.47

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

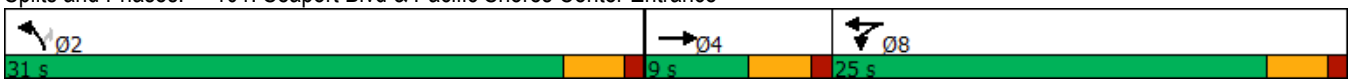
Cumulative Ferry Project PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	270	348	15	449	250
Future Volume (vph)	6	270	348	15	449	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.868					0.850
Flt Protected				0.954	0.950	
Satd. Flow (prot)	1586	0	0	1795	1752	1568
Flt Permitted				0.954	0.950	
Satd. Flow (perm)	1586	0	0	1795	1752	1568
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	303					333
Link Speed (mph)	30			30	30	
Link Distance (ft)	609			423	192	
Travel Time (s)	13.8			9.6	4.4	
Peak Hour Factor	0.89	0.89	0.70	0.70	0.75	0.75
Heavy Vehicles (%)	4%	4%	1%	1%	3%	3%
Adj. Flow (vph)	7	303	497	21	599	333
Shared Lane Traffic (%)						
Lane Group Flow (vph)	310	0	0	518	599	333
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	1
Detector Template	Thru		Left	Thru	Left	Right
Leading Detector (ft)	100		20	100	20	20
Trailing Detector (ft)	0		0	0	0	0
Detector 1 Position(ft)	0		0	0	0	0
Detector 1 Size(ft)	6		20	6	20	20
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	0.0
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Detector Phase	4		8	8	2	2
Switch Phase						

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Minimum Initial (s)	5.0		5.0	5.0	5.0	5.0
Minimum Split (s)	9.0		9.0	9.0	9.0	9.0
Total Split (s)	9.0		25.0	25.0	31.0	31.0
Total Split (%)	13.8%		38.5%	38.5%	47.7%	47.7%
Maximum Green (s)	5.0		21.0	21.0	27.0	27.0
Yellow Time (s)	3.0		3.0	3.0	3.0	3.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.0			4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	None		None	None	None	None
Act Effct Green (s)	5.1			19.9	24.1	24.1
Actuated g/C Ratio	0.08			0.33	0.39	0.39
v/c Ratio	0.76			0.89	0.87	0.41
Control Delay	19.0			41.1	32.8	3.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	19.0			41.1	32.8	3.4
LOS	B			D	C	A
Approach Delay	19.0			41.1	22.3	
Approach LOS	B			D	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 65			
Actuated Cycle Length: 61.2			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 27.2		Intersection LOS: C	
Intersection Capacity Utilization 72.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 101: Seaport Blvd & Pacific Shores Center Entrance



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	6	270	348	15	449	250
Future Volume (vph)	6	270	348	15	449	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0			4.0	4.0	4.0
Lane Util. Factor	1.00			1.00	1.00	1.00
Frt	0.87			1.00	1.00	0.85
Flt Protected	1.00			0.95	0.95	1.00
Satd. Flow (prot)	1586			1795	1752	1568
Flt Permitted	1.00			0.95	0.95	1.00
Satd. Flow (perm)	1586			1795	1752	1568
Peak-hour factor, PHF	0.89	0.89	0.70	0.70	0.75	0.75
Adj. Flow (vph)	7	303	497	21	599	333
RTOR Reduction (vph)	278	0	0	0	0	202
Lane Group Flow (vph)	32	0	0	518	599	131
Heavy Vehicles (%)	4%	4%	1%	1%	3%	3%
Turn Type	NA		Split	NA	Prot	Perm
Protected Phases	4		8	8	2	
Permitted Phases						2
Actuated Green, G (s)	5.1			19.9	24.1	24.1
Effective Green, g (s)	5.1			19.9	24.1	24.1
Actuated g/C Ratio	0.08			0.33	0.39	0.39
Clearance Time (s)	4.0			4.0	4.0	4.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	132			584	691	618
v/s Ratio Prot	c0.02			c0.29	c0.34	
v/s Ratio Perm						0.08
v/c Ratio	0.24			0.89	0.87	0.21
Uniform Delay, d1	26.2			19.5	17.0	12.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.0			15.1	11.1	0.2
Delay (s)	27.2			34.6	28.1	12.4
Level of Service	C			C	C	B
Approach Delay (s)	27.2			34.6	22.5	
Approach LOS	C			C	C	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	61.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	6	699	615	3
Future Volume (vph)	0	0	6	699	615	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	175			0
Storage Lanes	0	0	1			0
Taper Length (ft)	25		50			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Frt					0.999	
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1752	3505	3536	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1752	3505	3536	0
Link Speed (mph)	30			35	35	
Link Distance (ft)	181			546	192	
Travel Time (s)	4.1			10.6	3.7	
Peak Hour Factor	0.92	0.92	0.75	0.75	0.77	0.77
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Adj. Flow (vph)	0	0	8	932	799	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	8	932	803	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	6	699	615	3
Future Vol, veh/h	0	0	6	699	615	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	175	-	-	-
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	75	75	77	77
Heavy Vehicles, %	2	2	3	3	2	2
Mvmt Flow	0	0	8	932	799	4

Major/Minor	Minor2		Major2	
Conflicting Flow All	801	801	-	0
Stage 1	801	801	-	-
Stage 2	0	0	-	-
Critical Hdwy	6.86	6.56	-	-
Critical Hdwy Stg 1	5.86	5.56	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.53	4.03	-	-
Pot Cap-1 Maneuver	320	~ 314	-	-
Stage 1	400	~ 393	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	320	0	-	-
Mov Cap-2 Maneuver	320	0	-	-
Stage 1	400	0	-	-
Stage 2	-	0	-	-

Approach	NB	SB
HCM Control Delay, s		0
HCM LOS	-	

Minor Lane/Major Mvmt	NBLn1	NBLn2	NBLn3	SBT	SBR
Capacity (veh/h)	320	-	-	-	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	16.5	-	-	-	-
HCM Lane LOS	C	-	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	128	403	58	148	0
Future Volume (vph)	0	128	403	58	148	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1596	0	1752	1845	1827	0
Flt Permitted			0.950			
Satd. Flow (perm)	1596	0	1752	1845	1827	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	444			485	412	
Travel Time (s)	10.1			11.0	9.4	
Peak Hour Factor	0.90	0.90	0.86	0.86	0.88	0.88
Heavy Vehicles (%)	3%	3%	3%	3%	4%	4%
Adj. Flow (vph)	0	142	469	67	168	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	469	67	168	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	16
Intersection LOS	C

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	128	403	58	148	0
Future Vol, veh/h	0	128	403	58	148	0
Peak Hour Factor	0.90	0.90	0.86	0.86	0.88	0.88
Heavy Vehicles, %	3	3	3	3	4	4
Mvmt Flow	0	142	469	67	168	0
Number of Lanes	1	0	1	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	2
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	2	0	1
HCM Control Delay	9.4	19.8	9.7
HCM LOS	A	C	A

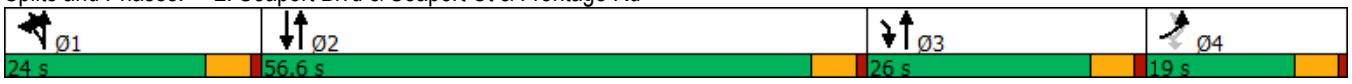
Lane	NBLn1	NBLn2	EBLn1	SBLn1
Vol Left, %	100%	0%	0%	0%
Vol Thru, %	0%	100%	0%	100%
Vol Right, %	0%	0%	100%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	403	58	128	148
LT Vol	403	0	0	0
Through Vol	0	58	0	148
RT Vol	0	0	128	0
Lane Flow Rate	469	67	142	168
Geometry Grp	5	5	2	4a
Degree of Util (X)	0.722	0.095	0.2	0.237
Departure Headway (Hd)	5.55	5.047	5.075	5.075
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	647	705	704	701
Service Time	3.313	2.81	3.132	3.147
HCM Lane V/C Ratio	0.725	0.095	0.202	0.24
HCM Control Delay	21.5	8.3	9.4	9.7
HCM Lane LOS	C	A	A	A
HCM 95th-tile Q	6.1	0.3	0.7	0.9

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	69	49	24	705	615	0	0	70	3
Future Volume (vph)	1	0	69	49	24	705	615	0	0	70	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	60		265			0	0	0	
Storage Lanes		1	1		1			0	0	1	
Taper Length (ft)		25			50				25		
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	0.95	0.95	0.95	1.00	1.00	1.00
Frt			0.850							0.865	
Flt Protected		0.950			0.950						
Satd. Flow (prot)	0	1736	1553	0	1719	3438	3539	0	0	1522	0
Flt Permitted		0.950			0.950						
Satd. Flow (perm)	0	1736	1553	0	1719	3438	3539	0	0	1522	0
Right Turn on Red			Yes								No
Satd. Flow (RTOR)			109								
Link Speed (mph)		30				35	35		30		
Link Distance (ft)		369				675	1774		538		
Travel Time (s)		8.4				13.1	34.6		12.2		
Peak Hour Factor	0.78	0.78	0.78	0.81	0.81	0.81	0.78	0.78	0.82	0.82	0.82
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	2%	2%	8%	8%	8%
Adj. Flow (vph)	1	0	88	60	30	870	788	0	0	85	4
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	1	88	0	90	870	788	0	0	89	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Left	Left	Right	Left	Right	Right
Median Width(ft)		12				12	12		0		
Link Offset(ft)		0				0	0		0		
Crosswalk Width(ft)		16				16	16		16		
Two way Left Turn Lane											
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	15	9	15	15			9	15	9	9
Number of Detectors	1	1	1	1	1	2	2			1	
Detector Template	Left	Left	Right	Left	Left	Thru	Thru			Right	
Leading Detector (ft)	20	20	20	20	20	100	100			20	
Trailing Detector (ft)	0	0	0	0	0	0	0			0	
Detector 1 Position(ft)	0	0	0	0	0	0	0			0	
Detector 1 Size(ft)	20	20	20	20	20	6	6			20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex	
Detector 1 Channel											
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	
Detector 2 Position(ft)						94	94				
Detector 2 Size(ft)						6	6				
Detector 2 Type						Cl+Ex	Cl+Ex				
Detector 2 Channel											
Detector 2 Extend (s)						0.0	0.0				
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	

Lane Group	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Permitted Phases	4		4								
Detector Phase	4	4	4	1	1	2	2			3	
Switch Phase											
Minimum Initial (s)	10.0	10.0	10.0	9.0	9.0		10.0			10.0	
Minimum Split (s)	15.0	15.0	15.0	14.2	14.2		15.2			15.2	
Total Split (s)	19.0	19.0	19.0	24.0	24.0		56.6			26.0	
Total Split (%)	15.1%	15.1%	15.1%	19.1%	19.1%		45.1%			20.7%	
Maximum Green (s)	14.0	14.0	14.0	18.8	18.8		51.4			20.8	
Yellow Time (s)	4.0	4.0	4.0	4.2	4.2		4.2			4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0			1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.2		5.2			5.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag			Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes			Yes	
Vehicle Extension (s)	3.0	3.0	3.0	4.0	4.0		4.0			4.0	
Recall Mode	None	None	None	None	None		Min			None	
Walk Time (s)	7.0	7.0	7.0								
Flash Dont Walk (s)	24.0	24.0	24.0								
Pedestrian Calls (#/hr)	0	0	0								
Act Effct Green (s)		11.1	11.1		12.7	77.6	51.2			13.6	
Actuated g/C Ratio		0.12	0.12		0.14	0.84	0.56			0.15	
v/c Ratio		0.00	0.31		0.38	0.30	0.40			0.40	
Control Delay		47.0	9.2		48.4	2.6	19.2			48.5	
Queue Delay		0.0	0.0		0.0	0.0	0.0			0.0	
Total Delay		47.0	9.2		48.4	2.6	19.2			48.5	
LOS		D	A		D	A	B			D	
Approach Delay		9.6				6.9	19.2		48.5		
Approach LOS		A				A	B		D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 125.6			
Actuated Cycle Length: 92.2			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.40			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Seaport Blvd & Seaport Ct & Frontage Rd



Movement	EBL2	EBL	EBR	NBL2	NBL	NBT	SBT	SBR	SEL	SER	SER2
Lane Configurations											
Traffic Volume (vph)	1	0	69	49	24	705	615	0	0	70	3
Future Volume (vph)	1	0	69	49	24	705	615	0	0	70	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0		5.2	5.2	5.2			5.2	
Lane Util. Factor		1.00	1.00		1.00	0.95	0.95			1.00	
Frt		1.00	0.85		1.00	1.00	1.00			0.86	
Flt Protected		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (prot)		1736	1553		1719	3438	3539			1522	
Flt Permitted		0.95	1.00		0.95	1.00	1.00			1.00	
Satd. Flow (perm)		1736	1553		1719	3438	3539			1522	
Peak-hour factor, PHF	0.78	0.78	0.78	0.81	0.81	0.81	0.78	0.78	0.82	0.82	0.82
Adj. Flow (vph)	1	0	88	60	30	870	788	0	0	85	4
RTOR Reduction (vph)	0	0	81	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1	7	0	90	870	788	0	0	89	0
Heavy Vehicles (%)	4%	4%	4%	5%	5%	5%	2%	2%	8%	8%	8%
Turn Type	Perm	Prot	Perm	Prot	Prot	NA	NA			Prot	
Protected Phases		4		1	1	1 2 3	2			3	
Permitted Phases	4		4								
Actuated Green, G (s)		7.2	7.2		9.2	78.5	49.2			9.7	
Effective Green, g (s)		7.2	7.2		9.2	78.5	49.2			9.7	
Actuated g/C Ratio		0.08	0.08		0.10	0.82	0.51			0.10	
Clearance Time (s)		5.0	5.0		5.2		5.2			5.2	
Vehicle Extension (s)		3.0	3.0		4.0		4.0			4.0	
Lane Grp Cap (vph)		130	116		164	2814	1815			153	
v/s Ratio Prot					c0.05	0.25	c0.22			c0.06	
v/s Ratio Perm		0.00	c0.00								
v/c Ratio		0.01	0.06		0.55	0.31	0.43			0.58	
Uniform Delay, d1		41.0	41.2		41.4	2.1	14.6			41.2	
Progression Factor		1.00	1.00		1.00	1.00	1.00			1.00	
Incremental Delay, d2		0.0	0.2		4.6	0.1	0.2			6.5	
Delay (s)		41.1	41.4		46.0	2.2	14.9			47.7	
Level of Service		D	D		D	A	B			D	
Approach Delay (s)		41.4				6.3	14.9		47.7		
Approach LOS		D				A	B		D		

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	20.6
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	679	166	767	748	6
Future Volume (vph)	12	679	166	767	748	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	400			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		60			
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt	0.855	0.850			0.999	
Flt Protected	0.998		0.950			
Satd. Flow (prot)	1589	1504	1719	3438	3535	0
Flt Permitted	0.998		0.950			
Satd. Flow (perm)	1589	1504	1719	3438	3535	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	411	411			1	
Link Speed (mph)	25			35	35	
Link Distance (ft)	474			1180	759	
Travel Time (s)	12.9			23.0	14.8	
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.81	0.81	0.79	0.79	0.77	0.77
Heavy Vehicles (%)	2%	2%	5%	5%	2%	2%
Adj. Flow (vph)	15	838	210	971	971	8
Shared Lane Traffic (%)		49%				
Lane Group Flow (vph)	426	427	210	971	979	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (ft)	20	20	20	100	100	
Trailing Detector (ft)	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	
Detector 1 Size(ft)	20	20	20	6	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)				94	94	
Detector 2 Size(ft)				6	6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Detector Phase	4	4	1	6	2	
Switch Phase						
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	
Minimum Split (s)	15.0	15.0	15.2	15.2	15.2	
Total Split (s)	30.0	30.0	26.2	69.4	43.2	
Total Split (%)	30.2%	30.2%	26.4%	69.8%	43.5%	
Maximum Green (s)	25.0	25.0	21.0	64.2	38.0	
Yellow Time (s)	4.0	4.0	4.2	4.2	4.2	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.2	5.2	5.2	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	
Walk Time (s)	7.0	7.0				
Flash Dont Walk (s)	24.0	24.0				
Pedestrian Calls (#/hr)	0	0				
Act Effct Green (s)	12.5	12.5	14.6	46.9	26.8	
Actuated g/C Ratio	0.18	0.18	0.21	0.67	0.38	
v/c Ratio	0.69	0.71	0.59	0.42	0.72	
Control Delay	10.4	11.2	34.5	6.1	22.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.4	11.2	34.5	6.1	22.5	
LOS	B	B	C	A	C	
Approach Delay	10.8			11.1	22.5	
Approach LOS	B			B	C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 99.4			
Actuated Cycle Length: 70			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: Seaport Blvd & Chesapeake Dr



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	679	166	767	748	6
Future Volume (vph)	12	679	166	767	748	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.2	5.2	5.2	
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	0.86	0.85	1.00	1.00	1.00	
Flt Protected	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1590	1504	1719	3438	3534	
Flt Permitted	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1590	1504	1719	3438	3534	
Peak-hour factor, PHF	0.81	0.81	0.79	0.79	0.77	0.77
Adj. Flow (vph)	15	838	210	971	971	8
RTOR Reduction (vph)	337	337	0	0	1	0
Lane Group Flow (vph)	89	90	210	971	978	0
Confl. Bikes (#/hr)						2
Heavy Vehicles (%)	2%	2%	5%	5%	2%	2%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		1	6	2	
Permitted Phases		4				
Actuated Green, G (s)	12.5	12.5	14.6	46.9	27.1	
Effective Green, g (s)	12.5	12.5	14.6	46.9	27.1	
Actuated g/C Ratio	0.18	0.18	0.21	0.67	0.39	
Clearance Time (s)	5.0	5.0	5.2	5.2	5.2	
Vehicle Extension (s)	2.5	2.5	3.0	3.0	3.0	
Lane Grp Cap (vph)	285	270	360	2316	1376	
v/s Ratio Prot	0.06		c0.12	0.28	c0.28	
v/s Ratio Perm		c0.06				
v/c Ratio	0.31	0.33	0.58	0.42	0.71	
Uniform Delay, d1	24.8	24.9	24.8	5.2	17.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.5	2.4	0.1	1.8	
Delay (s)	25.3	25.4	27.2	5.3	19.7	
Level of Service	C	C	C	A	B	
Approach Delay (s)	25.4			9.2	19.7	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	15.4
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

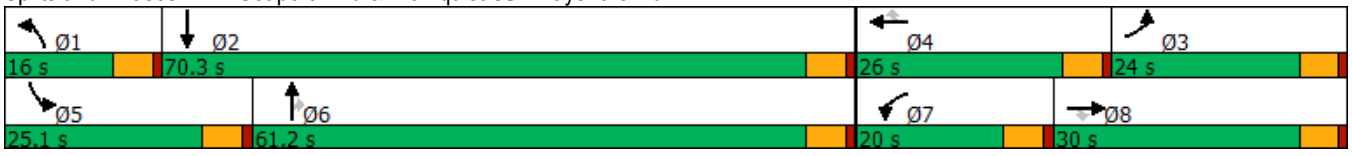
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	171	99	244	91	17	75	803	495	130	1181	117
Future Volume (vph)	113	171	99	244	91	17	75	803	495	130	1181	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	525		525	325		75	200		250	400		0
Storage Lanes	1		1	2		1	0		1	1		0
Taper Length (ft)	75			100			25			65		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Ped Bike Factor	0.99					0.98					1.00	
Frt			0.850			0.850			0.850		0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1827	1553	3400	1845	1568	1703	3406	1524	1770	3486	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1719	1827	1553	3400	1845	1534	1703	3406	1524	1770	3486	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			139			138			508		10	
Link Speed (mph)		25			30			35			35	
Link Distance (ft)		466			754			574			1022	
Travel Time (s)		12.7			17.1			11.2			19.9	
Confl. Peds. (#/hr)	5					5						
Confl. Bikes (#/hr)												3
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Heavy Vehicles (%)	4%	4%	4%	3%	3%	3%	6%	6%	6%	2%	2%	2%
Adj. Flow (vph)	145	219	127	284	106	20	90	967	596	146	1327	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	219	127	284	106	20	90	967	596	146	1458	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8			4			6			
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	
Switch Phase												
Minimum Initial (s)	9.0	10.0	10.0	8.0	8.0	8.0	8.0	8.0	8.0	9.0	8.0	
Minimum Split (s)	14.0	30.0	30.0	13.1	13.1	13.1	13.1	32.1	32.1	14.1	32.1	
Total Split (s)	24.0	30.0	30.0	20.0	26.0	26.0	16.0	61.2	61.2	25.1	70.3	
Total Split (%)	17.6%	22.0%	22.0%	14.7%	19.1%	19.1%	11.7%	44.9%	44.9%	18.4%	51.6%	
Maximum Green (s)	19.0	25.0	25.0	14.9	20.9	20.9	10.9	56.1	56.1	20.0	65.2	
Yellow Time (s)	4.0	4.0	4.0	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	
Lead/Lag	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	
Walk Time (s)		7.0	7.0					7.0	7.0		7.0	
Flash Dont Walk (s)		18.0	18.0					20.0	20.0		20.0	
Pedestrian Calls (#/hr)		5	5					0	0		0	
Act Effct Green (s)	18.2	16.7	16.7	12.1	10.6	10.6	9.6	45.6	45.6	13.1	49.1	
Actuated g/C Ratio	0.17	0.15	0.15	0.11	0.10	0.10	0.09	0.42	0.42	0.12	0.45	
v/c Ratio	0.50	0.78	0.36	0.75	0.59	0.07	0.60	0.68	0.64	0.69	0.92	
Control Delay	50.6	66.3	9.1	63.2	66.1	0.5	71.1	29.3	7.9	66.8	38.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	50.6	66.3	9.1	63.2	66.1	0.5	71.1	29.3	7.9	66.8	38.8	
LOS	D	E	A	E	E	A	E	C	A	E	D	
Approach Delay		46.8			60.9			23.9			41.3	
Approach LOS		D			E			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 136.3			
Actuated Cycle Length: 108.7			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay: 37.0		Intersection LOS: D	
Intersection Capacity Utilization 75.9%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: Seaport Blvd & Blomquist St/E Bayshore Rd



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	171	99	244	91	17	75	803	495	130	1181	117
Future Volume (veh/h)	113	171	99	244	91	17	75	803	495	130	1181	117
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		0.98
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1856	1856	1856	1811	1811	1811	1870	1870	1870
Adj Flow Rate, veh/h	145	219	127	284	106	20	90	967	596	146	1327	131
Peak Hour Factor	0.78	0.78	0.78	0.86	0.86	0.86	0.83	0.83	0.83	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	3	3	3	6	6	6	2	2	2
Cap, veh/h	297	287	240	356	167	139	138	1419	633	179	1411	139
Arrive On Green	0.17	0.16	0.16	0.10	0.09	0.09	0.08	0.41	0.41	0.10	0.43	0.43
Sat Flow, veh/h	1753	1841	1545	3428	1856	1546	1725	3441	1535	1781	3260	320
Grp Volume(v), veh/h	145	219	127	284	106	20	90	967	596	146	720	738
Grp Sat Flow(s),veh/h/ln	1753	1841	1545	1714	1856	1546	1725	1721	1535	1781	1777	1804
Q Serve(g_s), s	6.7	10.2	6.7	7.2	4.9	0.8	4.5	20.5	33.2	7.2	34.5	35.0
Cycle Q Clear(g_c), s	6.7	10.2	6.7	7.2	4.9	0.8	4.5	20.5	33.2	7.2	34.5	35.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.18
Lane Grp Cap(c), veh/h	297	287	240	356	167	139	138	1419	633	179	769	780
V/C Ratio(X)	0.49	0.76	0.53	0.80	0.64	0.14	0.65	0.68	0.94	0.82	0.94	0.95
Avail Cap(c_a), veh/h	374	516	433	573	435	363	211	2167	966	400	1300	1320
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	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.5	36.0	34.6	39.0	39.1	21.8	39.8	21.4	25.1	39.3	24.1	24.3
Incr Delay (d2), s/veh	0.5	1.6	0.7	1.6	1.5	0.2	1.9	0.2	9.8	3.5	5.3	6.0
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	2.9	4.7	2.6	3.1	2.3	0.4	1.9	7.7	13.3	3.2	14.4	15.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	37.7	35.3	40.6	40.6	22.0	41.7	21.6	35.0	42.7	29.4	30.3
LnGrp LOS	C	D	D	D	D	C	D	C	C	D	C	C
Approach Vol, veh/h		491			410			1653			1604	
Approach Delay, s/veh		35.9			39.7			27.5			31.0	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	43.6	20.1	13.1	14.0	41.8	14.3	18.9
Change Period (Y+Rc), s	5.1	5.1	5.0	5.1	5.1	5.1	5.1	5.0
Max Green Setting (Gmax), s	10.9	65.2	19.0	20.9	20.0	56.1	14.9	25.0
Max Q Clear Time (g_c+I1), s	6.5	37.0	8.7	6.9	9.2	35.2	9.2	12.2
Green Ext Time (p_c), s	0.0	1.6	0.0	0.1	0.0	1.2	0.0	0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	145	219	127	284	106	20	90	967	596	146	1458
v/c Ratio	0.50	0.78	0.36	0.75	0.59	0.07	0.60	0.68	0.64	0.69	0.92
Control Delay (s/veh)	50.6	66.3	9.1	63.2	66.1	0.5	71.1	29.3	7.9	66.8	38.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.6	66.3	9.1	63.2	66.1	0.5	71.1	29.3	7.9	66.8	38.8
Queue Length 50th (ft)	92	151	0	101	74	0	62	277	36	101	483
Queue Length 95th (ft)	160	230	25	169	145	0	#134	395	107	193	687
Internal Link Dist (ft)		386			674			494			942
Turn Bay Length (ft)	525		525	325		75	200		250	400	
Base Capacity (vph)	346	438	478	486	370	418	178	1835	1055	339	2187
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.50	0.27	0.58	0.29	0.05	0.51	0.53	0.56	0.43	0.67

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Attachment 10 – Volume, Delay, V/C, and LOS Summary Tables

Attachment 10 modeling results summary tables that may not meet Web Content Accessibility Guidelines (WCAG) AA accessibility guidelines. If you experience difficulty reading or interpreting any of the information on the following pages, please contact the Port of Redwood City at c-dsnaman@redwoodcityport.com or (650) 306-4150 to request a plain-text version, structured data table, or direct assistance.

Table A10.1 Intersection Existing (2023) Volume, Delay, and LOS

Int. #	Intersection Name	Control Type	Method	Hourly Volume (vehicles)		Delay (seconds/vehicle)		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC	HCM 6th	483	502	9.8	11.0	A	B
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	495	493	0.4	0.2	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	582	627	9.3	12.6	A	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	1,119	1,168	11.8	13.9	B	B
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	1,876	1,896	31.3	30.0	C	C
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Signalized	HCM 6th	4,223	3,951	17.2	20.0	B	B
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Signalized	HCM 2000	5,243	5,164	268.3	188.8	F	F
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	5,540	5,319	62.2	49.7	E	D
8	Maple St and Blomquist St	AWSC	HCM 6th	511	549	9.7	10.8	A	B
9	Maple St and Veterans Blvd	Signalized	HCM 2000	2,040	2,149	25.4	28.3	C	C
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	1,562	1,642	7.1	7.6	A	A
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	4,819	4,604	50.2	31.1	D	C
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	3,691	4,172	35.1	34.2	D	C
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	3,137	3,570	19.1	20.6	B	C
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	3,469	3,956	23.3	28.9	C	C

Source: CDM Smith, 2024.

*LOS reported for the worst stop-controlled minor approach at TWSC intersection

Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table A10.2 Freeway Segments Existing (2023) Volume, V/C Ratio, and LOS

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
O1	US 101 NB		Off to Marsh Rd	7,790	7,620	0.9816	0.9601	E	E
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	6,660	6,840	0.9576	0.9835	E	E
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	7,040	7,230	1.0123	1.0396	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	8,490	8,410	0.9700	0.9608	E	E
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	6,370	6,780	0.9159	0.9749	E	E
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	7,950	8,150	1.0180	1.0437	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	6,830	6,920	0.9821	0.9950	E	E
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	8,030	7,790	1.1546	1.1201	F	F
D1	US 101 NB	On from WB Whipple Ave		8,130	7,860	1.0024	0.9691	F	E
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	8,820	8,820	0.8764	0.8764	E	E
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	7,370	7,470	0.8162	0.8272	D	D
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	7,530	7,590	0.8155	0.8220	D	D
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	8,230	8,200	1.0466	1.0428	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	6,970	7,070	1.0022	1.0166	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	7,910	8,330	0.9268	0.9760	E	E
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	6,510	6,400	0.9361	0.9203	E	E
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	6,630	6,730	0.9533	0.9677	E	E
D2	US 101 SB	On from EB Marsh Rd		7,280	7,560	0.9602	0.9971	E	E

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table A10.3 Arterial Segments Existing (2023) Volume, V/C Ratio, and LOS

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		406 (EB) / 71 (WB)	160 (EB) / 330 (WB)	0.1259 (EB) / 0.0247 (WB)	0.0488 (EB) / 0.0988 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	424 (EB) / 70 (WB)	163 (EB) / 328 (WB)	0.295 (EB) / 0.0541 (WB)	0.1149 (EB) / 0.2183 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	465 (EB) / 115 (WB)	203 (EB) / 422 (WB)	0.3235 (EB) / 0.0974 (WB)	0.1431 (EB) / 0.2829 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	933 (EB) / 175 (WB)	284 (EB) / 872 (WB)	0.672 (EB) / 0.1431 (WB)	0.198 (EB) / 0.5809 (WB)	B (EB) / A (WB)	A (EB) / A (WB)
5	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	1,799 (EB) / 2,140 (WB)	1,349 (EB) / 2,189 (WB)	1.2723 (EB) / 1.6305 (WB)	0.9448 (EB) / 1.4622 (WB)	F (EB) / F (WB)	E (EB) / F (WB)
6	SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	2,298 (EB) / 1,343 (WB)	1,984 (EB) / 1,207 (WB)	1.6068 (EB) / 0.9699 (WB)	1.3294 (EB) / 0.8005 (WB)	F (EB) / E (WB)	F (EB) / D (WB)
7	SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	2,026 (EB) / 1,649 (WB)	1,607 (EB) / 1,862 (WB)	1.4346 (EB) / 1.1665 (WB)	1.0815 (EB) / 1.2338 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	195 (NB) / 316 (SB)	272 (NB) / 269 (SB)	0.2794 (NB) / 0.5298 (SB)	0.368 (NB) / 0.3646 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	380 (EB) / 176 (WB)	261 (EB) / 357 (WB)	0.5215 (EB) / 0.2471 (WB)	0.3512 (EB) / 0.4771 (WB)	A (EB) / A (WB)	A (EB) / A (WB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
10	Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	629 (NB) / 661 (SB)	685 (NB) / 624 (SB)	0.4294 (NB) / 0.4508 (SB)	0.4549 (NB) / 0.4141 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	2,043 (EB) / 1,326 (WB)	1,691 (EB) / 1,333 (WB)	1.3714 (EB) / 0.9054 (WB)	1.1213 (EB) / 0.887 (WB)	F (EB) / E (WB)	F (EB) / D (WB)
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	864 (NB) / 1,545 (SB)	1,292 (NB) / 1,270 (SB)	0.3952 (NB) / 0.6992 (SB)	0.5733 (NB) / 0.5605 (SB)	A (NB) / B (SB)	A (NB) / A (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	322 (NB) / 312 (SB)	302 (NB) / 430 (SB)	0.4339 (NB) / 0.4118 (SB)	0.407 (NB) / 0.5673 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	1,693 (EB) / 2,164 (WB)	2,180 (EB) / 1,962 (WB)	1.1449 (EB) / 1.4588 (WB)	1.4711 (EB) / 1.3229 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	1,681 (EB) / 1,444 (WB)	2,391 (EB) / 1,390 (WB)	1.1333 (EB) / 0.9801 (WB)	1.6118 (EB) / 0.9424 (WB)	F (EB) / E (WB)	F (EB) / E (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

Table A10.4 Intersection Cumulative (2040) No Project Volume, Delay, and LOS

Int. #	Intersection Name	Control Type	Method	Hourly Volume (vehicles)		Delay (seconds/vehicle)		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC	HCM 6th	788	807	14.8	25.1	B	D
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	810	792	0.4	0.3	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	947	1,005	8.1	15.9	A	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	1,830	1,847	20.0	18.7	C	B
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	2,989	3,035	31.6	31.1	C	C
4N	SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Signalized	HCM 6th	5,612	4,728	114.2	41.9	F	D
5N	SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Signalized	HCM 2000	7,244	6,741	60.6	63.2	E	E
6N	SR 84 (Woodside Rd) and Broadway	Signalized	HCM 2000	7,854	7,763	278.2	208.7	F	F
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	7,995	7,728	196.6	159	F	F
8	Maple St and Blomquist St	AWSC	HCM 6th	708	800	12.5	20.4	B	C
9	Maple St and Veterans Blvd	Signalized	HCM 2000	2,657	2,893	35.4	53.3	D	D
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	1,911	1,966	9.7	11.9	A	B
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	6,117	5,798	95.8	54.4	F	D
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	5,454	6,139	76.6	49.2	E	D
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	4,669	5,278	37.5	107.3	D	F
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	5,135	5,820	85.8	121.3	F	F

Source: CDM Smith, 2024.

*LOS reported for the worst stop-controlled minor approach at TWSC intersection

Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table A10.5 Freeway Segments Cumulative (2040) No Project Volume, V/C Ratio, and LOS

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
O1	US 101 NB		Off to Marsh Rd	9,110	8,910	1.1479	1.1227	F	F
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	7,530	7,810	1.0827	1.1230	F	F
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	8,070	8,360	1.1604	1.2021	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	10,110	10,010	1.1550	1.1436	F	F
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	7,400	7,930	1.0641	1.1403	F	F
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	9,440	9,680	1.2088	1.2396	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	8,250	8,370	1.1863	1.2035	F	F
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	9,930	9,590	1.4278	1.3790	F	F
D1	US 101 NB	On from WB Whipple Ave		10,030	9,670	1.2366	1.1922	F	F
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	10,310	10,310	1.0245	1.0245	F	F
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	8,760	8,870	0.9701	0.9823	E	E
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	8,930	8,990	0.9671	0.9736	E	E
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	9,900	9,850	1.2590	1.2526	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	8,290	8,410	1.1920	1.2093	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	9,490	10,030	1.1119	1.1752	F	F
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	7,520	7,320	1.0813	1.0525	F	F
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	7,690	7,780	1.1058	1.1187	F	F
D2	US 101 SB	On from EB Marsh Rd		8,600	8,950	1.1343	1.1805	F	F

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table A10.6 Arterial Segments Cumulative (2040) No Project Volume, V/C Ratio, and LOS

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		674 (EB) / 106 (WB)	296 (EB) / 490 (WB)	0.209 (EB) / 0.0369 (WB)	0.0903 (EB) / 0.1467 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	704 (EB) / 106 (WB)	302 (EB) / 487 (WB)	0.4898 (EB) / 0.082 (WB)	0.2129 (EB) / 0.3241 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	772 (EB) / 172 (WB)	376 (EB) / 627 (WB)	0.5371 (EB) / 0.1457 (WB)	0.2651 (EB) / 0.4204 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	1,553 (EB) / 262 (WB)	530 (EB) / 1,300 (WB)	1.1185 (EB) / 0.2143 (WB)	0.3696 (EB) / 0.866 (WB)	F (EB) / A (WB)	A (EB) / D (WB)
4N	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	3,251 (EB) / 2,007 (WB)	2,242 (EB) / 2,398 (WB)	1.5328 (EB) / 1.0193 (WB)	1.0468 (EB) / 1.0679 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
5N	SR 84 (Woodside Rd) (Middle Top)	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	3,251 (EB) / 2,007 (WB)	2,242 (EB) / 2,398 (WB)	1.5328 (EB) / 1.0193 (WB)	1.0468 (EB) / 1.0679 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
6N	SR 84 (Woodside Rd) (Middle Bottom)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	6N: SR 84 (Woodside Rd) and Broadway	3,623 (EB) / 3,031 (WB)	2,901 (EB) / 3,145 (WB)	1.6888 (EB) / 1.4592 (WB)	1.2959 (EB) / 1.3906 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
7N	SR 84 (Woodside Rd) (South)	6N: SR 84 (Woodside Rd) and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	3,029 (EB) / 2,178 (WB)	2,402 (EB) / 2,532 (WB)	2.1448 (EB) / 1.5407 (WB)	1.6165 (EB) / 1.6777 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	312 (NB) / 406 (SB)	436 (NB) / 351 (SB)	0.447 (NB) / 0.6807 (SB)	0.59 (NB) / 0.4758 (SB)	A (NB) / B (SB)	A (NB) / A (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	484 (EB) / 279 (WB)	335 (EB) / 568 (WB)	0.6642 (EB) / 0.3916 (WB)	0.4508 (EB) / 0.7591 (WB)	B (EB) / A (WB)	A (EB) / C (WB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
10N	Veterans Blvd (East)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	840 (NB) / 812 (SB)	964 (NB) / 762 (SB)	0.5735 (NB) / 0.5538 (SB)	0.6402 (NB) / 0.5057 (SB)	A (NB) / A (SB)	B (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	2,930 (EB) / 1,541 (WB)	2,430 (EB) / 1,506 (WB)	1.9668 (EB) / 1.0521 (WB)	1.6114 (EB) / 1.0021 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	1,202 (NB) / 1,734 (SB)	1,866 (NB) / 1,420 (SB)	0.5498 (NB) / 0.7847 (SB)	0.828 (NB) / 0.6267 (SB)	A (NB) / C (SB)	D (NB) / B (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	473 (NB) / 466 (SB)	441 (NB) / 643 (SB)	0.6374 (NB) / 0.615 (SB)	0.5944 (NB) / 0.8483 (SB)	B (NB) / B (SB)	A (NB) / D (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	2,446 (EB) / 3,234 (WB)	3,148 (EB) / 2,933 (WB)	1.6542 (EB) / 2.1801 (WB)	2.1243 (EB) / 1.9776 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	2,429 (EB) / 2,223 (WB)	3,445 (EB) / 2,130 (WB)	1.6376 (EB) / 1.5088 (WB)	2.3223 (EB) / 1.4441 (WB)	F (EB) / F (WB)	F (EB) / F (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

Table A10.7 Intersection Existing (2023) plus Ferry Terminal Component Volume, Delay, and LOS

Int. #	Intersection Name	Control Type	Method	Hourly Volume (vehicles)		Delay (seconds/vehicle)		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1c	Seaport Blvd Loop and Proposed Project Facility Entrance Rd	TWSC	HCM 6th	418	361	8.6	8.9	A	A
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC	HCM 6th	703	731	12.0	16.5	B	C
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	715	722	N/A	N/A	A**	B**
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	802	856	N/A	N/A	B**	B**
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	1,339	1,397	N/A	N/A	C**	C**
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	2,093	2,116	31.0	29.8	C	C
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Signalized	HCM 6th	4,283	3,991	N/A	N/A	C**	C**
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Signalized	HCM 2000	5,230	5,150	N/A	N/A	F**	F**
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	5,531	5,310	N/A	N/A	E**	D**
8	Maple St and Blomquist St	AWSC	HCM 6th	531	570	N/A	N/A	B**	B**
9	Maple St and Veterans Blvd	Signalized	HCM 2000	2,023	2,137	N/A	N/A	C**	C**
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	1,570	1,656	N/A	N/A	A**	A**
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	4,748	4,542	N/A	N/A	D**	C**
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	3,687	4,168	N/A	N/A	D**	C**
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	3,133	3,570	N/A	N/A	B**	C**
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	3,465	3,956	N/A	N/A	C**	C**

Source: CDM Smith, 2024.
*LOS reported for the worst stop-controlled minor approach at TWSC intersection
**Expected LOS by comparing this scenario against Existing (2023) and Existing (2023) plus Full Project.
Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, SR = State Route, Rd = Road, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table A10.8 Freeway Segments Existing (2023) plus Ferry Terminal Component Volume, V/C Ratio, and LOS

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
O1	US 101 NB		Off to Marsh Rd	7,790	7,620	0.9816	0.9601	E	E
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	6,660	6,840	0.9576	0.9835	E	E
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	7,040	7,230	1.0123	1.0396	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	8,490	8,400	0.9700	0.9597	E	E
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	6,370	6,760	0.9159	0.9720	E	E
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	8,010	8,100	1.0257	1.0373	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	6,880	6,860	0.9893	0.9864	E	E
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	8,060	7,670	1.1590	1.1029	F	F
D1	US 101 NB	On from WB Whipple Ave		8,160	7,740	1.0061	0.9543	F	E
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	8,820	8,820	0.8764	0.8764	E	E
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	7,440	7,490	0.8239	0.8295	D	D
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	7,600	7,610	0.8231	0.8242	D	D
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	8,300	8,230	1.0555	1.0466	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	7,060	7,050	1.0152	1.0137	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	8,020	8,310	0.9397	0.9736	E	E
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	6,620	6,380	0.9519	0.9174	E	E
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	6,740	6,710	0.9692	0.9648	E	E
D2	US 101 SB	On from EB Marsh Rd		7,390	7,540	0.9747	0.9945	E	E

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table A10.9 Arterial Segments Existing (2023) plus Ferry Terminal Component Volume, V/C Ratio, and LOS

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		455 (EB) / 242 (WB)	341 (EB) / 378 (WB)	0.1411 (EB) / 0.0842 (WB)	0.104 (EB) / 0.1132 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	473 (EB) / 241 (WB)	344 (EB) / 376 (WB)	0.3291 (EB) / 0.1864 (WB)	0.2426 (EB) / 0.2502 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	514 (EB) / 286 (WB)	384 (EB) / 470 (WB)	0.3576 (EB) / 0.2422 (WB)	0.2708 (EB) / 0.3151 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	982 (EB) / 346 (WB)	465 (EB) / 920 (WB)	0.7073 (EB) / 0.283 (WB)	0.3243 (EB) / 0.6129 (WB)	C (EB) / A (WB)	A (EB) / B (WB)
5	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	1,796 (EB) / 2,203 (WB)	1,361 (EB) / 2,217 (WB)	1.2703 (EB) / 1.6785 (WB)	0.953 (EB) / 1.4811 (WB)	F (EB) / F (WB)	E (EB) / F (WB)
6	SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	2,293 (EB) / 1,373 (WB)	1,976 (EB) / 1,233 (WB)	1.6031 (EB) / 0.9914 (WB)	1.3239 (EB) / 0.8175 (WB)	F (EB) / E (WB)	F (EB) / D (WB)
7	SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	2,021 (EB) / 1,645 (WB)	1,602 (EB) / 1,857 (WB)	1.4314 (EB) / 1.1633 (WB)	1.0782 (EB) / 1.2308 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	219 (NB) / 318 (SB)	275 (NB) / 289 (SB)	0.3141 (NB) / 0.5337 (SB)	0.3726 (NB) / 0.3922 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	376 (EB) / 195 (WB)	280 (EB) / 359 (WB)	0.5156 (EB) / 0.2734 (WB)	0.3765 (EB) / 0.4804 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
10	Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	648 (NB) / 664 (SB)	687 (NB) / 644 (SB)	0.4422 (NB) / 0.4525 (SB)	0.4565 (NB) / 0.4273 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	2,028 (EB) / 1,335 (WB)	1,638 (EB) / 1,347 (WB)	1.3615 (EB) / 0.9118 (WB)	1.0859 (EB) / 0.8965 (WB)	F (EB) / E (WB)	F (EB) / D (WB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	858 (NB) / 1,491 (SB)	1,242 (NB) / 1,263 (SB)	0.3924 (NB) / 0.6749 (SB)	0.5511 (NB) / 0.5574 (SB)	A (NB) / B (SB)	A (NB) / A (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	322 (NB) / 312 (SB)	302 (NB) / 430 (SB)	0.4339 (NB) / 0.4118 (SB)	0.407 (NB) / 0.5673 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	1,689 (EB) / 2,164 (WB)	2,180 (EB) / 1,958 (WB)	1.1425 (EB) / 1.4588 (WB)	1.4711 (EB) / 1.3202 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	1,677 (EB) / 1,444 (WB)	2,391 (EB) / 1,390 (WB)	1.1309 (EB) / 0.9801 (WB)	1.6118 (EB) / 0.9424 (WB)	F (EB) / E (WB)	F (EB) / E (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway Int. = Intersection, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

Table A10.10 Intersection Existing (2023) plus Full Project Volume, Delay, and LOS

Int. #	Intersection Name	Control Type	Method	Hourly Volume (vehicles)		Delay (seconds/vehicle)		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1c	Seaport Blvd Loop and Proposed Project Facility Entrance Rd	TWSC	HCM 6th	705	661	10.6	12.7	B	B
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	AWSC	HCM 6th	990	1,031	29.4	88.6	D	F
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	1,002	1,022	0.3	0.1	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	1,089	1,156	7.8	11.3	A	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	1,626	1,697	16.2	13.3	B	B
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	2,380	2,416	34.7	34.5	C	C
5	SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	Signalized	HCM 6th	4,415	4,129	20.3	21.3	C	C
6	SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	Signalized	HCM 2000	5,334	5,259	285.7	200.1	F	F
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	5,614	5,396	64.6	51.5	E	D
8	Maple St and Blomquist St	AWSC	HCM 6th	561	601	10.2	11.4	B	B
9	Maple St and Veterans Blvd	Signalized	HCM 2000	2,068	2,184	26.3	25.8	C	C
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	1,592	1,679	7.2	7.7	A	A
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	4,782	4,577	48.7	31.1	D	C
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	3,699	4,180	35.2	34.2	D	C
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	3,138	3,576	19.1	20.6	B	C
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	3,470	3,962	23.3	29.0	C	C

Source: CDM Smith, 2024.

*LOS reported for the worst stop-controlled minor approach at TWSC intersection

Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table A10.11 Freeway Segments Existing (2023) plus Full Project Volume, V/C Ratio, and LOS

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
O1	US 101 NB		Off to Marsh Rd	7,790	7,620	0.9816	0.9601	E	E
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	6,660	6,840	0.9576	0.9835	E	E
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	7,040	7,230	1.0123	1.0396	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	8,500	8,410	0.9711	0.9608	E	E
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	6,380	6,760	0.9174	0.9720	E	E
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	8,060	8,150	1.0321	1.0437	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	6,910	6,890	0.9936	0.9907	E	E
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	8,090	7,700	1.1633	1.1072	F	F
D1	US 101 NB	On from WB Whipple Ave		8,190	7,770	1.0098	0.9580	F	E
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	8,820	8,820	0.8764	0.8764	E	E
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	7,440	7,490	0.8239	0.8295	D	D
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	7,610	7,620	0.8242	0.8253	D	D
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	8,330	8,260	1.0593	1.0504	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	7,020	7,010	1.0094	1.0080	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	7,980	8,280	0.9350	0.9701	E	E
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	6,580	6,340	0.9461	0.9116	E	E
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	6,700	6,670	0.9634	0.9591	E	E
D2	US 101 SB	On from EB Marsh Rd		7,350	7,500	0.9694	0.9892	E	E

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table A10.12 Arterial Segments Existing (2023) plus Full Project Volume, V/C Ratio, and LOS

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		619 (EB) / 365 (WB)	506 (EB) / 513 (WB)	0.1919 (EB) / 0.127 (WB)	0.1543 (EB) / 0.1536 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	637 (EB) / 364 (WB)	509 (EB) / 511 (WB)	0.4432 (EB) / 0.2815 (WB)	0.3589 (EB) / 0.3401 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	678 (EB) / 409 (WB)	549 (EB) / 605 (WB)	0.4717 (EB) / 0.3464 (WB)	0.3871 (EB) / 0.4056 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	1,146 (EB) / 469 (WB)	630 (EB) / 1,055 (WB)	0.8254 (EB) / 0.3836 (WB)	0.4393 (EB) / 0.7028 (WB)	D (EB) / A (WB)	A (EB) / C (WB)
5	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	1,869 (EB) / 2,262 (WB)	1,434 (EB) / 2,282 (WB)	1.3217 (EB) / 1.7238 (WB)	1.0041 (EB) / 1.5247 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
6	SR 84 (Woodside Rd) (Middle)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	2,352 (EB) / 1,417 (WB)	2,036 (EB) / 1,282 (WB)	1.6447 (EB) / 1.0237 (WB)	1.3641 (EB) / 0.8501 (WB)	F (EB) / F (WB)	F (EB) / D (WB)
7	SR 84 (Woodside Rd) (South)	6: SR 84 (Woodside Rd) / US 101 SB Off-Ramp and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	2,069 (EB) / 1,680 (WB)	1,650 (EB) / 1,896 (WB)	1.4649 (EB) / 1.1884 (WB)	1.1102 (EB) / 1.2566 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	232 (NB) / 335 (SB)	289 (NB) / 307 (SB)	0.3324 (NB) / 0.5623 (SB)	0.3916 (NB) / 0.4155 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	389 (EB) / 205 (WB)	293 (EB) / 370 (WB)	0.5335 (EB) / 0.2871 (WB)	0.3941 (EB) / 0.4947 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
10	Veterans Blvd (East)	5: SR 84 (Woodside Rd) and Veterans Blvd / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	658 (NB) / 677 (SB)	698 (NB) / 657 (SB)	0.4489 (NB) / 0.4614 (SB)	0.4637 (NB) / 0.436 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	2,047 (EB) / 1,354 (WB)	1,657 (EB) / 1,367 (WB)	1.3744 (EB) / 0.9244 (WB)	1.0986 (EB) / 0.9097 (WB)	F (EB) / E (WB)	F (EB) / E (WB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	858 (NB) / 1,491 (SB)	1,242 (NB) / 1,263 (SB)	0.3924 (NB) / 0.6749 (SB)	0.5511 (NB) / 0.5574 (SB)	A (NB) / B (SB)	A (NB) / A (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	322 (NB) / 312 (SB)	302 (NB) / 430 (SB)	0.4339 (NB) / 0.4118 (SB)	0.407 (NB) / 0.5673 (SB)	A (NB) / A (SB)	A (NB) / A (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	1,694 (EB) / 2,171 (WB)	2,186 (EB) / 1,965 (WB)	1.1459 (EB) / 1.4633 (WB)	1.4748 (EB) / 1.3247 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	1,682 (EB) / 1,444 (WB)	2,397 (EB) / 1,390 (WB)	1.1343 (EB) / 0.9801 (WB)	1.6155 (EB) / 0.9424 (WB)	F (EB) / E (WB)	F (EB) / E (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

Table A10.13 Intersection Cumulative (2040) Ferry Terminal Component Volume, Delay, and LOS

Int. #	Intersection Name	Control Type	Method	Hourly Volume (vehicles)		Delay (seconds/vehicle)		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1c	Seaport Blvd Loop and Proposed Project Facility Entrance Rd	TWSC	HCM 6th	828	737	13.7	16.0	B	C
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	Signalized**	HCM 2000	1,295	1,338	12.4	26.9	B	C
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	1,317	1,323	0.5	0.1	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	1,454	1,536	10.7	13.3	B	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	2,337	2,378	31.3	17.2	C	B
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	3,487	3,536	35.1	31.1	D	C
4N	SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Signalized	HCM 6th	5,760	5,078	N/A	N/A	F***	D***
5N	SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Signalized	HCM 2000	7,327	6,973	N/A	N/A	E***	E***
6N	SR 84 (Woodside Rd) and Broadway	Signalized	HCM 2000	7,870	7,781	N/A	N/A	F***	F***
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	7,971	7,704	N/A	N/A	F***	F***
8	Maple St and Blomquist St	AWSC	HCM 6th	757	843	N/A	N/A	B***	D***
9	Maple St and Veterans Blvd	Signalized	HCM 2000	2,611	2,865	N/A	N/A	D***	D***
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	1,953	2,003	N/A	N/A	B***	B***
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	5,940	5,654	N/A	N/A	F***	D***
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	5,445	6,129	N/A	N/A	E***	D***
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	4,660	5,278	N/A	N/A	D***	F***
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	5,126	5,820	N/A	N/A	F***	F***

Source: CDM Smith, 2024.

*LOS reported for the worst stop-controlled minor approach at TWSC intersection.

**The analysis recommends conversion of AWSC to signalized control type at Seaport Boulevard and Pacific Shores Center Entrance Road intersection (intersection 1a), where project traffic is a substantial share of the intersection total traffic. The improvement would keep the 2040 LOS under the ferry terminal component scenario reasonable (LOS D or better).

***Expected LOS by comparing this scenario against Cumulative (2040) No Project and Cumulative (2040) plus Ferry Terminal Component.

Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West

Table A10.14 Freeway Segments Cumulative (2040) Ferry Terminal Component Volume, V/C Ratio, and LOS

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
O1	US 101 NB		Off to Marsh Rd	9,110	8,910	1.1479	1.1227	F	F
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	7,530	7,810	1.0827	1.1230	F	F
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	8,070	8,360	1.1604	1.2021	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	10,110	10,000	1.1550	1.1425	F	F
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	7,400	7,880	1.0641	1.1331	F	F
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	9,540	9,570	1.2217	1.2255	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	8,290	8,240	1.1920	1.1848	F	F
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	9,920	9,310	1.4264	1.3387	F	F
D1	US 101 NB	On from WB Whipple Ave		10,020	9,370	1.2354	1.1552	F	F
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	10,310	10,310	1.0245	1.0245	F	F
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	8,950	8,930	0.9911	0.9889	E	E
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	9,120	9,070	0.9877	0.9823	E	E
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	10,110	9,970	1.2857	1.2679	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	8,530	8,390	1.2265	1.2064	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	9,770	10,010	1.1447	1.1728	F	F
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	7,810	7,300	1.1230	1.0497	F	F
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	7,980	7,760	1.1475	1.1158	F	F
D2	US 101 SB	On from EB Marsh Rd		8,890	8,930	1.1725	1.1778	F	F

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table A10.15 Arterial Segments Cumulative (2040) Ferry Terminal Component Volume, V/C Ratio, and LOS

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		803 (EB) / 484 (WB)	699 (EB) / 618 (WB)	0.249 (EB) / 0.1684 (WB)	0.2132 (EB) / 0.1851 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	833 (EB) / 484 (WB)	705 (EB) / 615 (WB)	0.5796 (EB) / 0.3743 (WB)	0.4971 (EB) / 0.4093 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	901 (EB) / 550 (WB)	779 (EB) / 755 (WB)	0.6269 (EB) / 0.4658 (WB)	0.5493 (EB) / 0.5062 (WB)	B (EB) / A (WB)	A (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	1,682 (EB) / 640 (WB)	933 (EB) / 1,428 (WB)	1.2114 (EB) / 0.5235 (WB)	0.6506 (EB) / 0.9513 (WB)	F (EB) / A (WB)	B (EB) / E (WB)
4N	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	3,278 (EB) / 2,127 (WB)	2,478 (EB) / 2,475 (WB)	1.5458 (EB) / 1.0805 (WB)	1.157 (EB) / 1.1022 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
5N	SR 84 (Woodside Rd) (Middle Top)	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	3,278 (EB) / 2,127 (WB)	2,478 (EB) / 2,475 (WB)	1.5458 (EB) / 1.0805 (WB)	1.157 (EB) / 1.1022 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
6N	SR 84 (Woodside Rd) (Middle Bottom)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	6N: SR 84 (Woodside Rd) and Broadway	3,619 (EB) / 3,052 (WB)	2,924 (EB) / 3,141 (WB)	1.6868 (EB) / 1.4694 (WB)	1.306 (EB) / 1.3886 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
7N	SR 84 (Woodside Rd) (South)	6N: SR 84 (Woodside Rd) and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	3,015 (EB) / 2,168 (WB)	2,392 (EB) / 2,518 (WB)	2.1349 (EB) / 1.5338 (WB)	1.6097 (EB) / 1.6685 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	364 (NB) / 417 (SB)	450 (NB) / 383 (SB)	0.5213 (NB) / 0.6996 (SB)	0.6088 (NB) / 0.5192 (SB)	A (NB) / B (SB)	B (NB) / A (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	474 (EB) / 314 (WB)	369 (EB) / 580 (WB)	0.6505 (EB) / 0.4401 (WB)	0.4967 (EB) / 0.7749 (WB)	B (EB) / A (WB)	A (EB) / C (WB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
10N	Veterans Blvd (East)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	875 (NB) / 824 (SB)	976 (NB) / 799 (SB)	0.597 (NB) / 0.5619 (SB)	0.648 (NB) / 0.5302 (SB)	A (NB) / A (SB)	B (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	2,874 (EB) / 1,587 (WB)	2,323 (EB) / 1,544 (WB)	1.929 (EB) / 1.0838 (WB)	1.5401 (EB) / 1.0271 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	1,172 (NB) / 1,625 (SB)	1,773 (NB) / 1,388 (SB)	0.5362 (NB) / 0.7354 (SB)	0.787 (NB) / 0.6126 (SB)	A (NB) / C (SB)	C (NB) / B (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	473 (NB) / 466 (SB)	441 (NB) / 643 (SB)	0.6374 (NB) / 0.615 (SB)	0.5944 (NB) / 0.8483 (SB)	B (NB) / B (SB)	A (NB) / D (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	2,437 (EB) / 3,234 (WB)	3,148 (EB) / 2,923 (WB)	1.648 (EB) / 2.1801 (WB)	2.1242 (EB) / 1.9711 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	2,420 (EB) / 2,223 (WB)	3,445 (EB) / 2,130 (WB)	1.6315 (EB) / 1.5088 (WB)	2.3222 (EB) / 1.4441 (WB)	F (EB) / F (WB)	F (EB) / F (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West

Table A10.16 Intersection Cumulative (2040) Full Project Volume, Delay, and LOS

Int. #	Intersection Name	Control Type	Method	Hourly Volume (vehicles)		Delay (seconds/vehicle)		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1c	Seaport Blvd Loop and Proposed Project Facility Entrance Rd	TWSC	HCM 6th	1,115	1,037	22.0	59.8	C	F***
1a	Seaport Blvd and Pacific Shores Center Entrance Rd	Signalized**	HCM 2000	1,582	1,638	15.7	40.6	B	D
1b	Seaport Blvd and Hinman Rd	TWSC*	HCM 6th	1,604	1,623	0.5	0.1	A	A
2	Seaport Blvd and Seaport Ct	Signalized	HCM 2000	1,741	1,836	10.5	13.2	B	B
3	Seaport Blvd and Chesapeake Dr	Signalized	HCM 2000	2,624	2,678	37.2	18.3	D	B
4	Seaport Blvd and Blomquist St / E Bayshore Rd	Signalized	HCM 2000	3,774	3,836	42.9	34.5	D	C
4N	SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	Signalized	HCM 6th	5,958	5,283	100.8	36.8	F	D
5N	SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	Signalized	HCM 2000	7,518	7,171	60.9	60.0	E	E
6N	SR 84 (Woodside Rd) and Broadway	Signalized	HCM 2000	7,991	7,907	278.1	207.2	F	F
7	SR 84 (Woodside Rd) and Middlefield Rd	Signalized	HCM 6th	8,050	7,786	199.0	162.9	F	F
8	Maple St and Blomquist St	AWSC	HCM 6th	792	880	14.6	26.8	B	D
9	Maple St and Veterans Blvd	Signalized	HCM 2000	2,664	2,920	37.4	40.3	D	D
10	Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	Signalized	HCM 2000	1,978	2,030	10.1	12.3	B	B
11	Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	Signalized	HCM 6th	5,979	5,694	88.8	52.8	F	D
12	SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	Signalized	HCM 2000	5,458	6,143	77.3	49.5	E	D
13	SR 84 (Marsh Rd) and US 101 NB Off-Ramp	Signalized	HCM 6th	4,665	5,284	37.4	108.0	D	F
14	SR 84 (Marsh Rd) and US 101 SB Off-Ramp	Signalized	HCM 6th	5,131	5,826	85.5	120.0	F	F

Source: CDM Smith, 2024.

*LOS reported for the worst stop-controlled minor approach at TWSC intersection.

**The analysis recommends conversion of AWSC to signalized control type at Seaport Boulevard and Pacific Shores Center Entrance Road intersection (intersection 1a), where project traffic is a substantial share of the intersection total traffic. The improvement would keep the 2040 LOS under the ferry terminal component scenario reasonable (LOS C or better).

***The analysis does not recommend improvements to Seaport Boulevard Loop and Proposed Project Facility Entrance Road (intersection 1c) as the 2040 LOS under the ferry terminal component scenario is reasonable (LOS C or better). When specific developer(s) and site development plans are identified for visitor-serving uses, then the LOS can be re-analyzed.

Key: All-way stop control (AWSC), Two-way stop control (TWSC), HCM = Highway Capacity Manual, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, SR = State Route, St = Street, E = East, N = North, S = South, W = West, NB = Northbound, SB = Southbound

Table A10.17 Freeway Segments Cumulative (2040) Full Project Volume, V/C Ratio, and LOS

Freeway Seg. #	Freeway Seg. Name	From Ramp	To Ramp	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
O1	US 101 NB		Off to Marsh Rd	9,110	8,910	1.1479	1.1227	F	F
201	US 101 NB	Off to Marsh Rd	On from EB Marsh Rd	7,530	7,810	1.0827	1.1230	F	F
202	US 101 NB	On from EB Marsh Rd	On from WB Marsh Rd	8,070	8,360	1.1604	1.2021	F	F
203	US 101 NB	On from WB Marsh Rd	Off to SR 84 (Woodside Rd)	10,120	10,010	1.1562	1.1436	F	F
204 / 205	US 101 NB	Off to SR 84 (Woodside Rd)	On from WB SR 84 (Woodside Rd)	7,400	7,880	1.0641	1.1331	F	F
206	US 101 NB	On from WB SR 84 (Woodside Rd)	Off to Whipple Ave	9,590	9,620	1.2281	1.2319	F	F
207	US 101 NB	Off to Whipple Ave	On from EB Whipple Ave	8,320	8,260	1.1963	1.1877	F	F
208	US 101 NB	On from EB Whipple Ave	On from WB Whipple Ave	9,950	9,330	1.4307	1.3416	F	F
D1	US 101 NB	On from WB Whipple Ave		10,050	9,390	1.2391	1.1577	F	F
O2	US 101 SB		Off to Veterans Blvd / Whipple Ave	10,310	10,310	1.0245	1.0245	F	F
209	US 101 SB	Off to Veterans Blvd / Whipple Ave	On from WB Whipple Ave	8,950	8,930	0.9911	0.9889	E	E
210	US 101 SB	On from WB Whipple Ave	On from EB Whipple Ave	9,130	9,080	0.9888	0.9834	E	E
211	US 101 SB	On from EB Whipple Ave	Off to SR 84 (Woodside Rd)	10,140	10,010	1.2895	1.2729	F	F
212	US 101 SB	Off to SR 84 (Woodside Rd)	On from SR 84 (Woodside Rd)	8,490	8,370	1.2208	1.2035	F	F
213	US 101 SB	On from SR 84 (Woodside Rd)	Off to Marsh Rd	9,730	9,990	1.1400	1.1705	F	F
214	US 101 SB	Off to Marsh Rd	On from WB Marsh Rd	7,760	7,270	1.1158	1.0454	F	F
215	US 101 SB	On from WB Marsh Rd	On from EB Marsh Rd	7,930	7,730	1.1403	1.1115	F	F
D2	US 101 SB	On from EB Marsh Rd		8,840	8,900	1.1659	1.1739	F	F

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Rd = Road, Seg. = Segment, SR = State Route, St = Street

Table A10.18 Arterial Segments Cumulative (2040) Full Project Volume, V/C Ratio, and LOS

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
1	Seaport Blvd Loop	North of 1a: Seaport Blvd and Pacific Shores Center Entrance Rd		967 (EB) / 607 (WB)	864 (EB) / 753 (WB)	0.2998 (EB) / 0.2112 (WB)	0.2635 (EB) / 0.2255 (WB)	A (EB) / A (WB)	A (EB) / A (WB)
2	Seaport Blvd (North)	1a: Seaport Blvd and Pacific Shores Center Entrance Rd	2: Seaport Blvd and Seaport Ct	997 (EB) / 607 (WB)	870 (EB) / 750 (WB)	0.6937 (EB) / 0.4694 (WB)	0.6134 (EB) / 0.4991 (WB)	B (EB) / A (WB)	B (EB) / A (WB)
3	Seaport Blvd (Middle 1)	2: Seaport Blvd and Seaport Ct	3: Seaport Blvd and Chesapeake Dr	1,065 (EB) / 673 (WB)	944 (EB) / 890 (WB)	0.741 (EB) / 0.5699 (WB)	0.6656 (EB) / 0.5967 (WB)	C (EB) / A (WB)	B (EB) / A (WB)
4	Seaport Blvd (Middle 2)	3: Seaport Blvd and Chesapeake Dr	4: Seaport Blvd and Blomquist St / E Bayshore Rd	1,846 (EB) / 763 (WB)	1,098 (EB) / 1,563 (WB)	1.3295 (EB) / 0.6241 (WB)	0.7657 (EB) / 1.0412 (WB)	F (EB) / B (WB)	C (EB) / F (WB)
4N	Seaport Blvd (South) / SR 84 (Woodside Rd) (North)	4: Seaport Blvd and Blomquist St / E Bayshore Rd	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	3,412 (EB) / 2,184 (WB)	2,613 (EB) / 2,538 (WB)	1.6089 (EB) / 1.1095 (WB)	1.22 (EB) / 1.1301 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
5N	SR 84 (Woodside Rd) (Middle Top)	4N: SR 84 (Woodside Rd) and US 101 NB Off-Ramp / US 101 NB On-Ramp	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	3,412 (EB) / 2,184 (WB)	2,613 (EB) / 2,538 (WB)	1.6089 (EB) / 1.1095 (WB)	1.22 (EB) / 1.1301 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
6N	SR 84 (Woodside Rd) (Middle Bottom)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	6N: SR 84 (Woodside Rd) and Broadway	3,687 (EB) / 3,103 (WB)	2,993 (EB) / 3,197 (WB)	1.7189 (EB) / 1.4942 (WB)	1.3369 (EB) / 1.4137 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
7N	SR 84 (Woodside Rd) (South)	6N: SR 84 (Woodside Rd) and Broadway	7: SR 84 (Woodside Rd) / Middlefield Rd	3,060 (EB) / 2,202 (WB)	2,437 (EB) / 2,555 (WB)	2.1668 (EB) / 1.5577 (WB)	1.6402 (EB) / 1.6931 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
8	Blomquist St	4: Seaport Blvd and Blomquist St / E Bayshore Rd	8: Maple St and Blomquist St	379 (NB) / 437 (SB)	466 (NB) / 403 (SB)	0.5429 (NB) / 0.7333 (SB)	0.6312 (NB) / 0.5466 (SB)	A (NB) / C (SB)	B (NB) / A (SB)
9	Maple St	8: Maple St and Blomquist St	9: Maple St and Veterans Blvd	489 (EB) / 325 (WB)	384 (EB) / 592 (WB)	0.6711 (EB) / 0.4559 (WB)	0.517 (EB) / 0.7914 (WB)	B (EB) / A (WB)	A (EB) / C (WB)

Arterial Seg. #	Arterial Seg. Name	From Int.	To Int.	Hourly Volume (vehicles)		Volume-to-Capacity Ratio		LOS	
				AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
10N	Veterans Blvd (East)	5N: SR 84 (Woodside Rd) and US 101 SB Off-Ramp / US 101 SB On-Ramp	9: Maple St and Veterans Blvd	886 (NB) / 839 (SB)	988 (NB) / 814 (SB)	0.6047 (NB) / 0.5721 (SB)	0.6562 (NB) / 0.5402 (SB)	B (NB) / A (SB)	B (NB) / A (SB)
11	Whipple Ave	10: Whipple Ave / E Bayshore Rd and US 101 NB Off-Ramp	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	2,896 (EB) / 1,609 (WB)	2,345 (EB) / 1,567 (WB)	1.9437 (EB) / 1.0985 (WB)	1.5548 (EB) / 1.0426 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
12	Veterans Blvd (West)	9: Maple St and Veterans Blvd	11: Whipple Ave and US 101 SB Off-Ramp / Veterans Blvd	1,172 (NB) / 1,625 (SB)	1,773 (NB) / 1,388 (SB)	0.5362 (NB) / 0.7354 (SB)	0.787 (NB) / 0.6126 (SB)	A (NB) / C (SB)	C (NB) / B (SB)
13	E Bayshore Rd / Haven Ave	4: Seaport Blvd and Blomquist St / E Bayshore Rd	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	473 (NB) / 466 (SB)	441 (NB) / 643 (SB)	0.6374 (NB) / 0.615 (SB)	0.5944 (NB) / 0.8483 (SB)	B (NB) / B (SB)	A (NB) / D (SB)
14	SR 84 (Marsh Rd) (North)	12: SR 84 (Marsh Rd) / Marsh Rd and SR 84 (Bayfront Expy) / Haven Ave	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	2,442 (EB) / 3,241 (WB)	3,154 (EB) / 2,931 (WB)	1.6518 (EB) / 2.1851 (WB)	2.1284 (EB) / 1.9762 (WB)	F (EB) / F (WB)	F (EB) / F (WB)
15	SR 84 (Marsh Rd) (South)	13: SR 84 (Marsh Rd) and US 101 NB Off-Ramp	14: SR 84 (Marsh Rd) and US 101 SB Off-Ramp	2,425 (EB) / 2,223 (WB)	3,451 (EB) / 2,130 (WB)	1.6353 (EB) / 1.5088 (WB)	2.3263 (EB) / 1.4441 (WB)	F (EB) / F (WB)	F (EB) / F (WB)

Source: CDM Smith, 2024.

Key: SB = Southbound, NB = Northbound, EB = Eastbound, WB = Westbound, AM = morning, PM = evening, LOS = Level of Service, Ave = Avenue, Blvd = Boulevard, Ct = Court, Dr = Drive, Expy = Expressway, Int. = Intersection, Rd = Road, Seg. = Segment, SR = State Route, St = Street, E = East, N = North, S = South, W = West