City of Bellingham
WASHINGTON

LINCOLN-LAKEWAY

MULTIMODAL TRANSPORTATION STUDY

October 2021

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WHAT TRANSPORTATION CAN BE.

LINCOLN-LAKEWAY MULTIMODAL TRANSPORTATION STUDY

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October 2021

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Chapter 1. Introduction

The City of Bellingham initiated this study to evaluate and identify a suite of multimodal solutions to support the future development and changing needs of land uses in the Lincoln-Lakeway study area. The study area's close proximity to jobs, services, and housing makes it an attractive area to live or locate a business. However, the area is bisected by I-5, with only a few north-south and east-west connections. The connections, such as Lakeway Drive, Lincoln Street, and Samish Way not only serve area residents and businesses, but also provide for important citywide connectivity for pedestrians, bicycles, transit, and vehicles. As the area continues to evolve and grow with expansion of retail businesses, the City's civic campus, schools, and more multi-family housing options, the need to provide improved transportation mobility and safety for all modes is critical.

Project Goals and Purpose

The purpose of the study was to document existing, proposed, and possible land uses in the study area and analyze the effect that new development may had on the local and state multimodal transportation system for people walking, biking, riding transit buses, and driving passenger, service, and freight vehicles. Existing conditions on the transportation system were documented to provide a 2020 baseline and changes on the local and state multimodal transportation system were forecasted to 2040 using microsimulation software with inputs from the 2018 Whatcom Council of Governments (WCOG) regional travel demand model. Findings were measured, analyzed, and documented with recommendations for mitigation and improvements, where needed.

Alternative scenarios were examined using microsimulation software for vehicle traffic circulation and intersection control (signals or roundabouts) at intersections within the study area, pedestrian and bicycle mobility, and implications for Whatcom Transit Authority (WTA) public transit bus route performance measures. Ultimately, short-term, mid-term, and long-term multimodal transportation system improvements were identified and recommended, which will allow Public Works to program local funding as well as seek state and federal grant funding for construction in future years. This study allows WSDOT to justify funding for improvements to State highway facilities and WTA to justify funding for transit-supportive improvements on City streets.

The goals of this multimodal transportation study include, but are not limited to:

- **Public Safety**: Identifying safety improvements for people using all modes of transportation (walking, biking, transit, driving, and delivering freight).
- **Mode Shift**: Identifying transportation improvements intended to support and enhance transportation trips made by walking, biking, and riding transit, balanced with the need maintain system performance for both private automobiles and freight vehicles.
- **Mobility Enhancement**: Identifying cost-effective and feasible methods to reduce I-5's impact as a mobility barrier to east-west trips made by walking and biking.
- **Multimodal Integration**: Support continued and improved integration with state facilities and transit (WTA) operations, etc.

The results of this study allows Bellingham to identify capital transportation improvements at a finer scale than what is currently identified in the citywide Multimodal Transportation Chapter (pages 32-35; Tables A – D) of the Bellingham Comprehensive Plan, but in a more cohesive manner rather than the current reliance on one-time Transportation Impact

Analyses (TIAs) that are only required for major developments. This allows Bellingham to require proportionate share funding participation toward identified capital improvements in the study area from all new developments, as well as forming the basis for public-private funding partnerships in the future.

Stakeholder and Public Outreach Process

The Lincoln-Lakeway Multimodal Transportation Study officially kicked off at the beginning of March 2020, but on March 13, 2020 Washington Governor Jay Inslee issued a statewide "Stay at Home" order due to the global COVID-19 pandemic unfolding around the world. Traditional personal transportation mobility throughout Bellingham fell to all-time historic lows and the project team had to immediately pivot from plans for multimodal data collection, neighborhood meetings, and a public open house to other methods to collect data, as well as engage the general public and the residents of neighborhoods surrounding the study area.

Community Survey

After March 13, in-person meetings were not allowed, but because many more people were spending more time at home during the "Stay at Home" order, the project team developed an online community survey. A citywide press release was issued on May 11, 2020 with a link to the online Community Survey, which was emailed to Neighborhood Association Presidents and Representatives on the Mayor's Neighborhood Advisory Commission. The survey was made available in Spanish language by request, paper copies were produced and distributed to the residents of the Lakeway Estates senior mobile home park on Lincoln Street, and staff worked with Community Relations staff at Western Washington University (WWU) to reach students living in apartment complexes within the study area.

The online survey was open from May 11 to June 1, 2020 and received 558 individual responses. In June and July 2020, the project team and a WWU Master's Degree recipient with a thesis focused on surveys of Pacific Crest Trail through-hikers sifted through all 558 survey responses and tabulated the data into meaningful summaries, tables, and graphics. The Community Survey Final Report was published on August 7, 2020, posted on the project web page, and a link to the final report was emailed to Neighborhood Associations. A summary of findings is provided on pages 18 – 20 of the Community Survey Final Report. The top category for needing improvements was Maintaining sidewalk space for people walking (65%), followed by Maintaining existing vehicle lane widths (47%). The least important improvement was Providing dedicated new space for bicyclists (32%) and Widening sidewalk space for wheelchairs (26%).

These are interesting responses considering that they are not consistent with the stated goals and purpose of the study. Currently, there is no physical space for bicyclists on Lakeway Drive west of Puget Street and the existing sidewalks on Lakeway Drive are the absolute minimum to meet federal ADA standards. The 2012 Pedestrian Master Plan and 2014 Bicycle Master Plan include recommendations for improvements on the Lakeway Drive underpass beneath I-5 and these were studied with WSDOT staff involvement in the 2016-2017 Lakeway Drive Bikeway Study. The need for pedestrian and bicycle improvements on the Lakeway Drive underpass beneath I-5 is also identified in the 2019 WSDOT Active Transportation Plan. In 2021, the Bellingham City Council approved a citywide ADA Transition Plan titled Mobility For All, which is required by state and federal government. In 2021, WTA is also completing a long-range transit plan titled WTA 2040, in which pedestrian and wheel chair accessibility to WTA transit stops is a primary consideration. These responses make clear that many people do not seem to be familiar with existing goals or long-range transportation plans approved by Bellingham, WTA, WSDOT, and WCOG or the focal shift in the transportation industry away from auto-oriented roads to multimodal corridors. In future public presentations, the region's multimodal goals should be more clearly

highlighted so that public expectations will register with multi-agency goals, policies, and transportation plans.

Neighborhood Association Meetings

Bellingham has very active and organized Neighborhood Associations that hold monthly meetings. The original study scope included both public meetings with Neighborhood Associations in the study area, as well as two public open houses. As mentioned above, in-person gatherings and public meetings have not been allowed since mid-March 2020. Many Neighborhood Associations have been using online meeting platforms to conduct meetings, although attendance appears to be relatively low compared to in-person meetings. The project team worked with several surrounding Neighborhood Associations to present the multi-agency Lincoln-Lakeway Multimodal Transportation Study and the WSDOT I-5 Operations & Transportation Demand Management Study to neighborhood residents and allow them to ask questions and provide comments to the project team The presentations are available on the Lincoln-Lakeway Multimodal Transportation Study web page.

City and WSDOT staff made presentations to four Neighborhood Associations, as follows:

- October 8, 2020 – Samish Neighborhood Association
- October 28, 2020 – York Neighborhood Association
- December 8, 2020 – Puget Neighborhood Association
- June 14, 2021 – Sehome Neighborhood Association

Engage Bellingham

In addition to collecting public input through the Community Survey, in summer 2020, the City of Bellingham purchased a license to community engagement software from a company called “Bang The Table” and branded the local version as “Engage Bellingham.” After the City and WSDOT made presentations at online Neighborhood Association meetings, City staff created a project page for the Lincoln-Lakeway Multimodal Transportation Study on the Engage Bellingham platform.

The Engage Bellingham platform was made available to the public from January to March 2021 and allowed the public to engage interactively within the project study boundaries by adding location pins, making comments, and asking questions of City, WTA, WSDOT, and WCOG staff. The project team collected 215 individual comments from the Engage Bellingham platform from January to March 2021 and kept the platform page current with new features and options for public engagement as the study progressed. The study recommendations for transportation improvements were presented in short, narrated power point presentations posted on Engage Bellingham from September 7 through 23, 2021. The final report was completed during the first half of October 2021.

Calendar Summary of Public Engagement

- March 1, 2020 - Lincoln-Lakeway Multimodal Transportation Study Began
- March 16, 2020 – Governor Inslee “Stay at Home Order”
- May 11, 2020 – Press Release for Community Survey
- June 5, 2020 – Community Survey Ends
- August 6, 2020 – Final Report for Community Survey
- October 8, 2020 – Samish Neighborhood Association
- October 28, 2020 – York Neighborhood Association
- December 8, 2020 – Puget Neighborhood Association
- January 21, 2021 – Engage Bellingham Phase 1 (Interactive Map & Comments)
- March 5, 2021 – End of Engage Bellingham Phase 1
- June 14, 2021 – Sehome Neighborhood Association
- June 17, 2021 – Multi-Agency Staff Walking Tour of Study Area
- September 7, 2021 - Engage Bellingham Phase 2 (Recommendations & Comments)

- September 23, 2021 – End of Engage Bellingham Phase 2
- October 11, 2021 - Final Report published
- October 12, 2021 – Presentation to Transportation Commission

Study Methodology

The Lincoln-Lakeway Multimodal Transportation Study focuses on the arterial street corridors and intersections surrounding the Lakeway Drive corridor between Ellis Street and Puget Street and the Lincoln Street corridor between Elwood Avenue and Fraser Street.

The study area is bound by Iowa Street to the north, N State Street and Ellis Street to the west, Ridgemont Way to the south and Puget Street to the east. The study area includes 16 streets and 31 intersections, as identified in Figure 1, and as listed below.

- Ellis Street-York Street between E Maple Street and N State Street
- E Maple Street between Ellis Street and N Samish Way
- Bill McDonald Parkway between 32nd Street and N Samish Way
- Lincoln Street between Elwood Avenue and Fraser Street
- N Samish Way between E Maple Street and Bill McDonald Parkway
- 36th Street between S Samish Way and Fielding Avenue
- Elwood Avenue between S Samish Way/Lincoln Street and 40th Street
- Lakeway Drive between Ellis Street and Puget Street
- Fraser Street between Lincoln Street and Puget Street
- Meador Avenue between N State Street and Fraser Street
- King Street between Lakeway Drive and Potter Street
- N State Street between York Street and Iowa Street
- Ohio Street between N State Street and King Street
- Iowa Street between N State Street and Moore Street
- Puget Street between Lakeway Drive and Fraser Street
- Potter Street between King Street and Orleans Street

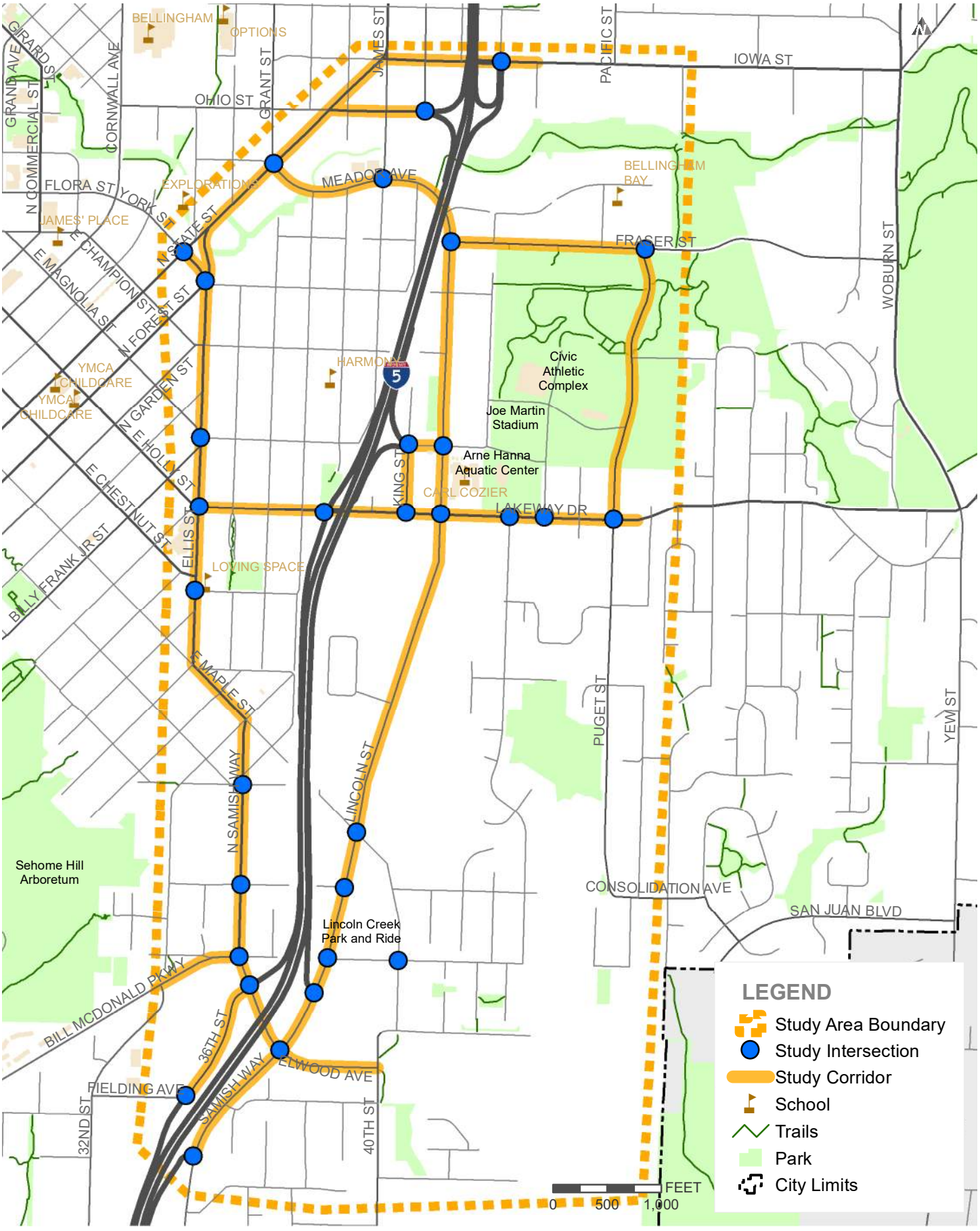
The Lincoln Street corridor extends from Elwood Avenue to the south to Fraser Street to the north, providing a north-south connection between the Samish Way bridge over I-5 and the Meador Avenue underpass of I-5. Currently, Lincoln Street from Fraser Street south to Potter Street includes one vehicle lane in each direction, with on-street parking and sidewalks on both sides of the street, and an uphill bike climbing lane and a downhill shared lane. From Potter Street to Lakeway Drive, Lincoln Street becomes four lanes wide with two southbound vehicle lanes, one northbound vehicle lane, and one pick-up/drop-off parking lane abutting Carl Cozier Elementary School. From Lakeway Drive south to Elwood Avenue, Lincoln Street includes two vehicle lanes in each direction with a center turn lane in places, and sidewalks on both sides of the street. No on-street parking is provided. There are marked bike lanes from Elwood Avenue to the south driveway for Fred Meyer grocery store, but no bicycle facilities between this driveway and Lakeway Drive.

The Lakeway Drive corridor within the study area extends between Ellis Street to the west and Puget Street to the east. Lakeway Drive provides an east-west connection through Bellingham, including an underpass under I-5. Currently, Lakeway Drive includes 5 travel lanes including a two-way center left-turn lane and sidewalks on both sides of the roadway through the study area. No on-street parking and no bicycle facilities are provided.

In addition to the 16 corridors identified above, 31 intersections within the study area are included in the analysis. The study intersections include the following:

1. Elllis Street/ E Holly Street/ Jersey Street/ Lakeway Drive
2. N Samish Way/ Abbott Street
3. N Samish Way/ Consolidation Avenue
4. N Samish Way/ Bill McDonald Parkway/ Byron Avenue
5. S Samish Way/ 36th Street/ I-5 SB Off-Ramp
6. Elwood Avenue/ S Samish Way/Lincoln Street
7. S Samish Way/ I-5 NB Off-Ramp
8. Lincoln Street/ Lakeway Drive
9. Lincoln Street/ E Maple Street
10. Lincoln Street/ Byron Avenue
11. Lincoln Street/ I-5 NB On-Ramp
12. Ashley Avenue/ Byron Avenue
13. I-5 SB Ramps/ Lakeway Drive
14. King Street/ Lakeway Drive
15. Nevada Street/ Lakeway Drive
16. Orleans Street/ Lakeway Drive
17. Puget Street/ Lakeway Drive
18. King Street/ Ohio Street/ I-5 SB Ramps
19. I-5 NB Ramps/ Moore Street/ Iowa Street
20. Grant Street/ N State Street/ Meador Avenue/ Kansas Street
21. James Street/ Meador Avenue
22. Lincoln Street/ Fraser Street
23. Puget Street/ Fraser Street
24. King Street/ Potter Street/ I-5 NB Ramps
25. Lincoln Street/ Potter Street
26. N State Street/ York Street
27. Ellis Street/ N Forest Street/ York Street
28. Ellis Street/ Potter Street
29. Ellis Street/ Chestnut Street
30. 36th Street/ I-5 SB On-Ramp/ Fielding Avenue
31. Lincoln Street/ Consolidation Avenue

All study corridors and study intersections are shown on Figure 1.



Study Area

Lincoln-Lakeway Multimodal Study

FIGURE 1

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Chapter 2. Existing Conditions

Introduction

This section summarizes the existing facilities in the study area for each travel mode. As defined in Chapter 1, the study area extends along the Lakeway Drive and Lincoln Street corridors, and is generally bound by the Samish Way/I-5 interchange to the north, Samish-Maple-Ellis corridor to the west, Iowa Street/I-5 interchange to the north, and Puget Street to the east. This review of existing conditions will identify multimodal facilities within the study area as well as provide a review of current gaps in the systems.

The Lincoln-Lakeway study area is primarily residential, with existing commercial centers along the Lakeway Drive and Samish-Maple-Ellis corridors and an approved commercial center under development along the west side of Lincoln Street. Existing Major commercial trip generators along the Lakeway Drive corridor include Fred Meyer grocery and Whole Foods Market on the southwest and southeast corners of the Lincoln Street/Lakeway Drive intersection, respectively.

Within the study area, local destinations also include Carl Cozier Elementary School, A Loving Space Preschool, North Coast Preschool, and the Western Washington University (WWU) Lincoln Creek Transportation Center park-n-ride served by Whatcom Transportation Authority (WTA) transit buses. These destinations likely generate the majority of vehicle trips, as well as school bus trips or localized pedestrian trips. Just outside of the study area, the WWU campus is located approximately 1 mile to the southwest. Western Washington University is a large campus drawing students, visitors, faculty, and staff via all modes. Western Washington University provides more robust connections to the transit and vehicle roadway networks in the study area.

In addition, recreation areas including the Arne Hanna Aquatic Center, Civic Athletic Complex, Sportsplex Indoor Soccer and Ice Rink, and Joe Martin Stadium are available north of the Lakeway Drive corridor within the study area. These areas draw vehicle and non-motorized trips from the surrounding residential areas within the study area as well as regional trips from other areas of Bellingham.

Pedestrian System

The following section describes the existing characteristics of the pedestrian facilities and network within the study area.

Environment

Primary pedestrian travel patterns within the study area include travel to and from the commercial and recreational areas along Lakeway Drive. The natural areas and Civic Field Park Trail surrounding Civic Stadium offer pedestrian access through the study area north of Lakeway Drive and south of Fraser Street.

Sidewalks are provided along both sides of the streets for the majority of the study area corridors. All study area corridors include sidewalks on one or both sides of the roadway, with the exception of 36th Street, which does not have sidewalks or bike lanes and has deep ditches on either side. In addition, the study area corridors are identified in the *Bellingham Comprehensive Plan* as part of the Primary Pedestrian Network.

All signalized study intersections within the study area include marked crosswalks. In addition, flashing pedestrian crossings are included on the Lincoln Street, Lakeway Drive, E

Maple Street, and N Samish Way study corridors. Two flashing pedestrian crossings are included on Lakeway Drive within the study area at Grant Street and Orleans Street. Flashing crossings are also included on E Maple Street midblock between Mason Street and Newell Street, on N Samish Way between Abbott Street and Consolidation Avenue, and on Lincoln Street at the driveway to Fred Meyer grocery store. The study area pedestrian facilities are shown on Figure 2.

Demand

A new methodology leveraging third party probe data was used as an additional measure of pedestrian activity within the study area. Data was downloaded from Strava Metro, a subgroup of the popular fitness application called Strava; where subscribers track their bicycle and run/walk activity via GPS on their smartphone or fitness tracker. The data that users upload to this application is anonymized and snapped to roadway and trail segments so that the level of activity along each roadway segment can be measured. While the counts provided in this platform are not direct replacements for actual pedestrian counts, they can be used to some extent as a proxy to measure the general level of pedestrian (run/walk) activity on facilities across the study area.

The Strava Metro data shows the highest levels of pedestrian activity in the northern half of the study area, specifically around the Civic Athletic Complex and the city streets on the west side of I-5 near downtown. Pedestrian activity on Lincoln and Lakeway is in the low to medium range compared to the rest of the study area pedestrian activity. The supplemental Strava Metro pedestrian activity within the study area is shown on Figure 3.

Since 2008, Bellingham has participated each autumn in the WSDOT voluntary pedestrian and bicycle counting effort and pedestrian counts were collected by the City of Bellingham at three locations within the study area: the Lincoln Street/Lakeway Drive, Grant Street/Lakeway Drive, and James Street/Meador Avenue intersections. Weekday peak hour counts at these locations are summarized in Table 1.

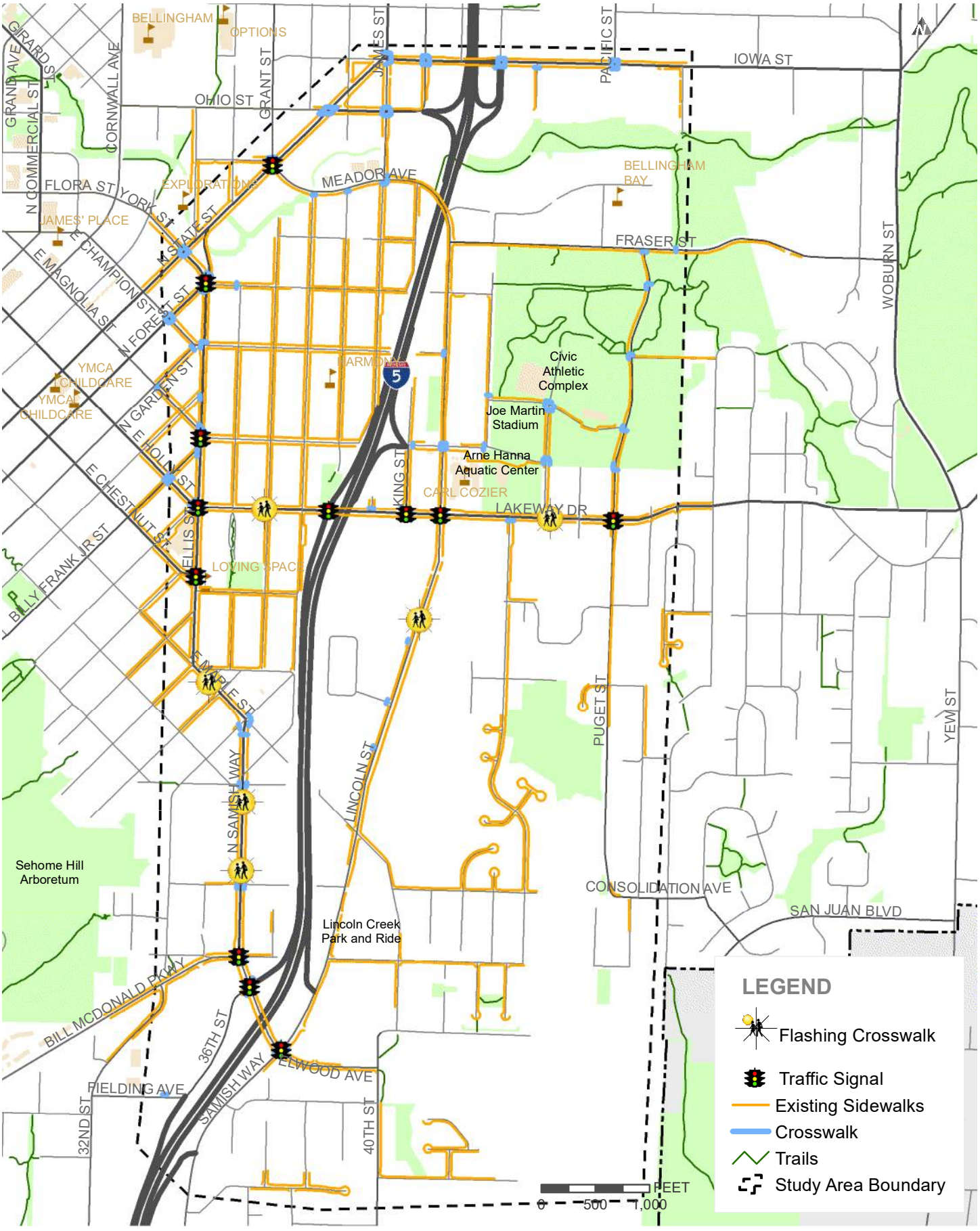
Table 1. Annual Weekday Peak Hour Pedestrian Counts

	AM Peak Hour			PM Peak Hour		
Location	**2017**	**2018**	**2019**	**2017**	**2018**	**2019**
Lincoln St/ Lakeway Dr	54	52	37	117	87	96
Grant St/ Lakeway Dr	50	41	41	171	183	147
James St/ Meador Ave	55	45	33	58	77	56

Source: City of Bellingham, 2020

Network Barriers

The pedestrian network includes sidewalks on the majority of study area roadways as well as marked crosswalks at signalized intersections; however, the network within the study area lacks north-south connections outside of Lincoln Street. For example, areas of Nevada Street and Puget Street lack sidewalks on one or both sides of the roadway intermittently between Lakeway Drive and Consolidation Avenue. In addition, I-5 adds a structural barrier between the east and west sides of the study area. Pedestrian connections across I-5 are currently available at the Lakeway Drive underpass, Samish Way overpass, Meador Avenue underpass, and Iowa Street underpass. These locations provide the only opportunities for pedestrian travel east-west across the I-5 corridor and some, such as Lakeway Drive beneath I-5, are of minimal width to meet ADA accessibility requirements and are not considered comfortable for people walking. With pedestrian trip generators of Western Washington University and the Civic Athletic Complex located on opposite sides of I-5, trips between these locations may become difficult on foot.



Pedestrian Facilities

Lincoln-Lakeway Multimodal Study

FIGURE **2**

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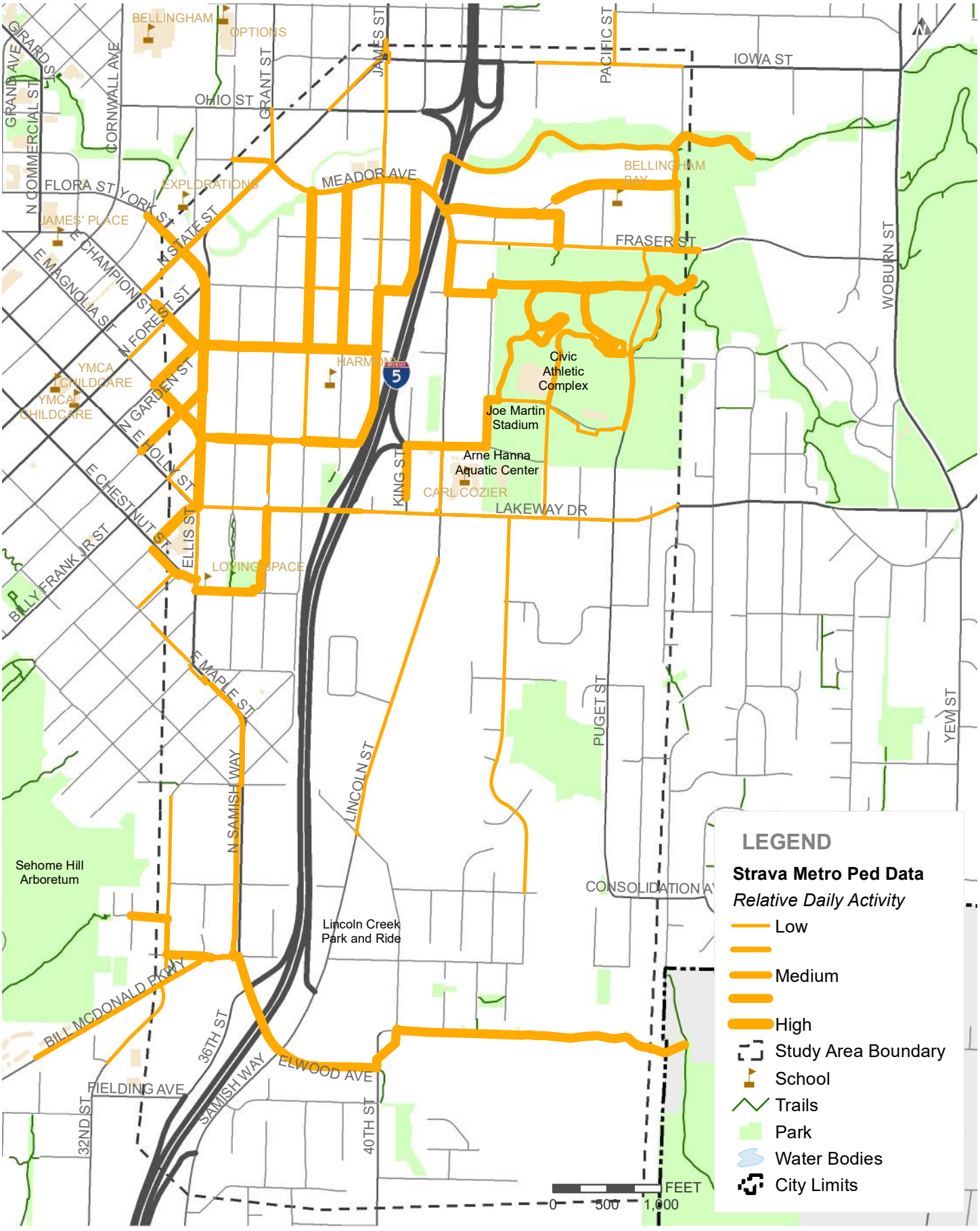

Strava Metro - Pedestrian Activity

Lincoln-Lakeway Multimodal Study

FIGURE 3

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Bicycle System

The following section describes the existing characteristics of the bicycle facilities networks within the study area.

Environment

Within the study area, the Bill McDonald Parkway, Elwood Avenue, Lincoln Street, Fraser Street, Meador Avenue, Puget Street, and Nevada Street corridors include designated bicycle facilities. These corridors are identified in the *Bellingham Comprehensive Plan* as part of the Primary Bicycle Network.

The Bill McDonald Parkway, Elwood Avenue, Lincoln Street, Fraser Street, and Puget Street corridors include designated bicycle lanes. In addition, the section of Puget Street between Lakeway Drive and the Civic Athletic Complex includes buffered bike lanes. The Meador Avenue corridor includes bike lanes between N State Street and James Street and climbing lanes between James Street and Lincoln Street. The Lincoln Street corridor includes climbing lanes between Meador Avenue and Potter Street, and shared lane markings between Potter Street and Lakeway Drive. Nevada-44th-Byron-Ashley-Dumas-40th Street is marked as a designated Bike Boulevard with traffic calming features from Lakeway Drive to Elwood Avenue.

In addition to the bicycle facilities identified on the study area corridors, trails are present throughout the Civic Athletic Complex and along the Whatcom Creek Trail within the study area.

Study area bicycle facilities are shown on Figure 4 and a Bike Connectivity Graphic for this area is posted on the City web site.

Demand

A new methodology leveraging third party probe data was used to measure the bicycle activity within the study area. Data was downloaded from Strava Metro, a subgroup of the popular fitness application called Strava; where users track their bicycle and run/walk activity via GPS on their smartphone or fitness tracker. The data that users upload to this application is anonymized and snapped to roadway and trail segments so that the level of activity along each roadway segment can be measured. While the counts provided in this platform are not direct replacements for actual bicycle counts, they can be used (to a greater extent than run/walk data) as a proxy to measure the general level of bicycle activity on facilities across the study area.

The Strava Metro data shows the highest levels of bicycle activity along Lakeway Drive, Lincoln Street and Fraser St and Meador Ave to the north. The Strava data also shows medium levels of activity along the Samish / Ellis corridor. Strava Metro bicycle activity data is shown on Figure 5. The most recent bicycle count data on Lakeway Drive is shown in Table 2 and described below.

Since 2008, Bellingham has participated each autumn in the WSDOT voluntary pedestrian and bicycle counting effort. Bicycle counts were collected by the City of Bellingham at three locations within the study area: the Lincoln Street/Lakeway Drive, Grant Street/Lakeway Drive, and James Street/Meador Avenue intersections. Weekday peak hour counts at these locations are summarized in Table 2. 2020 data is not shown, as counts were conducted during COVID-19 travel restrictions and WWU was not offering in-person classes for students, thus greatly decreasing the volumes beyond ‘normal’ conditions.

Table 2. Annual Weekday Peak Hour Bicycle Counts

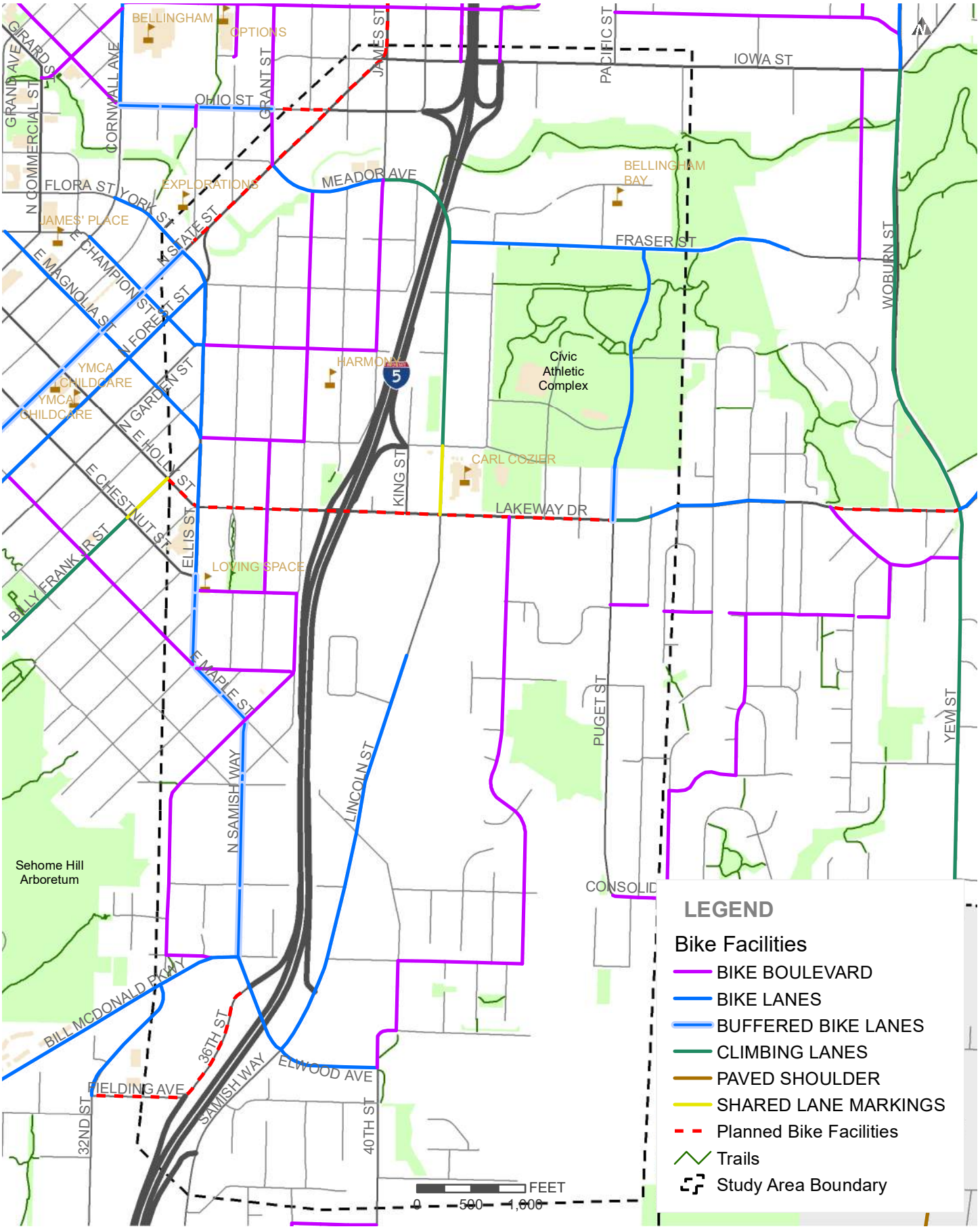
	AM Peak Hour			PM Peak Hour		
Location	**2017**	**2018**	**2019**	**2017**	**2018**	**2019**
Lincoln St/ Lakeway Dr	32	26	24	42	30	35
Grant St/ Lakeway Dr	37	13	32	53	41	29
James St/ Meador Ave	28	41	51	84	64	81

Source: City of Bellingham, 2020

Network Barriers

The bicycle network includes bicycle facilities on six key study area roadways as well as trails throughout the Civic Athletic Complex; however, many study area roadways do not include bicycle facilities. For example, north-south bicycle connections within the study area to the east of I-5 are limited to parts of Lincoln Street, Nevada Street, and Puget Street. In each location, bicycle facilities are present either to the north or south of Lakeway Drive, but a continuous connection across Lakeway Drive in this area is not available. In addition, I-5 adds a structural barrier between the east and west sides of the study area. Bicycle connections across I-5 are currently available at the Samish Way overpass and Meador Avenue underpass. These locations provide the only opportunities for bicycle travel east-west across the I-5 corridor. With bicycle trip generators of Western Washington University and the Civic Athletic Complex located on opposite sides of I-5, trips between these locations may become difficult via bicycle.

A bicycle facility on Lakeway Drive beneath I-5 is recommended as the second highest priority out of 185 prioritized projects listed in the Bellingham Bicycle Master Plan. A GIS connectivity analysis using ViaCity software demonstrates the latent demand and connectivity benefit of completing this important bicycle connection across I-5. The connectivity analysis is summarized in Figures 6 to 10.



Bicycle Facilities

Lincoln-Lakeway Multimodal Study

FIGURE 4

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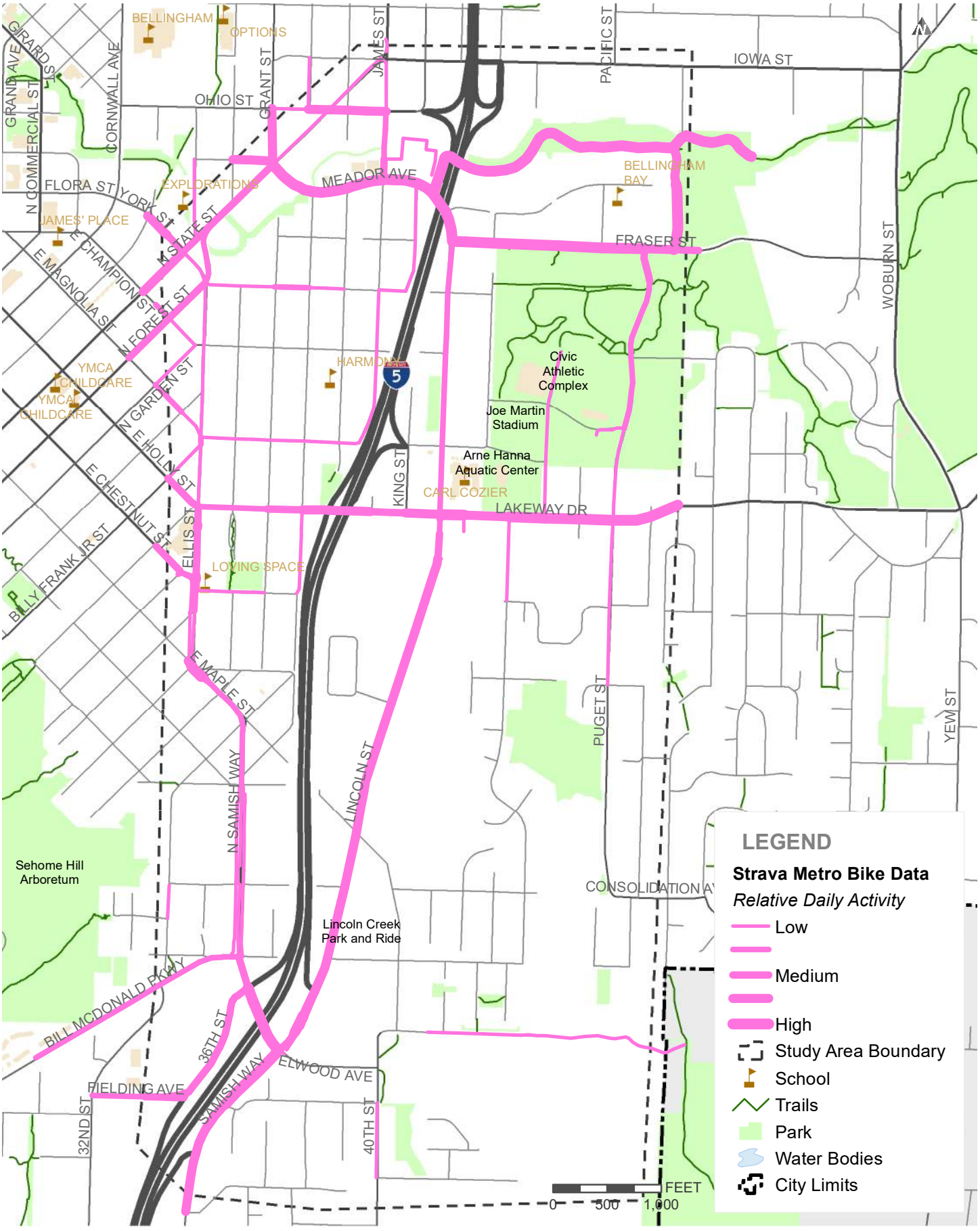

Strava Metro - Bicycle Activity

Lincoln-Lakeway Multimodal Study

FIGURE 5

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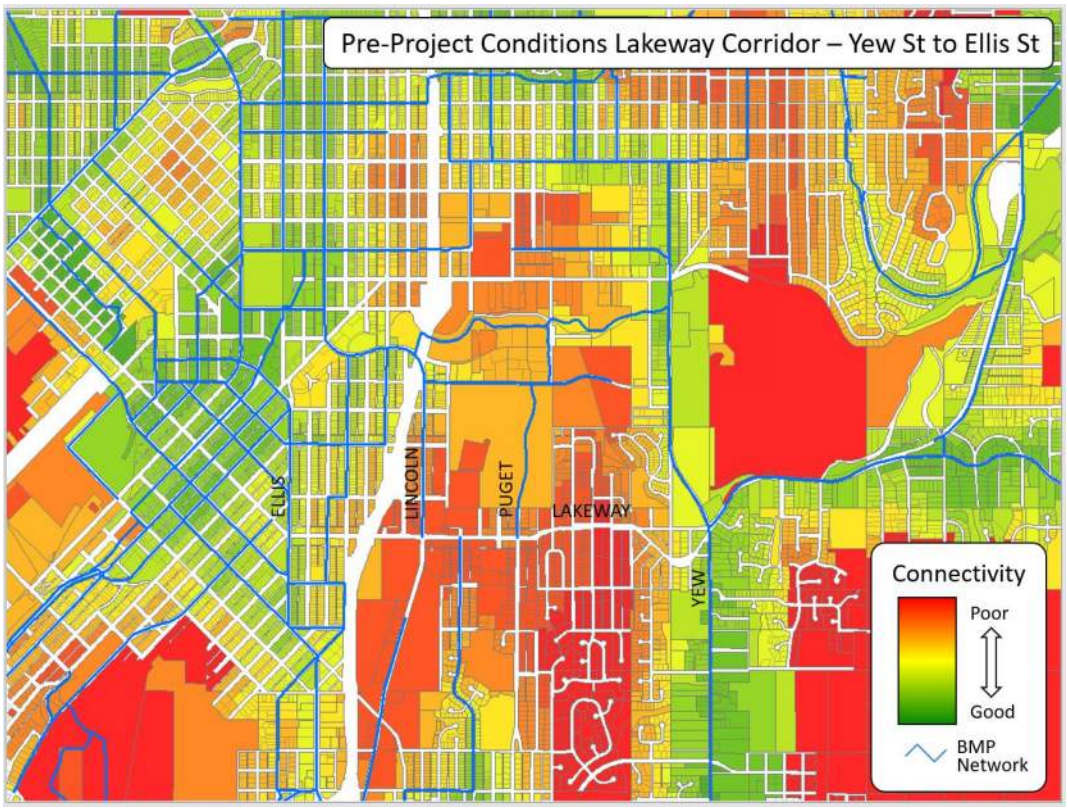


Figure 6. Lakeway Corridor Pre-Project Conditions, Yew Street to Ellis Street

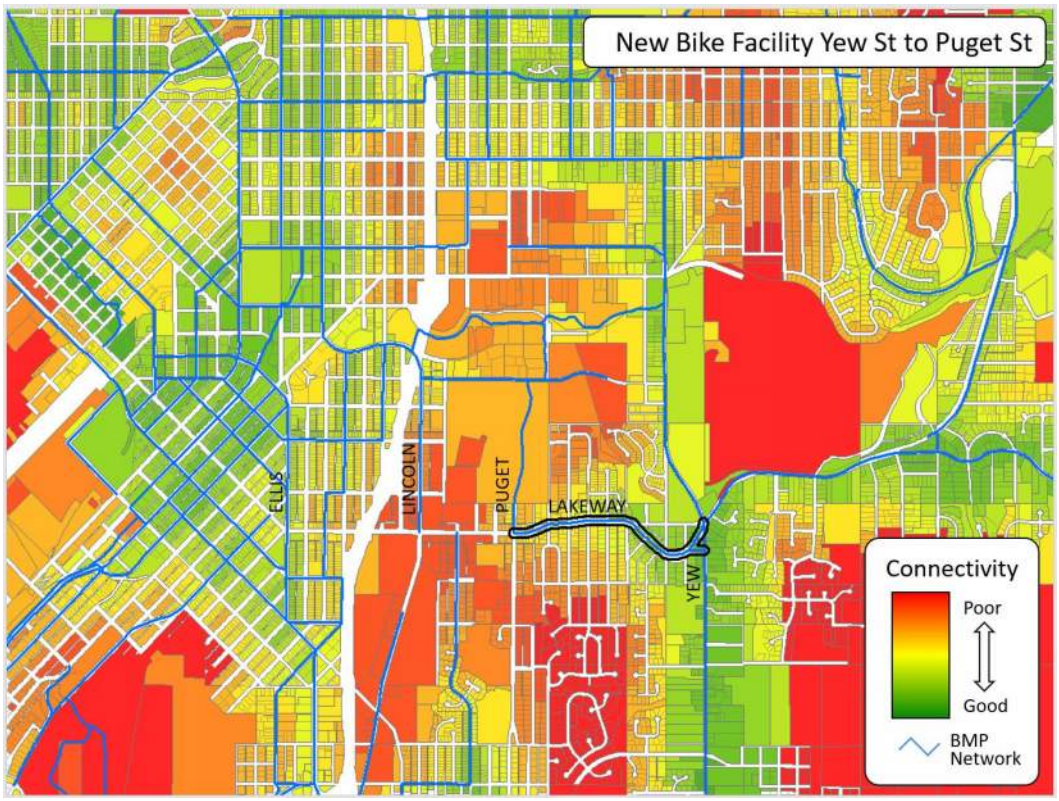


Figure 7. Lakeway Corridor New Bike Facility, Yew Street to Puget Street

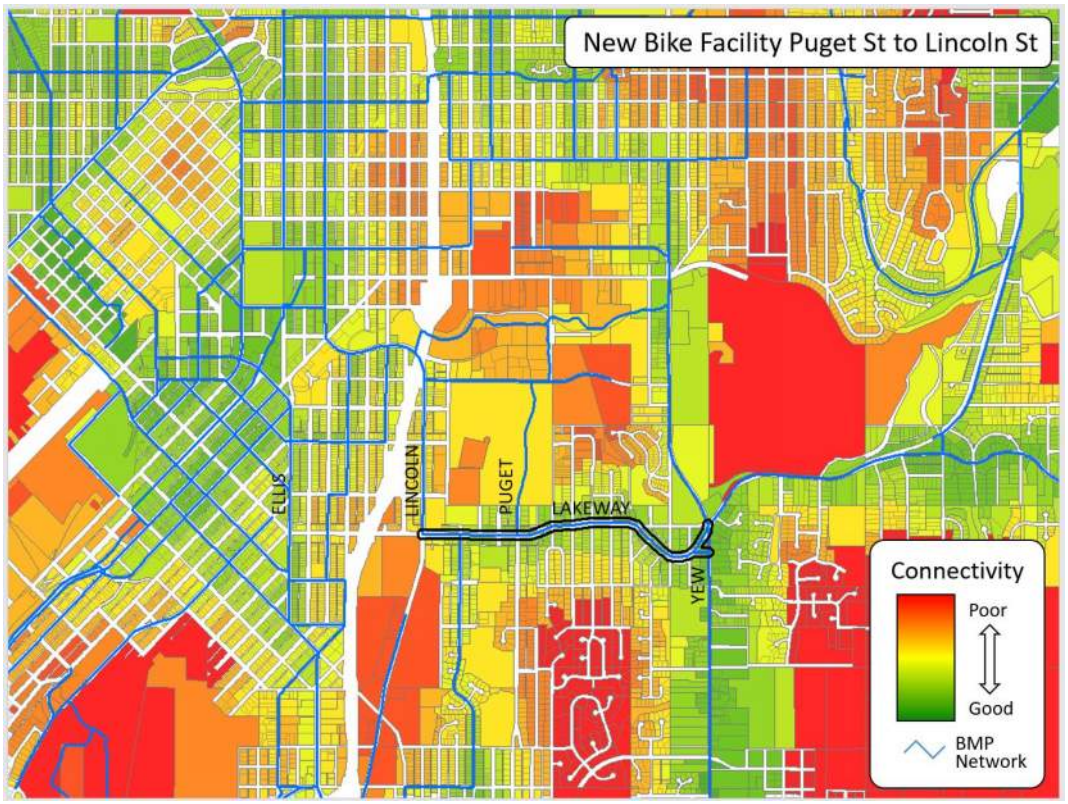


Figure 8. Lakeway Corridor New Bike Facility, Puget Street to Lincoln Street

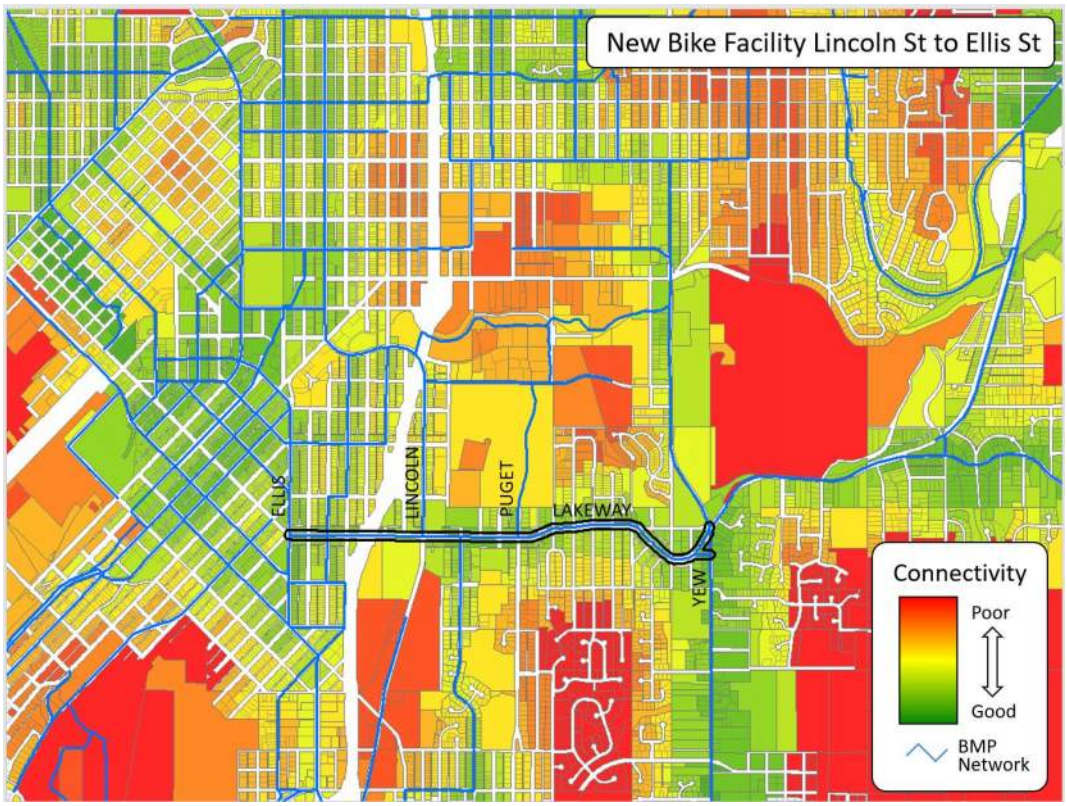


Figure 9. Lakeway Corridor New Bike Facility, Lincoln Street to Ellis Street

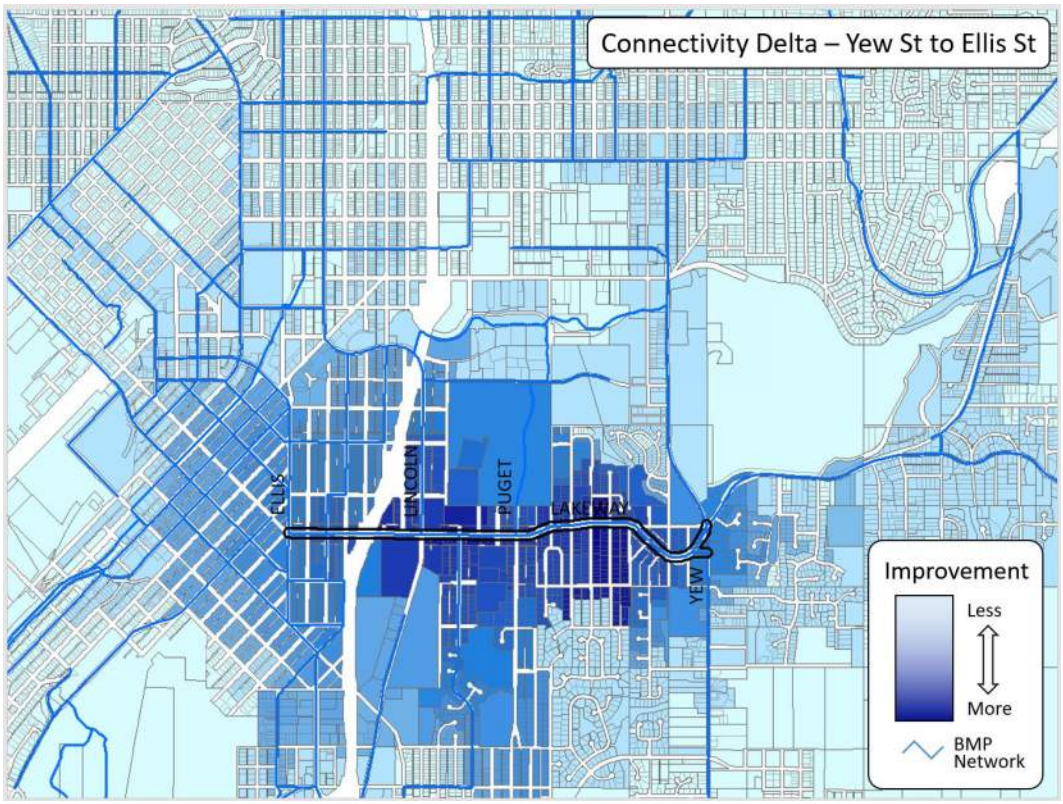


Figure 10. Lakeway Corridor Connectivity Delta, Yew Street to Ellis Street

Transit

Transit service in the study area is provided by Whatcom Transit Authority (WTA). Local transit routes serving stops within the study area and hours of operation are summarized in Table 3. Note: WTA transit routes and service were consistently rated with very high marks by the 558 respondents to the Community Survey conducted in May-June 2020.

Table 3. Existing Transit Routes

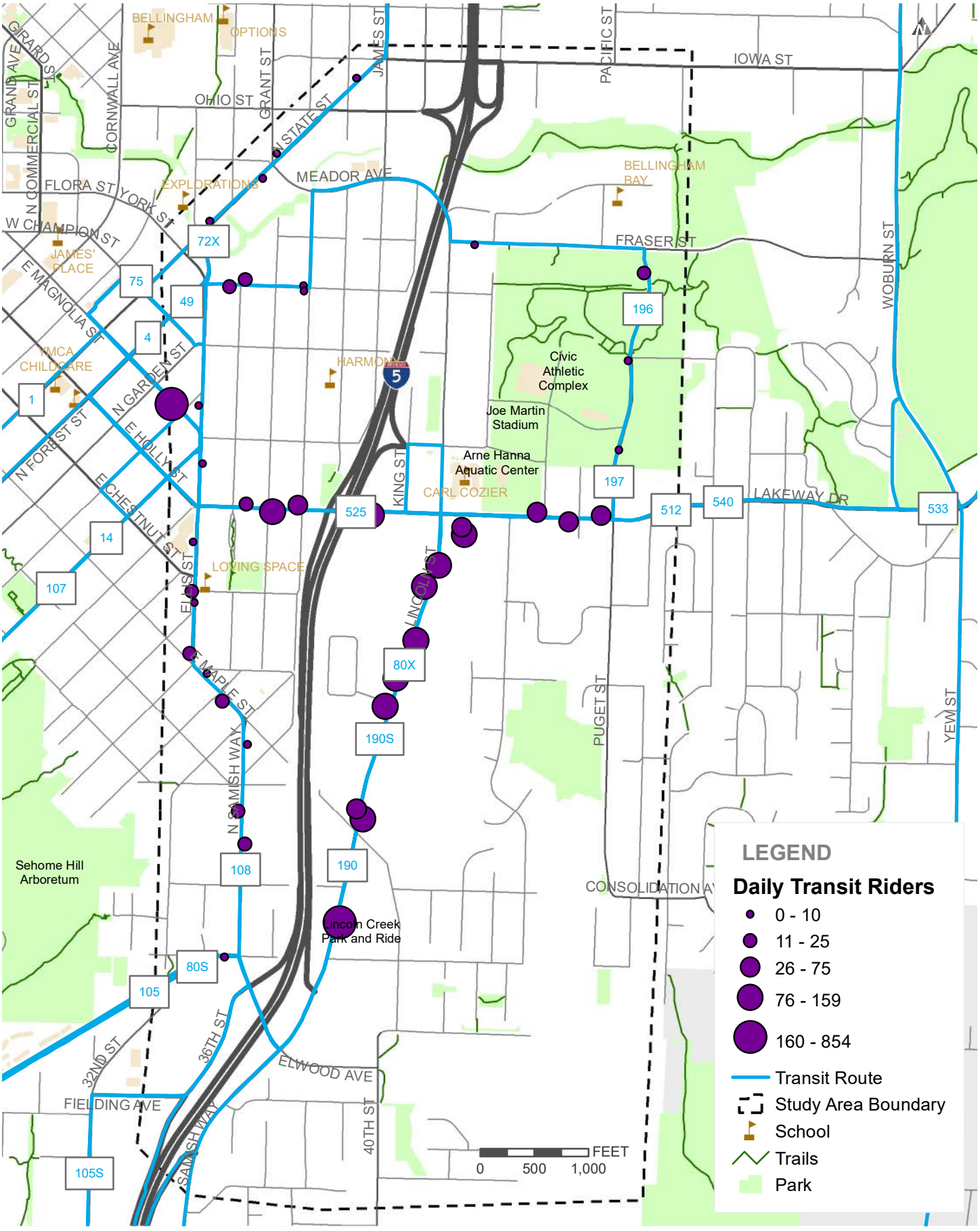
Route	Days of Operation	Hours of Operation	
		Weekdays	Weekends
49 – Downtown to Bakerview Spur	Daily	7:00 a.m. to 12:45 p.m. 1:15 p.m. to 6:00 p.m.	9:00 a.m. to 6:00 p.m.
72X – Kendall to Bellingham	Daily	7:30 a.m. to 7:00 pm..	7:30 a.m. to 7:00 pm..
80S – Western Washington University to Lincoln Creek	Monday-Friday	6:45 a.m. to 8:00 p.m.	-
80X – Mt. Vernon to Bellingham	Daily	6:45 a.m. to 8:00 p.m.	9:00 a.m. to 6:45 p.m.
105 – Fairhaven to Downtown	Daily	7:00 a.m. to 10:45 p.m.	8:00 a.m. to 10:
108 – Samish to Western Washington University	Monday-Saturday	7:00 a.m. to 5:15 p.m.	8:45 a.m. to 6:00 p.m.
190 – Lincoln Street to Downtown	Daily	6:30 a.m. to 11:00 p.m.	Saturday: 7:45 a.m. to 11:00 p.m. Sunday: 8:30 a.m. to 9:00 p.m.
196 – Western Washington University/Lincoln	Monday-Saturday	7:00 a.m. to 6:30 p.m.	9:00 a.m. to 6:30 p.m.
197 – Lincoln/Western Washington University	Monday-Saturday	7:15 a.m. to 7:00 p.m.	7:15 a.m. to 6:00 p.m.
512 – Sudden Valley to Downtown	Daily	6:45 a.m. to 10:00 p.m.	Saturday: 8:00 a.m. to 10:00 p.m. Sunday: 8:00 a.m. to 8:30 p.m.
525 – Barkley to Downtown	Daily	6:45 a.m. to 8:00 p.m.	Saturday: 8:30 a.m. to 7:00 p.m. Sunday: 8:30 a.m. to 7:30 p.m.
540 – Sunset to Downtown	Monday-Saturday	6:15 a.m. to 6:30 p.m.	8:15 a.m. to 6:30 p.m.

Source: Whatcom Transit Authority (WTA), 2020

Within the study area, 14 primary transit routes provide transit access along study area corridors, including the 49, 72X, 80S, 80X, 105, 108, 190, 190S, 196, 197, 512, 525, and 540 routes. Study area corridors with high transit ridership include Lincoln Street and Lakeway Drive. Transit stop locations and approximate daily transit ridership within the study area is shown on Figure 11.

The WWU-owned Lincoln Creek Transportation Center (park and ride) is located within the study area on the east side of Lincoln Street between the Lincoln Street/Byron Avenue and Lincoln Street/E. Maple Street intersections. The park and ride provides transit connections throughout Bellingham from Whatcom Transit Authority (WTA) and to Mt. Vernon via Skagit Transit.

Weekday AM and PM peak period transit delays are shown on Figures 12 and 13, respectively. As shown in Figure 12, the study area corridors experience minor to moderate transit delays during the AM peak period. Riders experience moderate delays at transit stops on E Maple Street and N Samish Way. During the PM peak period, study area corridors experience moderate to large delays, with the largest delays along Ellis Street, E Maple Street, N Samish Way, and at the Lincoln Street/Lakeway Drive intersection. PM peak period transit delays are summarized on Figure 13.



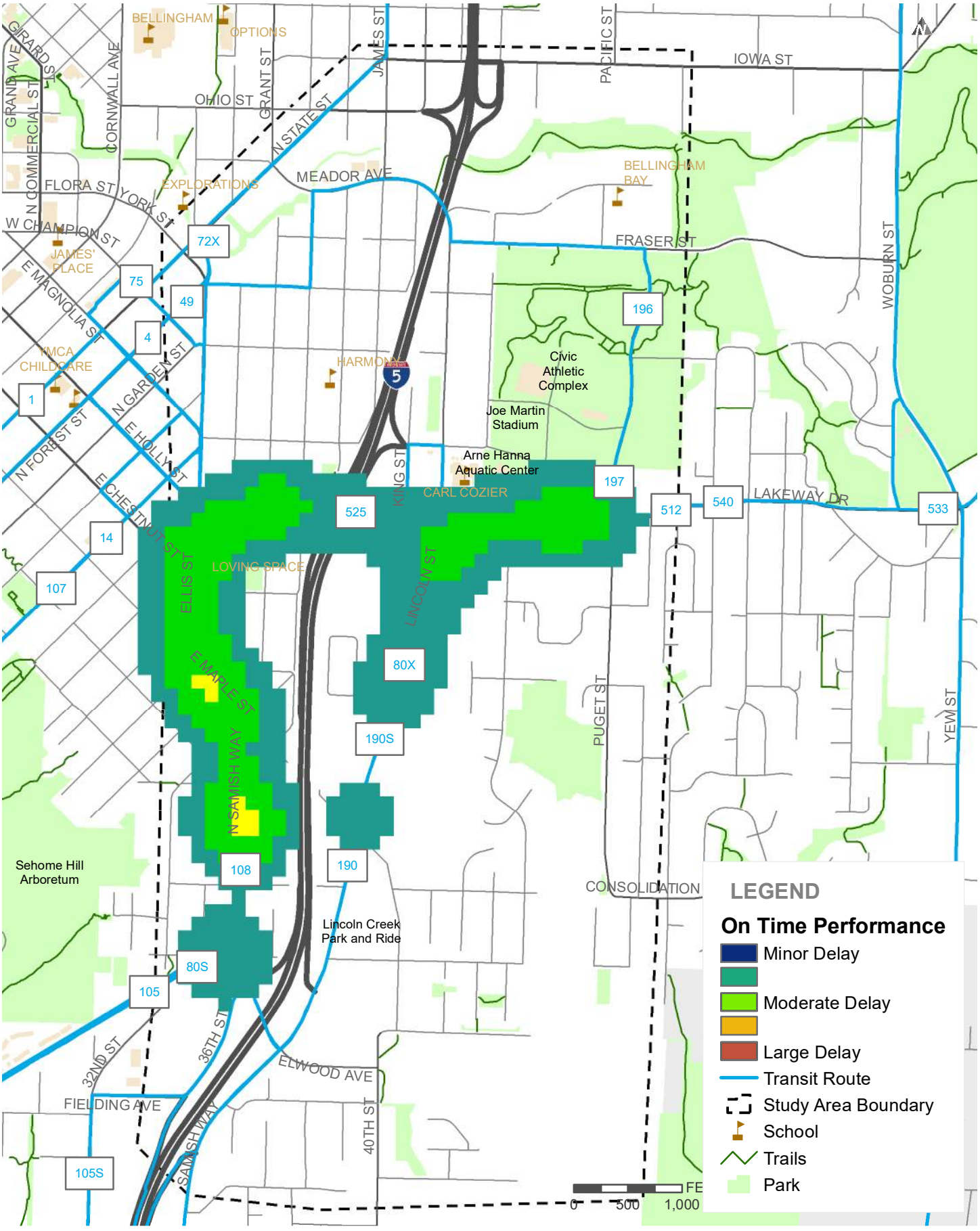
Transit Facilities and Daily Boardings

Lincoln-Lakeway Multimodal Study

FIGURE 11

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 11 - Transit Facilities.mxd

transpogroup

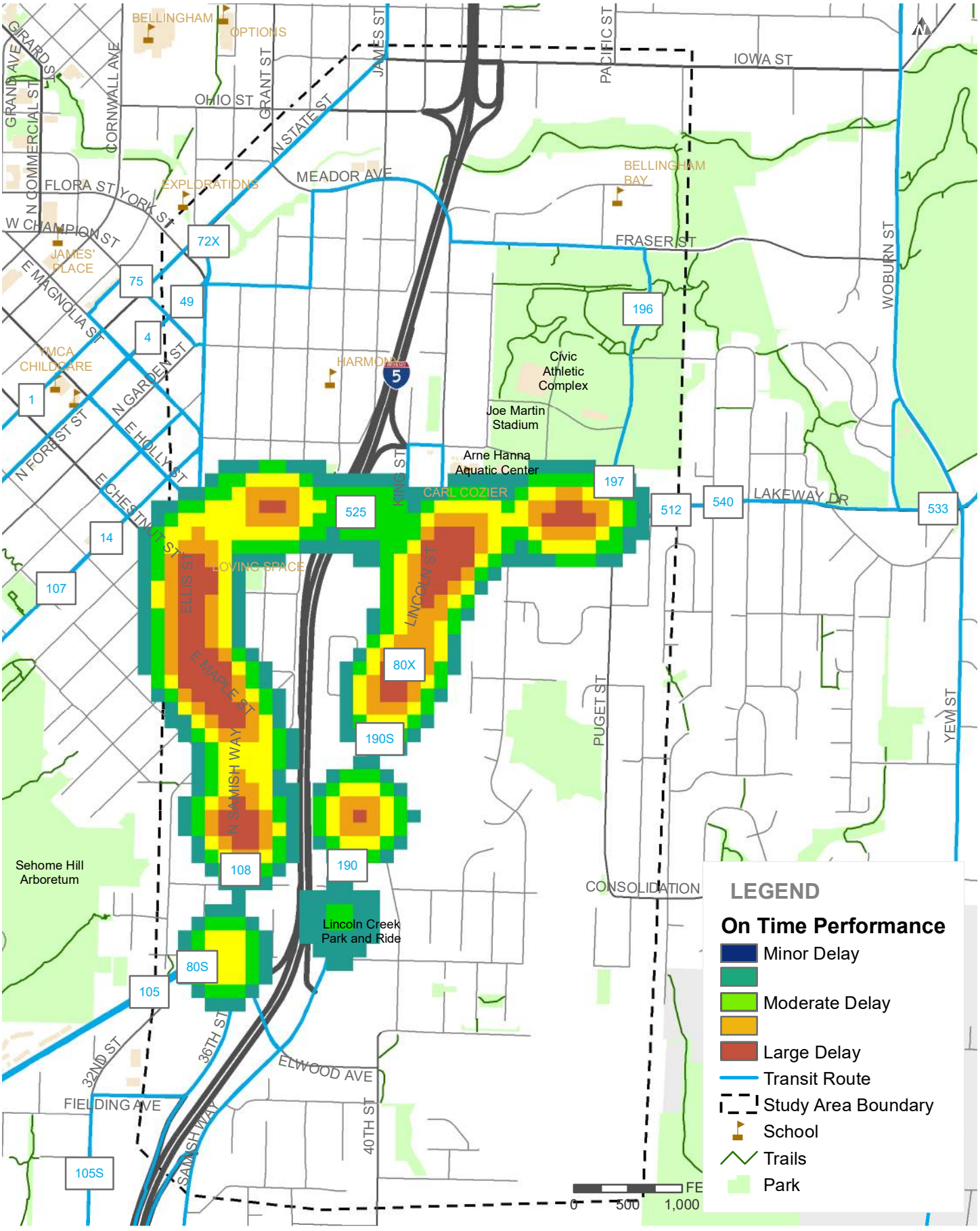


AM Peak Period Transit Schedule Adherence

Lincoln-Lakeway Multimodal Study

FIGURE 12

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 12 - Transit Delay - AM.mxd



PM Peak Period Transit Schedule Adherence

Lincoln-Lakeway Multimodal Study

FIGURE 13

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 13 - Transit Delay - PM.mxd

Freight Network

The Bellingham Comprehensive Plan (pages 26-27) identifies Designated Freight Truck Routes throughout the City. Designated Freight Truck Routes are classified by annual tonnage carried, with classes T-1 (greater than 10 million annual tons) through T-5 (less than 100,000 annual tons). The classification system is based on the Washington State Department of Transportation (WSDOT) Freight and Goods Transportation System (FGTS). I-5 is considered a T-1 classification. Within the study area, N State Street, Iowa Street, Ohio Street, and Lakeway Drive are identified as Freight Truck Routes. All are classified as class T-3 routes, carrying between 300,000 and 4 million annual tonnage. The study area freight network is shown on Figure 14. All changes to freight truck route FGTS designations are reflected in Chapter 9 of Bellingham's Transportation Report on Annual Mobility (TRAM).

Vehicle

The following section describes the existing characteristics of the vehicle roadway network within the study area.

Functional Classification System

The *Bellingham Comprehensive Plan* (pages 24-25) classifies Bellingham's street network into three categories: Principal Arterials, Secondary Arterials, Collector Arterials, and Residential Streets. The Bellingham functional classification categories are described below.

Principal Arterials include major regional transportation corridors, including State and federal highways, that provide connections into Bellingham from other cities, Whatcom and Skagit Counties, and British Columbia, Canada. Principal arterials typically carry very high traffic volumes.

Secondary Arterials include major local transportation corridors that provide connections across, within, and between different parts of Bellingham. Secondary arterials typically carry higher to medium traffic volumes.

Collector Arterials include local transportation corridors that provide connections from neighborhood residential streets to secondary and principal arterial streets. Collector arterials typically carry medium to lower traffic volumes.

Residential Streets include local access to individual driveways within residential neighborhoods. Residential streets typically carry lower traffic volumes.

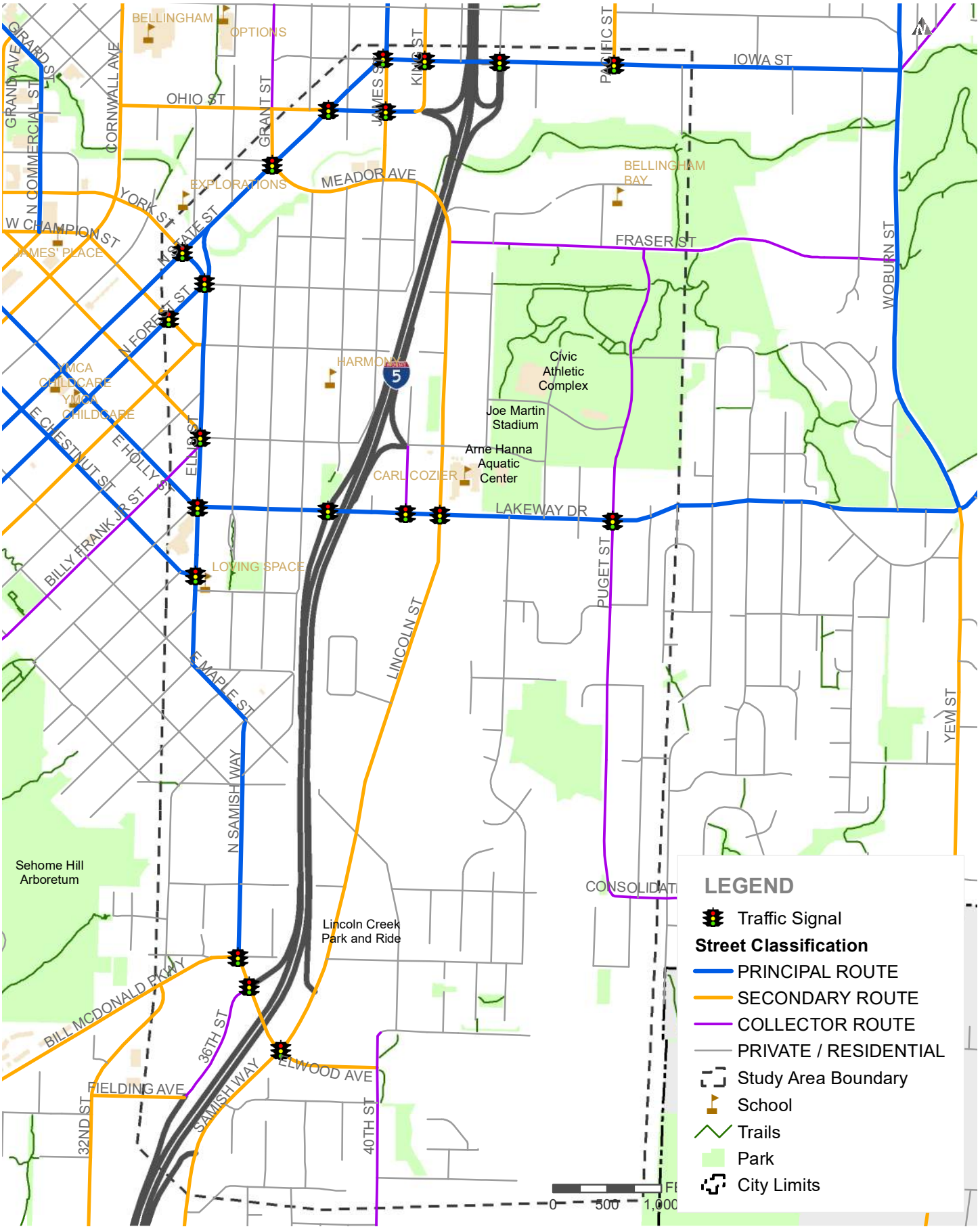
Any changes to local arterial street classifications are reflected in Chapter 9 of Bellingham's Transportation Report on Annual Mobility (TRAM). Roadway functional classification designations for the study area corridors are shown in Figure 15.

Freight Network Map

Lincoln-Lakeway Multimodal Study

FIGURE **14**

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 14 - Freight Network Map.mxd



Functional Classification and Traffic Signals

Lincoln-Lakeway Multimodal Study

FIGURE **15**

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Study Area Street System

Table 4 summarizes the characteristics of the study corridors included within the Lincoln-Lakeway study area.

Table 4. Study Area Existing Street System Summary

Study Corridor	Arterial Classification	Posted Speed Limit	Number of Travel Lanes	On-Street Parking	Sidewalks	Bicycle Facilities
Ellis St	Principal Arterial	25	3	No	Yes	Yes
E Maple St	Principal Arterial	35	3	No	Yes	Yes
Bill McDonald Pkwy	Secondary Arterial	35	2	No	Yes	Yes
Lincoln St	Secondary Arterial	25 / 35	3-5	No	Yes	Yes
N Samish Way	Principal Arterial	35	3	No	Yes	Yes
36th St (WSDOT ROW)	Collector Arterial	25	2	No	No	No
Elwood Ave	Secondary Arterial	25	2	No	Yes	Yes
Lakeway Dr	Principal Arterial	25	5	No	Yes	No
Fraser St	Collector Arterial	25	2	No	Yes (south side)	Yes
Meador Ave	Secondary Arterial	25	2	No	Yes	Yes
King St	Collector Arterial	25	2	Yes	Yes	No
N State St	Principal Arterial	25	5	No	Yes	No
Ohio St	Principal Arterial	25	2	Yes (north side)	Yes	Yes
Iowa St	Principal Arterial	35	5	No	Yes	No
Puget St	Collector Arterial	25	2	No	Yes (east side)	Yes
Potter St	Residential Street	25	2	Yes	Yes	No

Source: Transpo Group, 2020

Traffic Volumes

Weekday PM peak period (4:00 p.m. to 6:00 p.m.) intersection turning movement volumes were collected at 20 of the 31 total study intersections in 2016, 2017, 2019, and 2020. Due to the effects of COVID-19 and Washington's "Stay-At-Home" orders, additional intersection turning movement volumes were collected in October 2020. Work began on the Lincoln-Lakeway Multimodal Transportation Study at the beginning of March 2020, but due to the unanticipated and significant effects of the COVID-19 global pandemic on the City transportation system, adjustments to traffic volume data have been required.
As shown in Figure 16, the majority of PM peak hour intersection total entering vehicles (TEV) within the study area decreased due to the effects of COVID-19.

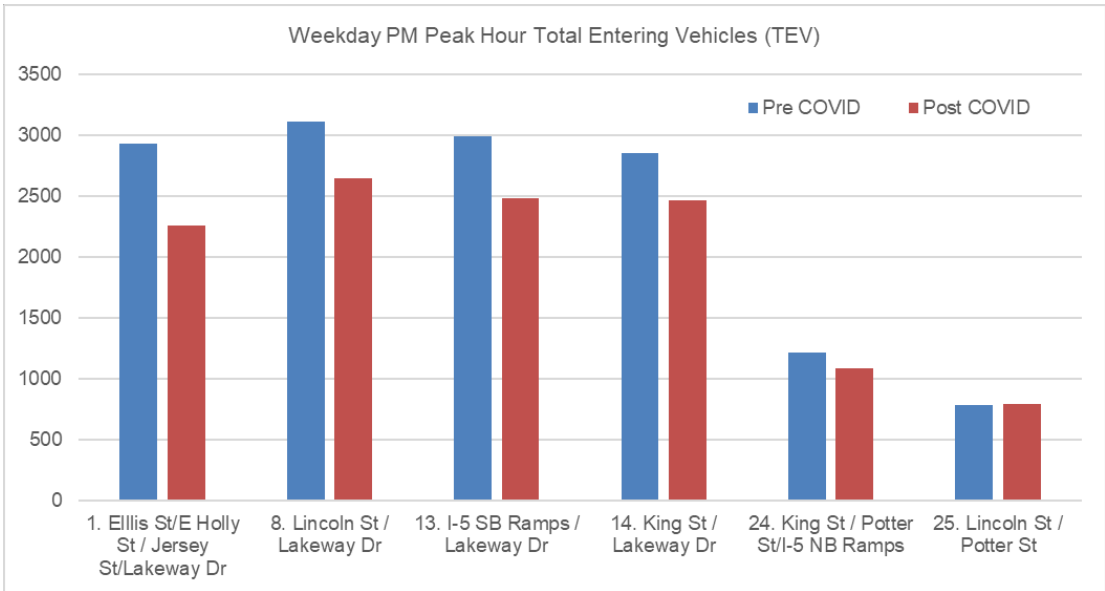


Figure 16. PM Peak Hour Volume Comparison

Detailed PM peak hour volume trends at these intersections are summarized in Table 5.

Table 5. Weekday (2020) PM Peak Hour Volume Comparison

	Pre-COVID		Post-COVID		Percent
Study Intersection	**Count Date**	**TEV[1]**	**Count Date**	**TEV**	**Change**
1. Elllis Street/ E Holly Street/ Jersey Street/ Lakeway Drive	March 2016	2,934	October 2020	2,255	-23%
8. Lincoln Street / Lakeway Drive	August 2017	3,110	October 2020	2,646	-15%
13. I-5 SB Ramps / Lakeway Drive	March 2016	2,993	October 2020	2,480	-17%
14. King Street / Lakeway Drive	August 2017	2,856	October 2020	2,467	-14%
24. King Street / Potter Street/I-5 NB Ramps	April 2016	1,214	October 2020	1,087	-10%
25. Lincoln Street / Potter Street	April 2016	780	October 2020	793	2%

Source: Transpo Group, 2020
1. TEV = total entering vehicles

As shown in Table 5, total entering vehicles are summarized at six study intersections on or adjacent to the Lakeway Drive corridor. All intersections experienced a decrease in volume after the implementation of the Stay at Home Orders due to COVID with the exception of the Lincoln Street/Potter Street intersection. On average, the study intersections experienced a decrease in total entering vehicles of approximately 13 percent.

Detailed existing PM peak period counts are included in Appendix A. The existing traffic volumes were rounded to the nearest 5 vehicles to account for daily fluctuations in traffic.

Figure 17 summarizes hourly weekday volumes collected on Lakeway Drive west of Grant Street in July 2015.

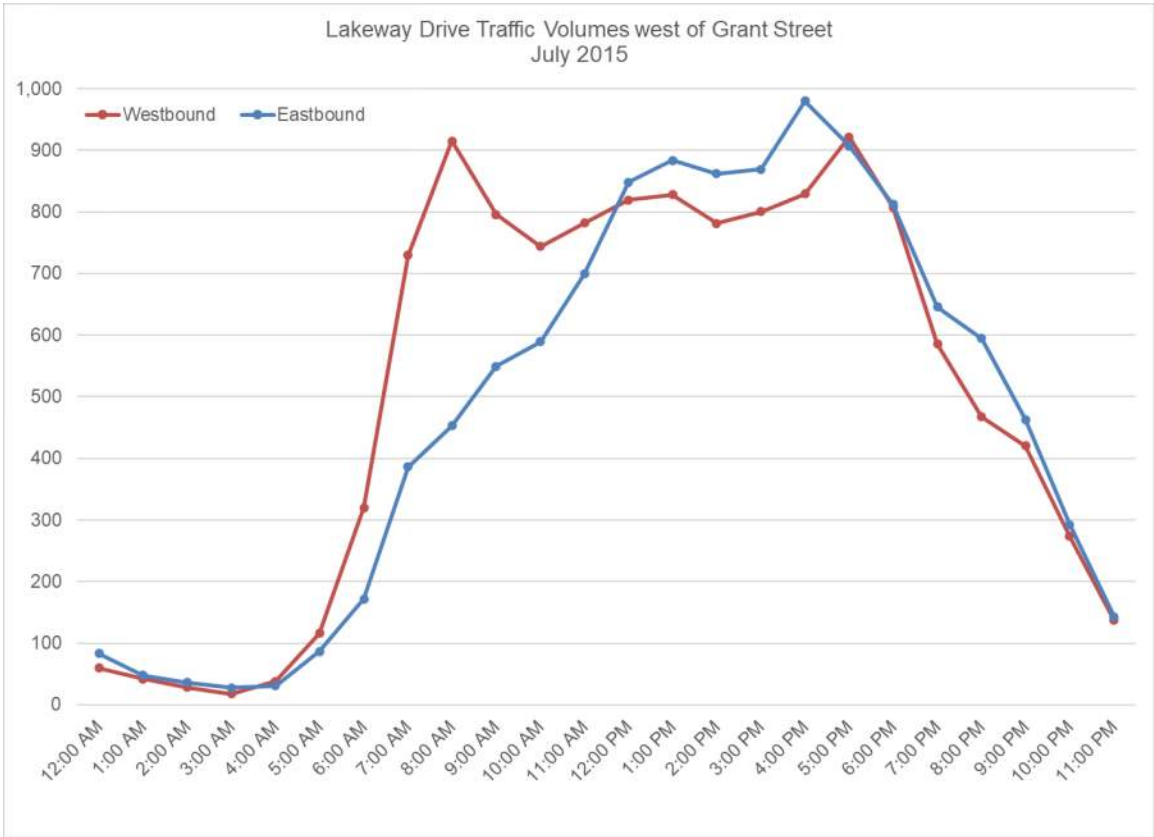


Figure 17. Lakeway Drive Hourly Volumes west of Grant Street

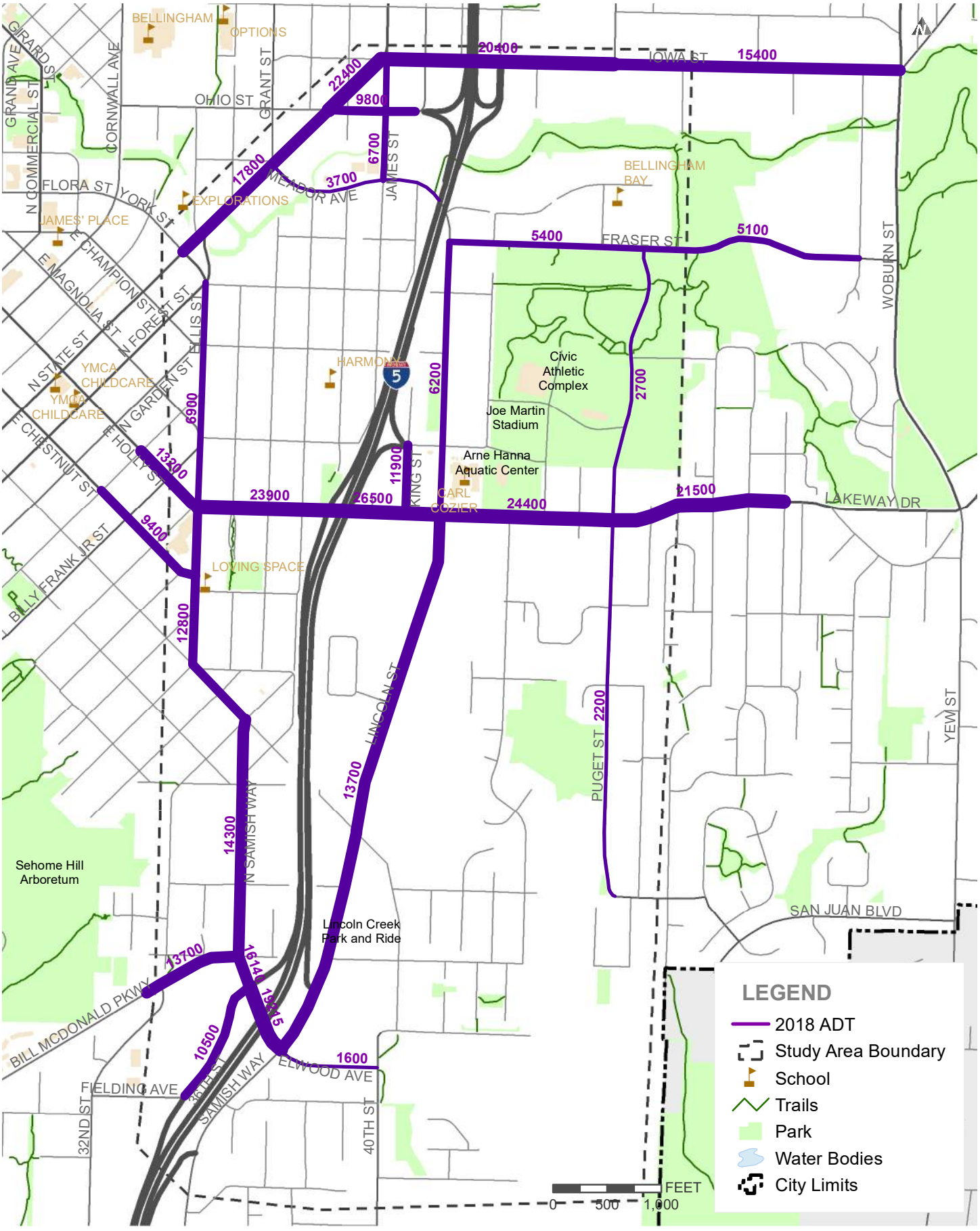
As shown in Figure 17, traffic volumes peak during the weekday PM peak period of 4:00 p.m. to 6:00 p.m. Secondary peaks in volume occur during the AM peak and during midday; however, these volumes are not as high as during the weekday PM peak. Therefore, this analysis focuses on traffic operations during the weekday PM peak hour.

Although the following analysis focuses on the PM peak period, there are several key movements that experience heavier traffic volumes during the AM peak and will be taken into consideration. Based on a review of AM and PM peak hour intersection counts collected in October 2020, the following movements experience increased directional traffic during the AM peak:

- Northbound left-turn at N Samish Way/Bill McDonald Parkway/Byron Avenue
- Westbound right-turn at S Samish Way/36th Street/I-5 SB Off-Ramp
- Westbound left-turn at I-5 SB Ramps/Lakeway Drive

In addition, 2018 annual daily traffic (ADT) volumes were provided by the City of Bellingham. ADT within the study area is included in Figure 18. As shown in Figure 18, the Lakeway Drive corridor carries between 21,500 and 23,900 ADT. The Lincoln Street corridor carries between 6,200 and 13,700 ADT within the study area.

An annual 2 percent growth rate was applied to the traffic counts to account for background growth between the count year and existing 2020 conditions.



2018 Daily Traffic Volumes

Lincoln-Lakeway Multimodal Study

FIGURE **18**

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 18 - ADT Map.mxd

Traffic Operations

The following summarizes traffic operations for existing conditions for the study area intersections.

The operational characteristics of an intersection are determined by calculating the intersection vehicular level of service (LOS). At unsignalized side-street, stop-controlled intersections, vehicular LOS is measured by the average delay on the worst-movement of the intersection. Traffic operations and average vehicle delay for an intersection can be described qualitatively with a range of vehicular levels of service (LOS A through LOS F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. Appendix B contains a detailed explanation of vehicular LOS criteria and definitions.

Weekday PM peak hour traffic operations for existing and future without-project conditions were evaluated at the study intersections based on the procedures identified in the *Highway Capacity Manual 6th Edition* (2016) and were evaluated using *Synchro 10*. *Synchro 10* is a software program that uses *HCM* methodology to evaluate intersection vehicular LOS and average vehicle delays. Results for the existing and future without-project operations analyses are summarized in Table 6. Detailed vehicular LOS worksheets for each study intersection are included in Appendix C.

NOTE: Work began on the Lincoln-Lakeway Multimodal Transportation Study at the beginning of March 2020, but due to the unanticipated and significant effects of the COVID-19 global pandemic on the City transportation system, adjustments to traffic volume data have been required.

Table 6. Existing PM Peak Hour Vehicular LOS Summary

Intersection	Traffic Control	PM Peak Hour		
		LOS[1]	Delay[2]	WM[3]
1. Ellis St/ E Holly St/ Jersey St/ Lakeway Dr[4]	Signal	B	14	-
2. N Samish Way/ Abbott St	TWSC	C	22	WB
3. N Samish Way/ Consolidation Ave	TWSC	C	24	WB
4. N Samish Way/ Bill McDonald Pkwy/ Byron Ave	Signal	C	24	-
5. S Samish Way/ 36th St/ I-5 Southbound Off-Ramp[4]	Signal	C	28	-
6. Elwood Ave/ S Samish Way/ Lincoln St	Signal	C	33	-
7. S Samish Way/ I-5 Northbound Off-Ramp	TWSC	D	31	EB
8. Lincoln St/ Lakeway Dr	Signal	D	44	-
9. Lincoln St/ E Maple St	TWSC	F	77	WB
10. Lincoln St/ Byron Ave	TWSC	F	50	WB
11. Lincoln St/ I-5 Northbound On-Ramp	TWSC	B	12	NBL
12. Ashley Ave/ Byron Ave	TWSC	B	10	EB
13. I-5 Southbound Ramps/ Lakeway Dr	Signal	D	36	-
14. King St/ Lakeway Dr[4]	Signal	C	34	-
15. Nevada St/ Lakeway Dr	TWSC	E	37	NBL
16. Orleans St/ Lakeway Dr	TWSC	E	44	NB
17. Puget St/ Lakeway Dr	Signal	B	16	-
18. King St/ Ohio St/ I-5 Southbound Ramps[5]	TWSC	-	-	-
19. I-5 Northbound Ramps/ Moore St/ Iowa St	Signal	C	20	-
20. Grant St/ N State St/ Meador Ave/ Kansas St[5]	Signal	B	16	-
21. James St/ Meador Ave	AWSC	C	16	-
22. Lincoln St/ Fraser St	TWSC	F	62	WBL
23. Puget St/ Fraser St	TWSC	B	12	NB
24. King St/ Potter St/ I-5 Northbound Ramps	NA	-	-	-
25. Lincoln St/ Potter St	TWSC	D	27	EB
26. N State St/ York St	Signal	B	13	-
27. Ellis St/ N Forest St/ York St	Signal	D	35	-
28. Ellis St/ Potter St/ Magnolia St[5]	Signal	-	-	-
29. Ellis St/ Chestnut St	Signal	B	14	-
30. 36th St/ I-5 Southbound On-Ramp/ Fielding Ave	TWSC	C	21	-
31. Lincoln St/ Consolidation Ave[5]	TWSC	-	-	-

Source: Transpo Group, 2020
1. Level of Service (A – F) as defined by the *Highway Capacity Manual* 6th Edition (TRB, 2016)
2. Average delay per vehicle in seconds
3. Worst movement or approach reported for side-street stop-controlled intersections
4. Evaluated using HCM 2000 due to limitations in the HCM 6th Edition and intersection configurations.
5. No traffic count available at this time.

As shown in Table 6, the majority of study intersections and all signalized study intersections currently operate at vehicular LOS D or better. The two-way stop-controlled Nevada Street/Lakeway Drive and Orleans Street/Lakeway Drive currently operate at vehicular LOS E, and the two-way stop-controlled intersections at Lincoln Street/E Maple Street, Lincoln Street/Byron Avenue, Lincoln Street/Fraser Street, and King Street/Potter Street/I-5 NB Ramps currently operate at vehicular LOS F. Detailed vehicular LOS worksheets are included in Appendix C.

Roadway Safety

Recent collision records were reviewed within the study area to identify existing traffic safety issues. The most recent five-year summary of accident data from WSDOT is for the period between January 1, 2015 and December 31, 2019. A summary of the total and average annual number of reported accidents at each study intersection is provided in Table 7.

In the most recent five-year period, all study intersections experienced an annual average of approximately 6 collisions or less, with the exception of the Lincoln Street/Lakeway Drive intersection that experienced an average of approximately 10 collisions per year. At the Lincoln Street/Lakeway Drive intersection, the majority of collisions resulted in property damage only and there were no fatalities. The most common collisions types were rear-end and angle collisions. Rear-end collisions can occur frequently on congested corridors such as Lakeway Drive.

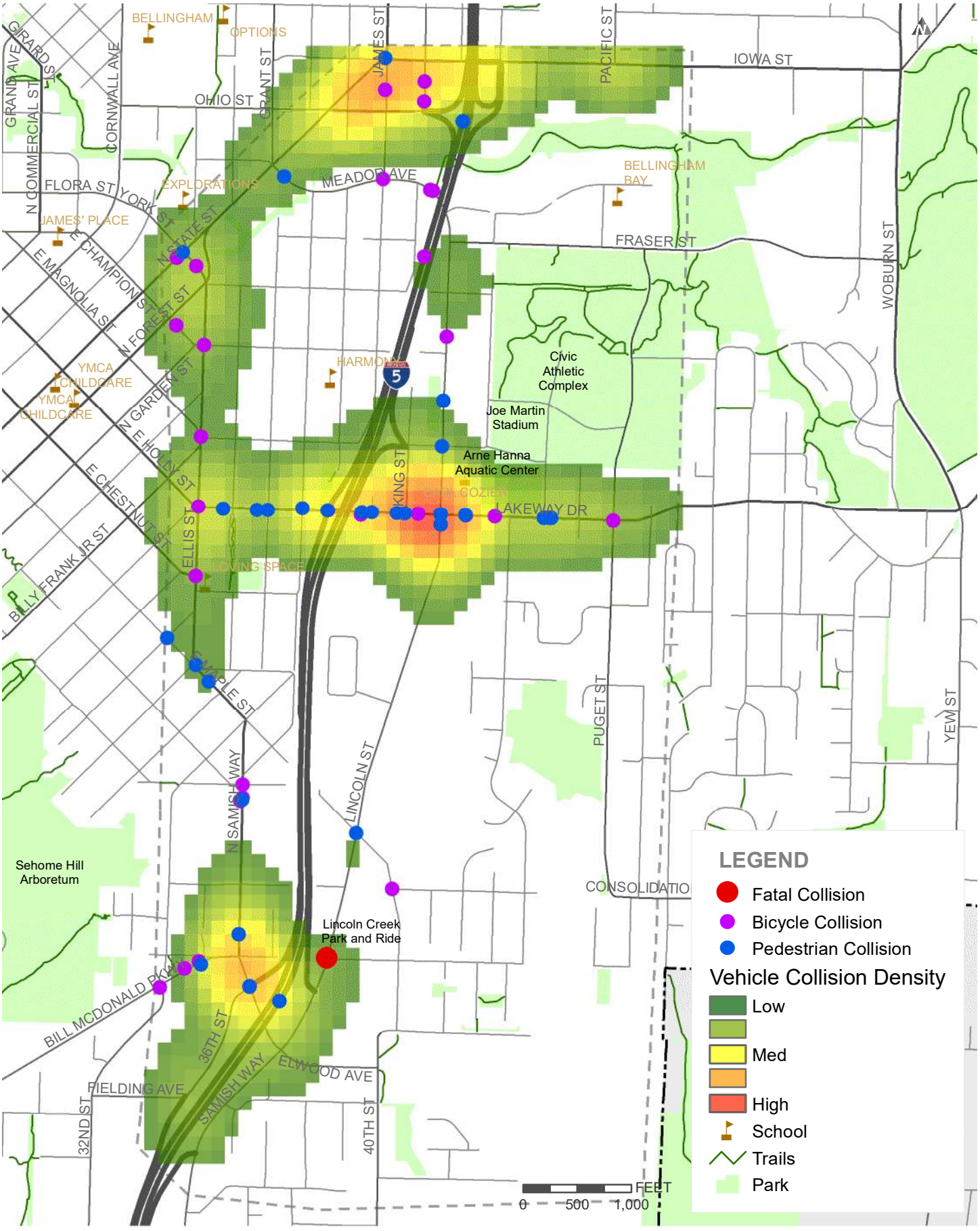
In the last five-year period, 39 pedestrian/bicycle collisions occurred at the study intersections. Of these, the Lincoln Street/Lakeway Drive and N State Street/York Street experienced the most pedestrian/bicycle collisions, with 7 and 5 respectively. There was one bicyclist fatality within the study area in the last five-year period, at the Lincoln Street/Byron Avenue intersection in 2017. This collision occurred in the early morning hours (3:00am) and post-collision interview of the police officer responding to the fatality indicates that the downhill (northbound) bicyclist struck the side of a van that was turning left from Byron Avenue southbound onto Lincoln Street. It appears that the bicycle was equipped with lights, but no evidence of a bicycle helmet was found at the scene of the fatality. There is not an engineering or infrastructure solution that would have prevented this tragic outcome, but green dashed boxes installed in the northbound dedicated bicycle lane across the Lincoln/Byron intersection would better alert drivers to the presence of bicyclists.

A map of collision density is shown on Figure 19. As shown, The Lakeway Drive corridor experiences the highest collision density, centered around the Lincoln Street/Lakeway Drive intersection. Collision density hotspots are also identified at the James Street/Iowa Street intersection and at the Samish Way I-5 interchange.

Table 7. Five-Year Collision Summary – 2015 to 2019

Location	Number of Collisions					Total	Annual Average	Collisions per MEV[1]
	2015	2016	2017	2018	2019			
1. Elllis St/ E Holly St/ Jersey St/ Lakeway Dr	9	4	3	3	10	29	5.80	0.51
2. N Samish Way/ Abbott St	1	3	1	2	0	7	1.40	0.26
3. N Samish Way/ Consolidation Ave	4	1	4	2	0	11	2.20	0.38
4. N Samish Way/ Bill McDonald Pkwy/ Byron Ave	8	8	5	6	5	32	6.40	0.72
5. S Samish Way/ 36th St/ I-5 SB Off-Ramp	7	4	3	9	3	26	5.20	0.46
6. Elwood Ave/ S Samish Way/ Lincoln St	2	3	3	2	1	11	2.20	0.23
7. S Samish Way/ I-5 NB Off-Ramp	1	2	2	3	2	10	2.00	0.60
8. Lincoln St/ Lakeway Dr	5	11	17	13	5	51	10.20	0.85
9. Lincoln St/ E Maple St	1	1	3	2	0	7	1.40	0.25
10. Lincoln St/ Byron Ave	4	0	2	0	2	8	1.60	0.36
11. Lincoln St/ I-5 NB On-Ramp	3	5	1	0	3	12	2.40	0.34
12. Ashley Ave/ Byron Ave	0	0	0	1	0	1	0.20	0.34
13. I-5 SB Ramps/ Lakeway Dr	1	3	2	0	3	9	1.80	0.15
14. King St/ Lakeway Dr	10	5	7	4	5	31	6.20	0.56
15. Nevada St/ Lakeway Dr	0	3	1	2	1	7	1.40	0.16
16. Orleans St/ Lakeway Dr	6	4	2	3	5	20	4.00	0.43
17. Puget St/ Lakeway Dr	3	2	4	4	0	13	2.60	0.27
18. King St/ Ohio St/ I-5 SB Ramps[2]	1	2	1	1	0	5	1.00	-
19. I-5 NB Ramps/ Moore St/ Iowa St[2]	4	5	1	4	7	21	4.20	-
20. Grant St/ N State St/ Meador Ave/ Kansas St[2]	2	2	4	4	1	13	2.60	-
21. James St/ Meador Ave[2]	0	0	1	2	0	3	0.60	-
22. Lincoln St/ Fraser St[2]	0	1	1	2	1	5	1.00	-
23. Puget St/ Fraser St[2]	1	0	0	1	0	2	0.40	-
24. King St/ Potter St/ I-5 NB Ramps	2	0	1	1	0	4	0.80	0.17
25. Lincoln St/ Potter St	1	1	1	7	0	10	2.00	0.66
26. N State St/ York St[2]	6	2	5	2	2	17	3.40	-
27. Ellis St/ N Forest St/ York St[2]	2	2	4	0	0	8	1.60	-
28. Ellis St/ Potter St[2]	1	0	1	1	1	4	0.80	-
29. Ellis St/ Chestnut St	4	1	2	2	1	10	2.00	0.27
30. 36th St/ I-5 SB On-Ramp/ Fielding Ave[2]	2	2	2	2	2	10	2.00	-

Source: WSDOT, 2020
1. Million entering vehicles.
2. Count data not available to calculate collisions per MEV rate.



Collision Locations (2015 - 2019)

Lincoln-Lakeway Multimodal Study

FIGURE **19**

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Chapter 3. Needs Analysis and Screening

This section addresses the anticipated future conditions within the study area and includes an assessment of needs and analysis of potential planned improvements to address those needs. Based on planned land use growth, the first part discusses travel forecasts in the form of daily person trips, vehicle traffic at corridor screen lines, mode share goals, and key connections based on bike and walk demand. The second part addresses the needs assessment of each travel mode to determine the location and scale of the future transportation needs to support the existing and future land uses. The third part discusses planned improvement strategies and screening process to address the forecasted needs for vehicle traffic, walk trips, bike trips, and transit patrons. The fourth part discusses the additional analysis on screened projects.

Travel Forecasts

The development of multimodal travel characteristics within the study area was based upon data contained in the Whatcom Council of Governments Travel Demand Model (WCOG Model). The data includes forecasts of land use, corridor trip growth, and overall mode share.

Land Use

Land use in the WCOG Model is a key input to develop travel demand forecasts. Table 8 highlights the number of households and number of employees within the study area for both 2018 and 2040 models. The table also shows total land use within the full model area (Whatcom County). The land use in the 2040 WCOG Model is consistent with the City of Bellingham's adopted Land Use Plan.

As shown in Table 8, households are anticipated to grow by approximately 1,150 units, which represents an annual growth of 0.8 percent from existing conditions. Employment would increase by about 1,040 jobs, representing a 1.0 percent growth rate. The growth rates in the study area are generally consistent with regional growth rates. The residential growth is anticipated to be mostly higher density such as apartments and townhomes. The large portion of employment growth would be in retail and services.

Table 8. Land Use Growth

	2018	2040	Change	Annual Growth
Study Area				
Households	5,713	6,865	1,152	0.8%
Employment	4,327	5,363	1,036	1.0%
Full Model Area				
Households	95,244	117,792	22,548	1.0%
Employment	103,257	127,482	24,225	1.0%

Source: WCOG Model Land Use, 2020

Person Trip Distribution Summary

The person trip distribution analysis provides an overview of future travel patterns and how origins and destinations may change from existing conditions. Person trips represent the demand of travel from one place to another regardless of travel mode. A key output from the WCOG model is a daily person trip table, which has been summarized by geographical districts. For example, we know how many daily person trips are linked between the study area and downtown Bellingham. Because of forecasted land use changes, we also know how the origin and destination relationships change in the future. Table 9 lists the distribution of

daily person trips for 2018 and 2040 conditions. The total represents all daily person trips where one trip end begins or ends with in the study area, representing about 83,700 person trips in 2018 and about 115,600 person trips in 2040. As noted in the table, trips to/from Downtown Bellingham are expected to be a higher portion of overall trips in 2040 conditions. Trips that start and end within the study area are also expected to be a higher portion of overall person trips. This indicates that future trips are expected to be shorter than existing and have higher linkages within the study are or to downtown.

Table 9. Distribution of Person Trips

	2018	2040	Change
Study Area Person Trips			
to/from Downtown Bellingham	11%	15%	+4%
to/from Southwest Bellingham/University Area	9%	8%	-1%
to/from Southeast Bellingham	10%	10%	0%
to/from East Bellingham/Sudden Valley	5%	4%	-1%
to/from Central Bellingham	12%	12%	0%
to/from Other Areas in Model	49%	45%	-4%
that stay within study area	4%	6%	+2%
TOTAL	**100%**	**100%**	

Source: WCOG Mode Trip Tables, 2020

Corridor Screen Lines

Another method to understand travel forecasts is to consider corridor screen lines. A screen line represents the general flow of traffic from one area to another as it crosses a boundary. Table 10 shows three screen lines: traffic flowing east-west across I-5; traffic flowing north-south, just south of Lakeway Avenue; and, traffic flowing north-south, just north of Byron Avenue.

Forecasts of future traffic volumes were based on traffic growth shown in the WCOG Model. The forecasting process was to subtract the existing model volumes from the future model volumes to calculate trip growth, and then add the growth to the existing traffic counts. As with any forecasting methodology, the traffic forecasts are checked for reasonableness and adjusted, if necessary. The WCOG Models for 2018 and 2040 were used in this forecasting process.

Table 10. Screen Line Results (PM Peak Period)

	SB/EB[1]			NB/WB[2]			Both Directions		
	2020[3]	2040[4]	Annual Growth Rate[5]	2020	2040	Annual Growth Rate	2020	2040	Annual Growth Rate
East-West Flows									
West of I-5 Corridor	2,700	3,150	0.8%	2,225	2,815	1.2%	4,925	5,965	1.0%
North-South Flows									
South of Lakeway Drive	945	1,210	1.2%	2,050	2,530	1.1%	2,995	3,740	1.1%
North of Byron Avenue	1,395	1,770	1.2%	1,485	1,860	1.1%	2,880	3,630	1.2%

Source: Transpo Group, 2020

1. SB is Southbound; EB is Eastbound
2. NB is Northbound; WB is Westbound
3. Represents the sum of post-processed 2020 volumes crossing the screen line in that direction
4. Represents the sum of post processed 2040 volumes crossing the screen line in that direction
5. Annual growth rate

As shown in Table 10, vehicle flows across the I-5 corridor are expected to grow annually by 0.8 percent for eastbound traffic, 1.2 percent for westbound traffic, or 1.0 percent combined. North-south flows both in the northern and southern parts of the study area are expected to grow annually by about 1.2 percent. The screen lines represent traffic volumes on principal and secondary arterials only.

Mode Share Goals

The City has a goal for 2036 conditions to have a higher percent of person trips travel by walking and bicycling. The 2020 Transportation Report on Annual Mobility (Bellingham, 2020) shows that existing mode share of walk trips was 8 percent, and bike trips was 3.3 percent. The City goal for 2036 is to have both walk trips and bike trips to be at 12 percent. In other words, total combined walk/bicycle mode share is currently 11.3 percent and the goal is to reach 24 percent in the future.

Key Walking and Biking Connections

One way to improve mode share for walk and bicycle trips is to improve the safety and convenience of walk and bicycle infrastructure on key connections in the study area. To identify key connections, the WCOG model person trip data set was again used. High level assumptions can be made on allocating person trips to walk or bicycle trips based on travel distance between districts (assuming safe and convenient infrastructure already in place). Figure 20 shows the results of this analysis, where the distribution of walk and bike trips are shown for existing and future conditions. Note that these future percentages do not assume improved investments in connections. This helps identify key connections by showing the general direction of high demand trips.

As shown in Figure 20, the connections to/from Downtown Bellingham is the highest percent of demand. In the future, the demand is expected to be even more oriented to downtown for bike trips. This indicates that corridors connecting to downtown would be high priority locations for multimodal infrastructure. The primary locations to get to/from downtown require the crossing of I-5 at Lakeway Drive or Meador Avenue. The next highest distribution of walk/bicycle trips would be to the southwest and north. The southwest direction indicates the importance of Lincoln Street and the Samish Way interchange. The north direction indicates the importance of connections across Whatcom Creek.

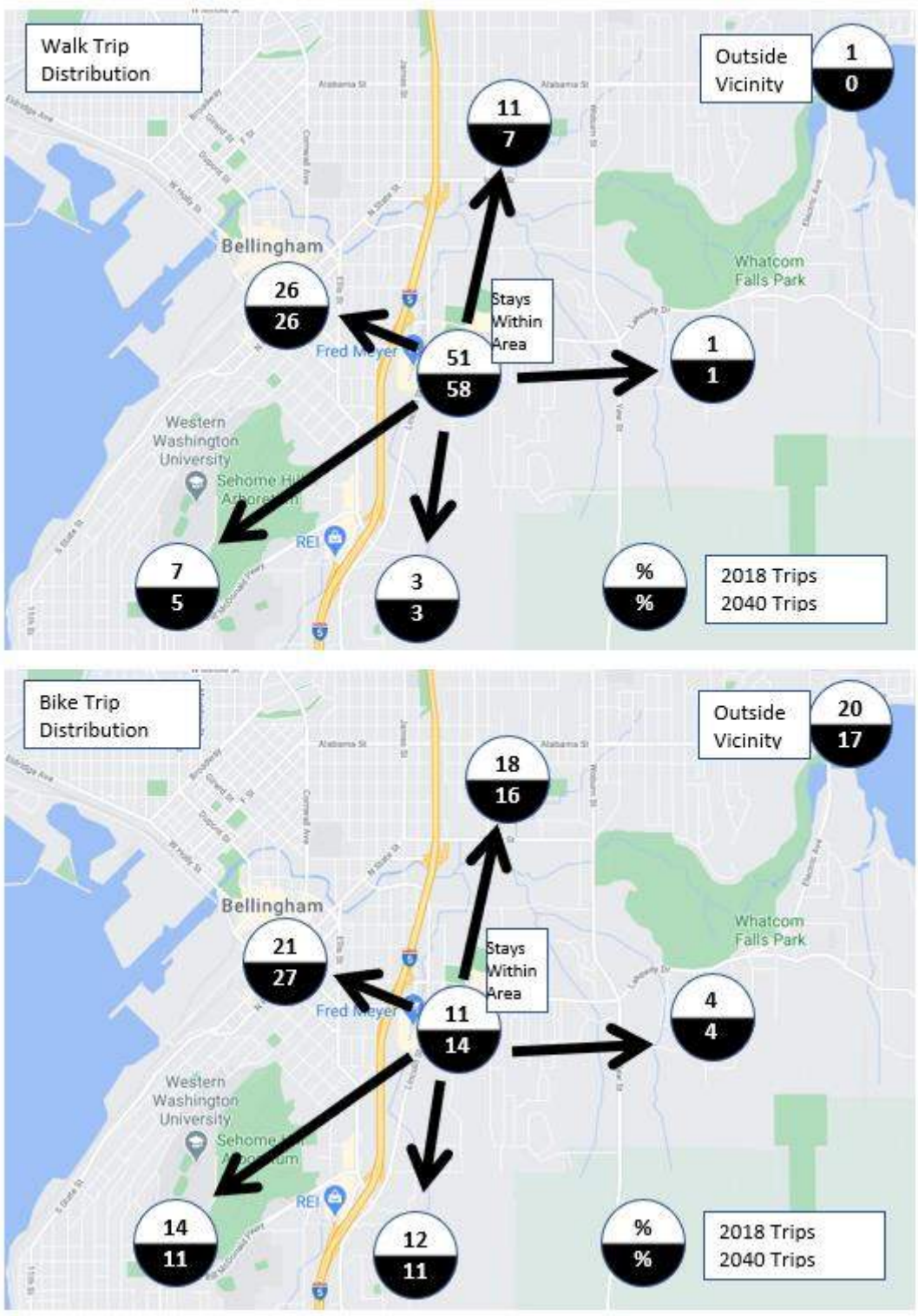


Figure 20. Distribution of Walk and Bicycle Trips

Needs Assessment

Using the traffic volume forecasts and non-motorized desired connections, the transportation system needs of the study area can be assessed. A summary of how the needs are assessed is first presented, followed by a detailed discussion of the process. The outcome of the needs assessment is a series of maps highlighting system needs. Figure 21 shows the general process for the needs assessment.

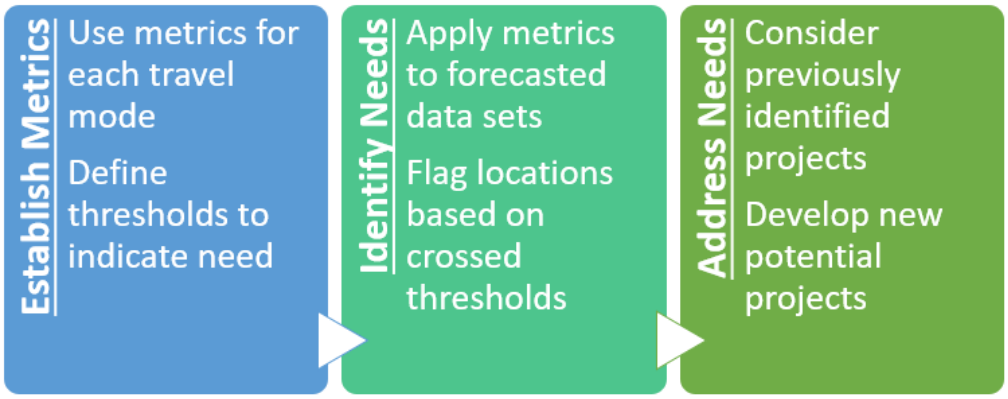


Figure 21. General Needs Assessment Process

Needs Assessment Metrics

The needs of the transportation system were assessed with a variety of metrics as outlined in Table 11. Vehicle operations was assessed through level of service (LOS) analysis and queuing impacts. The non-motorized system was assessed through gap analyses and understanding forecasted major movements. Transit system elements were assessed from the perspective of stops and how they interact with the other transportation systems.

Table 11. Needs Assessment Metrics

Mode	Assessment Metric	Metric Details
Vehicle System	• Level of service thresholds (HCM[1]) • Locations of vehicle queuing[2] • Public Input[3]	• LOS E or F • Spillback into upstream intersections of major driveways • Reoccurring locations/issue identified by public
Walking System	• ADA-related identified gaps • Pedestrian Master Plan[4] identified gaps • Distribution of Demand • Public Input	• ADA-related gaps in sidewalks • Improvements identified in PMP • Connections to the highest areas of demand by distribution percentage • Reoccurring locations/issue identified by public
Biking System	• Bicycle Master Plan[5] identified gaps • Distribution of Demand • Public Input	• Improvements identified in BMP • Connections to the highest areas of demand by distribution percentage • Reoccurring locations/issue identified by public
Transit System	• ADA-related identified gaps • Access to transit stops • Speed and Reliability • Public Input	• ADA-related issues at bus stops • Gaps in sidewalks/trails near bus stops • Major corridor travel time • Reoccurring locations/issue identified by public

Source: Transpo Group, 2021
1. Highway Capacity Manual, 6th Edition.
2. Vehicle queues reported from 95th percentile queue lengths using Synchro 10th edition and HCM 6th Edition methodology.
3. Public input from Lincoln Lakeway Project Outreach, ADA Transition Plan Outreach, and Engage Bellingham
4. Pedestrian Master Plan available at: https://cob.org/services/planning/transportation-planning/pedestrian-master-planning
5. Bicycle Master Plan available at: https://cob.org/services/planning/transportation-planning/bike-master-planning

Identify Needs by Travel Mode

This section provides more details on how the needs assessment was completed.

Vehicle Traffic Operations

A level of service analysis was conducted for future 2040 conditions and is compared to existing 2020 conditions to identify potential intersection improvements. The future 2040 analysis documents the operational impacts of adding future traffic volume growth to the intersections without modifying lane channelization or signal timing from existing conditions. The results of the future LOS analysis are summarized in Table 12. Detailed LOS worksheets are included in Appendix C.

Table 12. Future 2040 PM Peak Hour LOS Summary

Intersection	Traffic Control	Existing 2020			Future 2040		
		LOS[1]	Delay[2]	WM[3]	LOS[1]	Delay[2]	WM[3]
1. Ellis St/ E Holly St/ Jersey St/ Lakeway Dr[4]	Signal	B	14	-	D	40	-
2. N Samish Way/ Abbott St	TWSC	C	22	WB	F	59	EB
3. N Samish Way/ Consolidation Ave	TWSC	C	24	WB	D	30	WB
4. N Samish Way/ Bill McDonald Pkwy/ Byron Ave	Signal	C	24	-	D	46	-
5. S Samish Way/ 36th St/ I-5 SB Off-Ramp[4]	Signal	C	28	-	D	37	-
6. Elwood Ave/ S Samish Way/ Lincoln St	Signal	C	33	-	E	60	-
7. S Samish Way/ I-5 NB Off-Ramp	TWSC	D	31	EB	F	89	EB
8. Lincoln St/ Lakeway Dr	Signal	D	44	-	F	87	-
9. Lincoln St/ E Maple St	TWSC	F	77	WB	F	510	WB
10. Lincoln St/ Byron Ave	TWSC	F	50	WB	F	140	WB
11. Lincoln St/ I-5 NB On-Ramp	TWSC	B	12	NBL	B	14	NBL
12. Ashley Ave/ Byron Ave	TWSC	B	10	EB	B	10	EB/WB
13. I-5 SB Ramps/ Lakeway Dr	Signal	D	36	-	E	57	-
14. King St/ Lakeway Dr[4]	Signal	C	34	-	D	40	-
15. Nevada St/ Lakeway Dr	TWSC	E	37	NBL	E	44	NBL
16. Orleans St/ Lakeway Dr	TWSC	E	44	NB	F	77	SBL
17. Puget St/ Lakeway Dr	Signal	B	16	-	C	28	-
18. King St/ Ohio St/ I-5 SB Ramps[5]	TWSC	-	-	-	-	-	-
19. I-5 NB Ramps/ Moore St/ Iowa St	Signal	C	20	-	C	20	-
20. Grant St/ N State St/ Meador Ave/ Kansas St[5]	Signal	B	16	-	C	25	-
21. James St/ Meador Ave	AWSC	C	16	-	E	40	-
22. Lincoln St/ Fraser St	TWSC	F	62	WBL	F	516	WBL
23. Puget St/ Fraser St	TWSC	B	12	NB	B	14	NB
24. King St/ Potter St/ I-5 NB Ramps	NA	-	-	-	-	-	-
25. Lincoln St/ Potter St	TWSC	D	27	EB	F	370	EB
26. N State St/ York St	Signal	B	13	-	B	17	-
27. Ellis St/ N Forest St/ York St	Signal	D	35	-	F	89	-
28. Ellis St/ Potter St/ Magnolia St[5]	Signal	-	-	-	-	-	-
29. Ellis St/ Chestnut St	Signal	B	14	-	B	19	-
30. 36th St/ I-5 SB On-Ramp/ Fielding Ave	TWSC	C	21	-	F	70	SB
31. Lincoln St/ Consolidation Ave[5]	TWSC	-	-	-	-	-	-

Source: Transpo Group, 2021
1. Level of Service (A – F) as defined by the *Highway Capacity Manual* 6th Edition (TRB, 2016)
2. Average delay per vehicle in seconds
3. Worst movement or approach reported for side-street stop-controlled intersections
4. Evaluated using HCM 2000 due to limitations in the HCM 6th Edition and intersection configurations.
5. No traffic count available at this time.

As shown in Table 12, the addition of future traffic volume growth throughout the study area increases vehicle delay at study area intersections. The following intersections are forecast to operate at vehicular LOS F under future 2040 no action conditions:

- Samish Way/ Abbott Street
- S Samish Way/ I-5 NB Off-Ramp
- Lincoln Street/ Lakeway Drive
- Lincoln Street/ E Maple Street
- Lincoln Street/ Byron Avenue
- Orleans Street/ Lakeway Drive
- Lincoln Street/ Fraser Street
- King Street/ Potter Street/ I-5 NB Ramps
- Lincoln Street/ Potter Street
- Ellis Street/ N Forest Street/ York Street
- 36th Street/ I-5 SB On-Ramp/ Fielding Avenue

Non-Motorized Desire Lines

As discussed previously, non-motorized connections to/from Downtown Bellingham is the highest percent of existing demand and in the future the demand is expected to be even more oriented to downtown. The next highest distribution of walk/bicycle trips would be to the southwest and north. The downtown and southwest desire lines highlight the importance of improving east-west mobility across the I-5 corridor. The north direction desire line indicates the importance of connections across Whatcom Creek.

Pedestrian and Transit Access System Gaps

The walking and transit network in the Lincoln-Lakeway study area includes several gaps from bus stops in need of ADA upgrades, missing crosswalks, and missing sidewalks. High walking demand in the area is due to close proximity to Downtown Bellingham as well as Western Washington University. As shown on Figure 22, approximately 19 bus stops within the study area are in need of ADA improvements. These include two stops near the Samish Way I-5 interchange, five stops west of I-5 and north of Lakeway Drive, and 12 stops east of I-5 and north of Lakeway Drive surrounding the Civic Athletic Complex. Missing crosswalks and sidewalks on Lincoln Street also contribute to gaps in the pedestrian system. The west side of Lincoln Street between Elwood Avenue and just north of Consolidation Avenue is missing a designated pedestrian facility, and a mid-block pedestrian crossing is missing along Lincoln Street at the Viking Circle cross street.

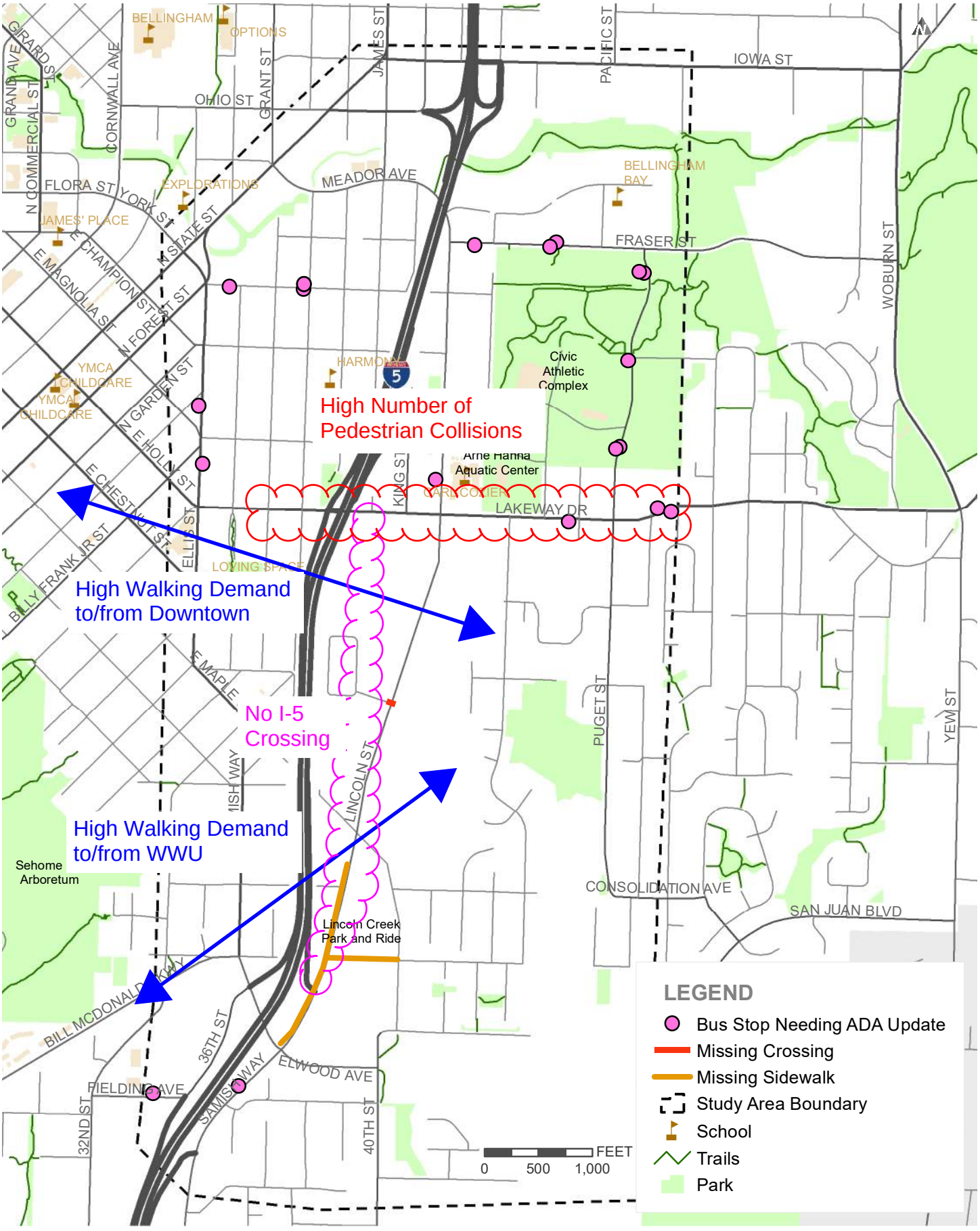
In addition, system-wide gaps include the lack of a pedestrian crossing of I-5 between the Samish and Lakeway interchanges. Lakeway Drive within the study area has been identified as a corridor with historically high pedestrian-involved collisions. This area poses a safety concern and creates a gap in the pedestrian system.

Bicycle System Gaps

Bicycle facility system gaps are present along six corridors within the study area. As shown on Figure 23, these corridors include areas where the need for a bicycle facility has been identified in the Bellingham Bicycle Master Plan (BMP). The corridors identified in the BMP include:

- Fielding Avenue between 32nd Street and 36th Street
- 36th Street between Fielding Avenue and Samish Way
- Lincoln Street south of Lakeway Drive to south Fred Meyer driveway
- Lakeway Drive between Ellis Street and Puget Street
- N State Street between York Street and James Street
- Ohio Street between Grant Street and N State Street

In addition, the Meador Avenue/Lincoln Street corridor between James Street and Potter Street lacks a northbound bicycle facility.



Walking and Transit Access Needs

Lincoln-Lakeway Multimodal Study

FIGURE **22**

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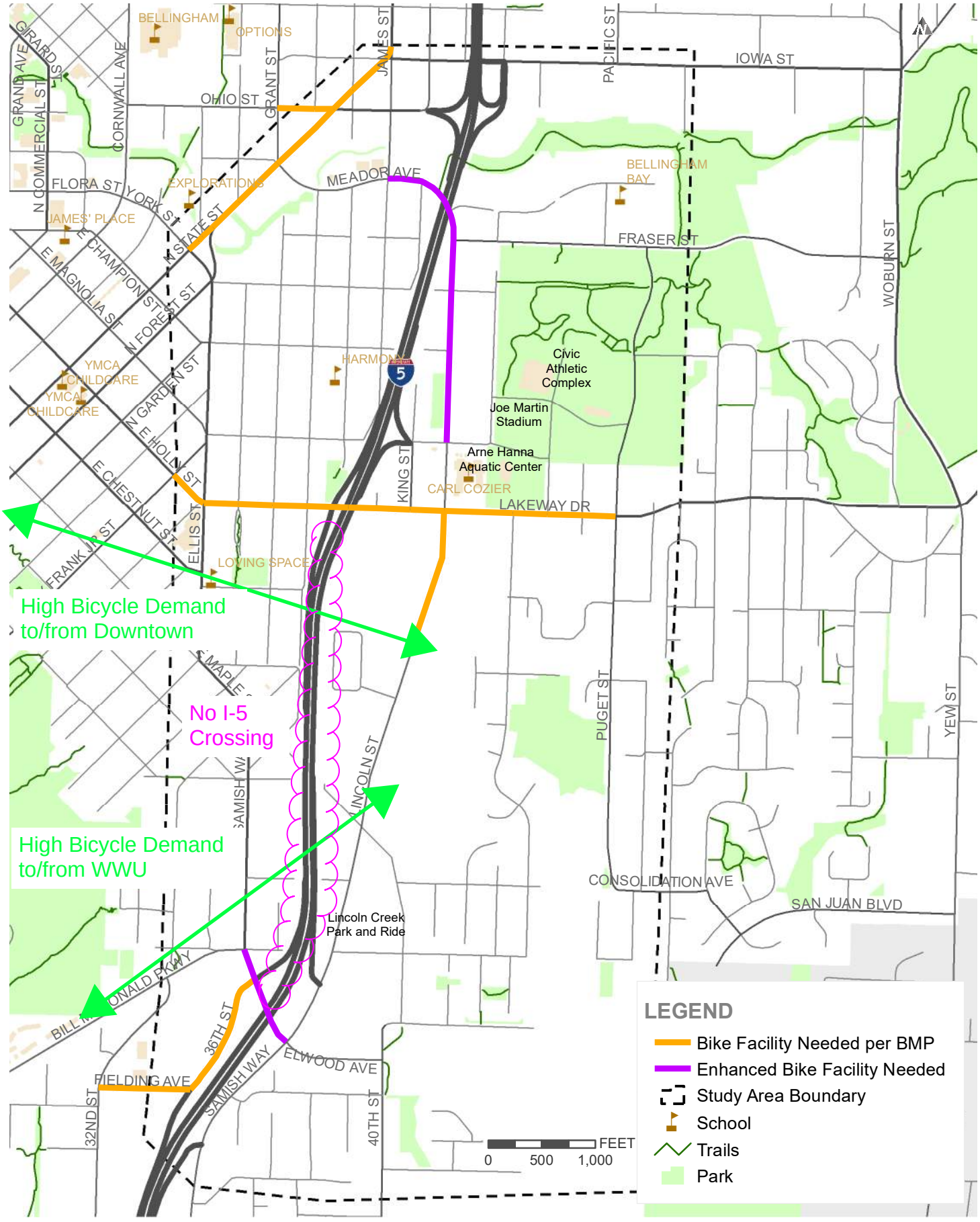


Bicycle Needs

Lincoln-Lakeway Multimodal Study

FIGURE **23**

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 23 - Biking Needs Map.mxd

ADA Plan Identified Gaps

The City of Bellingham developed an ADA Transition Plan – to ensure that all pedestrian infrastructure is accessible to those with mobility impairments. This transition plan involved creating a prioritization of where ADA improvements should be focused using a Location Index Score. The LIS is based on urban zones, proximity to transit, parks, schools, community destinations and public buildings. Figure 24 shows the results of prioritization, with darker purple colors indicating locations where focus should be placed. The blue wheelchair icons denote specific locations of concern cited during the public engagement process. The initial results show that Lakeway Drive is a location where emphasis should be placed on prioritizing ADA improvements. The type of upgrades needed range from small improvements like minor sidewalk repairs, to complete reconstruction of sidewalks and curb ramps. Solutions developed throughout the Lincoln Lakeway Study also considered the need to bring pedestrian facilities up to ADA standards, especially in priority locations.

Vehicle and Transit Reliability Needs

Vehicle and transit reliability needs throughout the study area are highlighted in Figure 25. As shown, several signalized and unsignalized intersections throughout the study area experience vehicular LOS E or F at PM peak hour conditions with future 2040 forecast volumes. In addition, locations of vehicle traffic congestion with long 95th percentile queues near the Lincoln Street/Lakeway Drive intersection and the I-5 interchanges have been identified. Vehicle congestion and lengthy queues at study area intersections also negatively affects transit reliability throughout the study area. These locations indicate areas where transit priority treatments may be considered to improve vehicle and transit operations.

Public Input: Community Survey

The Community Survey, as discussed in the introduction, provided the following feedback on the relative importance of improvements for each travel mode within the study area.

Pedestrians

For pedestrian conditions, the factors considered throughout the survey are curb ramps and access for physically challenged, marked crosswalks, pedestrian crossing signals, sidewalks (including width, condition, and connectivity), and educational materials for pedestrians and motorists. Overall, existing curb ramps and ADA facilities were rated the highest for pedestrian facilities and overall in “good” condition. Sidewalks were rated the least satisfactory overall. In terms of the importance of making improvements for pedestrian facilities, the highest rated were sidewalk improvements, pedestrian crossing signals, and marked crosswalks. For the importance of different pedestrian factors, well-connected sidewalks were rated the highest, followed by marked crosswalks at intersections, and sidewalk condition and maintenance. Providing and maintaining sidewalk space for people walking was rated the highest out of all categories as the highest importance to improve within the study area.

Bicyclists

For bicyclists, the factors considered were overall bicycle facilities, dedicated on-street space for bicyclists, street pavement condition, separation from traffic, bike lane markings through intersections, bicycle wayfinding/signage, secure bicycle rack parking, and educational materials for bicyclists and motorists. Overall, existing bicycle facilities were rated fairly poor, with just 38% of respondents rating the facilities “good” or “very good”. As a result, bicycle facilities were rated one of the highest factors to make improvements on and as a top three priority. The biggest improvements to be made within bicycle facilities were street pavement condition, separation from traffic, educational materials for both bicyclists and motorists, and providing dedicated on-street space for bicyclists. The least important factor was bicycle wayfinding and signage, bike lane markings through intersections, and secure bicycle rack

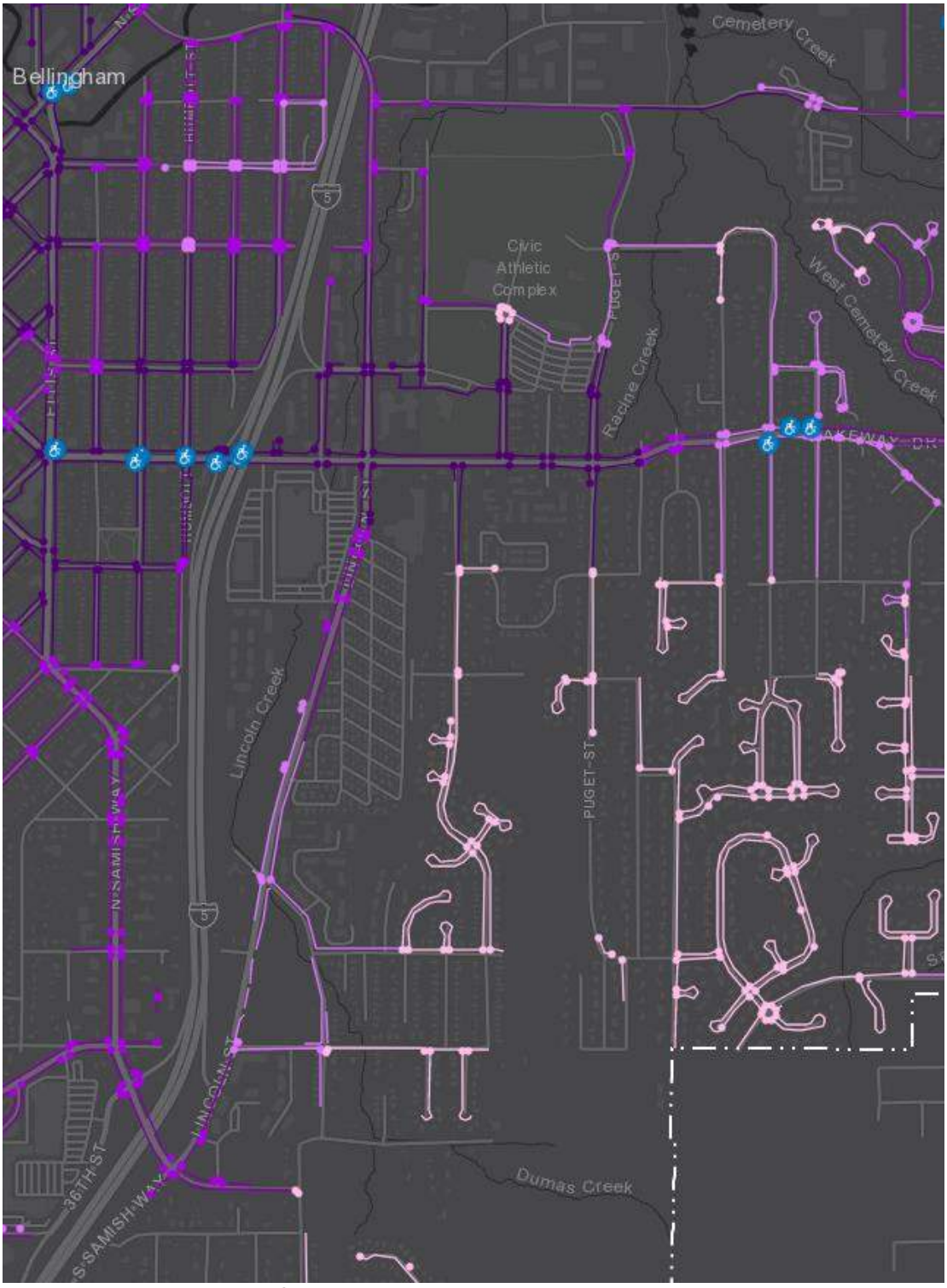
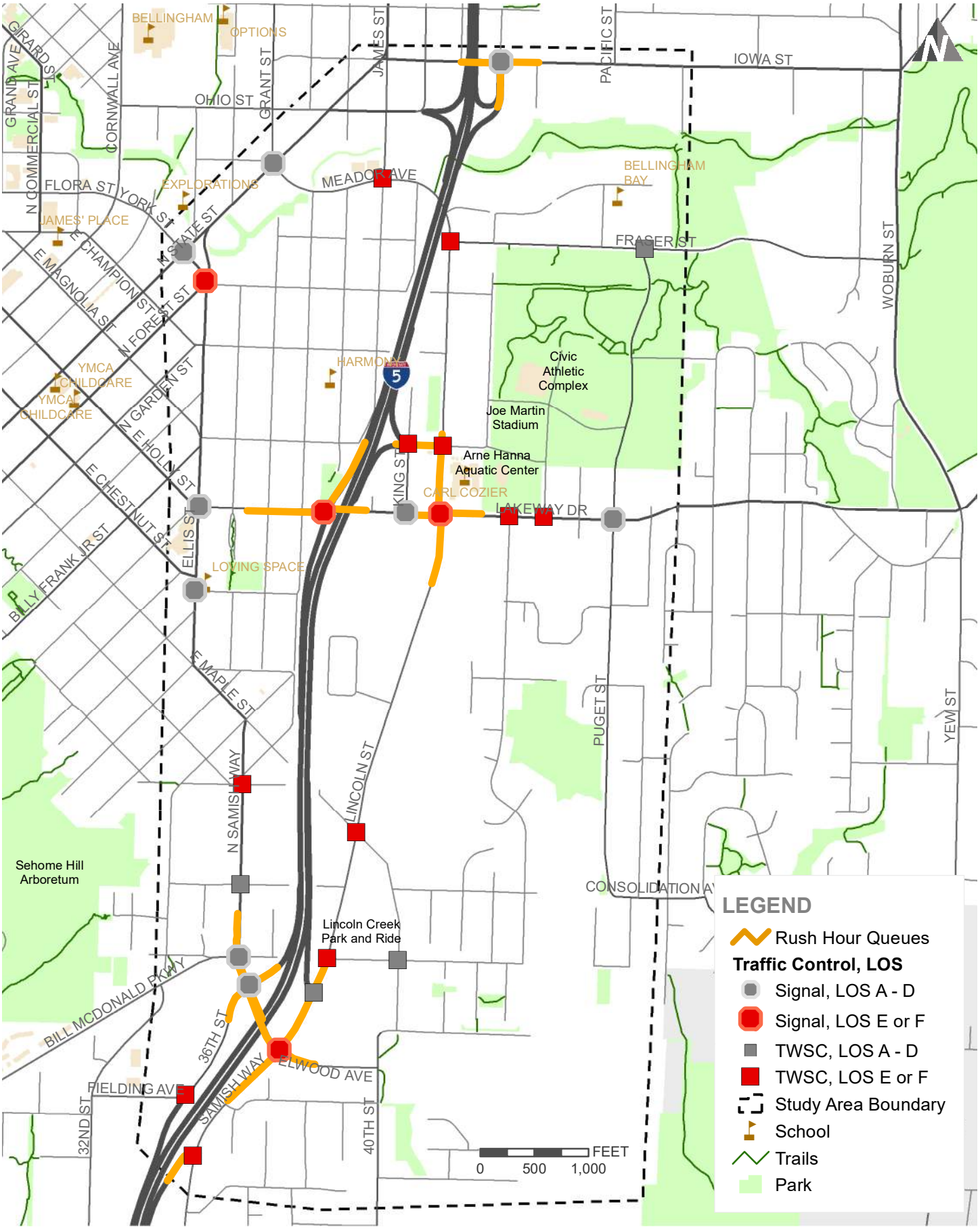


Figure 24. ADA Plan Identified Priorities



Vehicle (2040 Forecast LOS) and Transit Reliability Needs

FIGURE 25

Lincoln-Lakeway Multimodal Study

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 24 - Vehicle and Transit Reliability Needs.mxd

parking. When it came to choosing the most important overall improvements, 45 percent of respondents said that providing dedicated new space for bicyclists was very important.

Transit Service

For transit service conditions, the factors considered in this survey were overall transit service, bus stops, safety, shelters and lighting, bus routes, evening service, bicycle racks on buses and stops, and connections to other transportation services. Overall, transit service was rated very satisfactory in this survey. Very few respondents said that the transit service or bus stops were poor. Respondents noted that it was only somewhat important to make improvements to bus stops and transit service overall. Bus stops and transit service was also rated low for top three transportation improvement priorities, inferring that improvements for transit did not rank very high across all modes of transportation. When considering improvements within public transit, the most important factors for respondents were safety, reliability of bus service, safe and accessible connections for disabled and elderly, and shelters, lighting, and benches at bus stops. Overall, it was not very important to respondents to have bicycle racks at bus stops and travel time was not considered to be very important.

Motorists

For the overall category of motorists, the factors considered were street lighting, street pavement condition, driveway access to businesses, traffic congestion, and vehicle lane widths. Traffic congestion was rated the poorest transportation factor in this survey, followed by poor street pavement condition. Overall, traffic congestion was rated the highest priority to make an improvement on. Street pavement condition and street lighting was also rated highly to make improvements. Driveway access for businesses was not rated as an important improvement. Overall, maintaining existing vehicle lane widths was rated as highly important by 47 percent of survey respondents. It is also important to note that for both pedestrians and for bicyclists, educational materials for motorists was rated as highly important.

In summary, survey respondents felt the two most important categories were to maintain sidewalk space (65 percent) and maintain existing vehicle widths (47 percent). The two least important categories were to provide new space for bicyclists (32 percent) and widening sidewalk space for wheelchairs (26 percent).

Public Input: Engage Bellingham

In the summer of 2020, the City of Bellingham purchased a license for online public engagement software that was branded as Engage Bellingham. City staff created an online project page for the multi-agency Lincoln-Lakeway Multimodal Transportation Study on the Engage Bellingham platform.

On January 21, 2021, the City issued a press release inviting the public to participate in the study using this online platform. An interactive map allowed participants to place pins with themes for ADA, sidewalks, crosswalks, bikeways, transit needs, vehicle lanes, and driveway access, along with specific comments and requests for transportation improvement needs. These comments were compiled and shown graphically in Figure 26.

As shown in the figure, the complete set of pins were most clustered in three distinct areas: Lakeway Drive under I-5; the Lakeway Drive/Lincoln Street intersection; and the Meador Avenue area around the I-5 undercrossing. These three areas were also tied to comments related to “Bikeway Needed”. The Meador Avenue area around the I-5 undercrossing was also flagged for “Crosswalk Needed”, mostly near the Fraser Street intersection. The King Street/Potter Street area had more vehicle-focused comments as well as comments about transit stops and crosswalk needs.

Many of the public comments were validating the already identified potential improvement project locations from past studies and plans and from the needs assessment.

Figure 26. Hotspots of Public Comments

Potential Improvements

A list of potential improvements was developed to address the system gaps and needs assessed in the previous sections. The improvements were developed from several sources including past studies, public input, and the needs assessment. A full list of the 49 potential projects is included in Appendix D.

Past Studies and Plans

To develop the list of potential projects, past studies and plans were reviewed. Nearly all projects in these plans and studies that were also within in the study area were added to the list of potential projects. The following past studies and plans were used in preparing the list of potential improvements.

- Bellingham's Pedestrian Master Plan (2012)
- Bellingham's Bicycle Master Plan (2014)
- Bellingham Comprehensive Plan Multimodal Transportation Chapter (2016)
- Lakeway Drive Bikeway Study (2016-2017)
- Samish-Maple-Ellis Corridor Study (2016-2017)
- Bellingham's Local Road Safety Plan (2020)
- Bellingham's 2022-2027 Transportation Improvement Program (TIP)
- WSDOT I-5 Operations & Transportation Demand Management Analysis (2020)
- WTA 2040 Long Range Transit Plan (2021)
- Numerous Transportation Impact Analysis (TIA) studies for private development

Projects from Needs Assessment

The list of potential improvements were mapped and cross-checked with the needs assessment. Several new projects were added to the improvement project list such as intersection improvements (LOS needs), non-motorized crossings of I-5 (desire lines), and sections of the sidewalk and bicycle system (gap analysis).

Screening of Improvements

The full list of potential projects included 49 projects that were screened to identify a selected group of projects to analyze further. The screening process used a scoring process to help determine the projects to analyze, to forward, or to not advance to the final list. The full list of potential projects is provided in Appendix D.

Screening Process

Table 13 outlines the scoring that was used in the screening process. The scoring was linked to the six major goals of the study. The scoring used a point system of 0, 1, or 2 points based on qualitative measures to assess likely benefits of the project relative to that goal. Note that the Community Feedback Goal included a bonus point if the City considered the project a priority, making the total amount of points possible from the screening process at 13 points. This process was meant to be a high-level assessment to screen out projects from further analysis, and focus resources on analyzing selected higher-benefit projects.

Table 13. Screening Process Scoring

#	Goal	Description	Scoring[1]		
			0 (No Benefit)	1 (Some Benefit)	2 (High Benefit)
1	Safety and Comfort	Identifying safety improvements for people using all modes of transportation (walking, biking, transit, driving, and delivering freight).	No safety improvement and does not increase user comfort	Safety improvement for location without identified issue or increases user comfort	Addresses known safety issue and improves user comfort
2	Active Transportation Connectivity	Identifying transportation improvements intended to support and enhance transportation trips made by walking and/or biking.	Project does not support or improve walking or biking connectivity	Project supports or improves connectivity for either walking and/or biking	Project improves bicycle or pedestrian connectivity in a previously identified area, or plan, with a highly desired / high-priority connection
3	Mobility Enhancement	Moving people through study corridors more efficiently and reliably.	Does not increase (or decreases) person throughput along study corridor	Increase person throughput along study corridor	Increase person throughput along study corridor with previously identified congestion
4	Transit Access and Performance	Support continued and improved integration with transit (WTA) operations by both improving access to transit and improved transit speed and reliability.	Project does not improve access to transit or improve transit operations	Project improves access to transit or improves transit operations	Project increases access to transit or improves transit speed and reliability in an area with a known issue
5	Feasibility and Cost Effectiveness	Does the project meet general cost and location-specific benchmarks of the study?	Project is not cost effective or feasible.	Project may be cost effective OR feasible	Project is likely cost effective AND feasible
6	Community Feedback	Does the project address a concern noted through the various community outreach processes?	Little to no public comments	Some public comments	Several public comments. Additional point given if project was a City Priority

Source: Transpo Group, 2021

1. Scoring for Goals 1 to 5 used a 2-point scale. The Community Feedback Goal included 1 bonus point. The total amount of points possible was 13 points.

Screening Results

Of the 49 potential projects identified, 8 projects were screened out and “not advanced”. These projects generally received screening scores of 4 or less. Appendix D identifies these 8 projects.

Of the remaining projects, about half (20 projects) were “forwarded” to the final project listed as-is because sufficient details were already known about them, and they had higher screening scores. This list also included projects set for construction, funded for construction, or projects identified on other agency plans.

Table 14 shows that 21 projects were identified for further analysis. These projects received a high screening score but needed more detailed information to finalize project recommendations. More information about these projects is provided in the following section. Figure 27 shows how the screening process helped focus efforts to the 21 projects to find detailed solutions to the needs identified. Figure 28 shows a map of these 21 projects.

Table 14. Screening Process Results

Category	Description	Number of Projects
ANALYZE	Projects that received a high score in the screening process, but more detailed information was needed to be determined before finalizing project recommendations.	21
FORWARD	Projects that received a high score in the screening process, but sufficient details or plans were known to recommend forwarding the project on to the final list. In addition, this included projects that were near construction, already funded, or projects identified by other agencies.	20
NOT ADVANCED	Projects that received a low score in the screening process, such that further analysis was not needed to remove from project list.	8
	Total	**49**

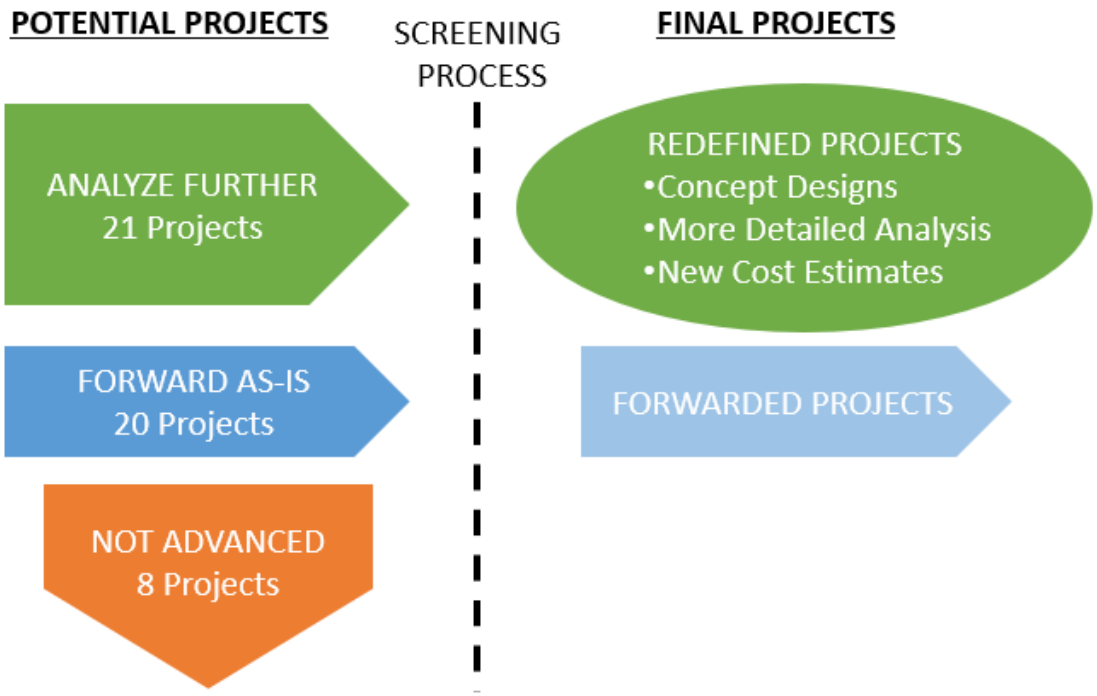


Figure 27. How Screening Helped Focus Efforts

Projects Identified for Further Analysis

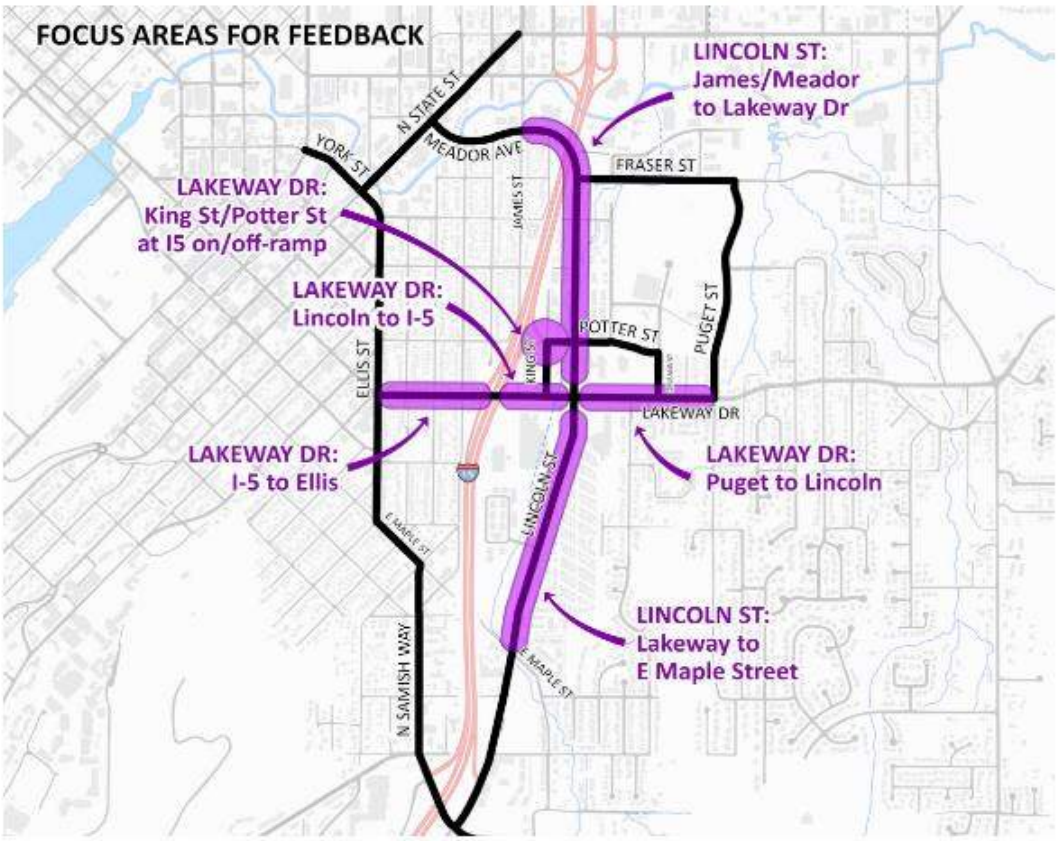
Lincoln-Lakeway Multimodal Study

FIGURE **28**

C:\Users\PaulS\Documents\PROJECTS\19390 - Lincoln Lakeway GIS\Maps\MXD\Fig 28 - Projects Identified for Further Analysis.mxd

Additional Evaluation

The additional evaluation focused on the 21 projects identified for further analysis. These projects were grouped by Focus Area as used in Engage Bellingham (and shown in Figure 29) to better evaluate and discuss the projects. A discussion of what was evaluated, the recommended improvements, and why those recommendations were chosen are provided for each project.



Source: City of Bellingham, 2021

Figure 29. Focus Areas

Focus Area #1: Lincoln Street (James Street/Meador Avenue to Lakeway Drive)

This group of projects focused on the Meador Avenue/Lincoln Street corridor between Fraser Street and James Street. The following projects were identified for further analysis and cost estimates.

- **Add signal or roundabout to Lincoln Street/ Fraser Street intersection.** This project required more detailed concept design plan drawings to understand the designs of a new signal or roundabout. The concept designs are provided in Appendix E, and generally shows new traffic controls and integration with the new trail.
- **Add multiuse path on northeast side of corridor, through the curve under I-5**. This project required more detailed concept design plan drawings to understand the design of the multiuse trail. The concept designs are provided in Appendix E, and

generally show how the new trail can fit within existing right-of-way through the I-5 undercrossing and new connections to the Whatcom Creek Trail.

- **Add signal or roundabout to James Street/ Meador Avenue intersection**. This project required more detailed concept design plan drawings to understand the designs of a new signal or roundabout. The concept designs are provided in Appendix E, and generally shows new traffic controls and integration with the new trail.

Focus Area #2: Lincoln Street (Lakeway Drive to Maple Street)

This group of projects focused on the Lincoln Street corridor between Maple Street and Lakeway Drive, including the Lincoln Street/Lakeway Drive intersection. The following projects were identified for further analysis and cost estimates.

- **Lincoln Street/Lakeway Drive Intersection: Add bike lanes and bike boxes to the intersection to support overall bike system improvements**. This project required more detailed concept design plan drawings to understand the designs of the bike facilities and impacts to the vehicle travel lanes. The concept designs are provided in Appendix E, and generally show the same vehicle channelization as current conditions, with added bike facilities. Successful implementation of these designs requires changes to the corridor, so this project was consolidated with the Lakeway Drive Multiuse Path and Access Management, Phase 1 project.
- **Lincoln Street/Lakeway Drive Intersection: Modify signal and install Leading Pedestrian Interval**. This project requires operational analysis that confirmed that this would have a minor impact on future traffic operations. Successful and meaningful implementation of this project requires the multimodal changes to the corridor, so this project was consolidated with the Lakeway Drive Multiuse Path and Access Management, Phase 1 project.
- **Lincoln Street/Lakeway Drive Intersection: Expand intersection to provide protected bike lanes**. This project required more detailed concept design plan drawings to understand the designs of the protected bike facilities and impacts to the vehicle travel lanes and surrounding right-of-way. The concept designs are provided in Appendix E, and generally show that additional right-of-way would be needed at the intersection. This type of improvement would receive the most use after other multimodal projects were constructed. This project remains a standalone project that would have mid-to-long-term construction timeline.
- **Lincoln Street Road Diet, Phase 1 (Maple Street to south of Fred Meyer Driveways)**. This project required more detailed concept design plan drawings to understand the designs of the road diet, bike facilities, and driveway access points. The concept designs are provided in Appendix E, and generally show a 3-lane cross-section with buffered bike lanes.
- **Lincoln Street Road Diet, Phase 2 (South of Fred Meyer Driveways to Lakeway Drive)**. This project required more detailed concept design plan drawings to understand the designs of the road diet, bike facilities, and driveway access points. The concept designs are provided in Appendix E, and generally show a 3-lane cross-section with buffered bike lanes, and potential access changes.

Focus Area #3: Lakeway Drive (Puget Street to Lincoln Street)

This group of projects focused on Lakeway Drive between Puget Street and Lincoln Street. The following projects were identified for further analysis and cost estimates.

- **Lakeway Drive Multiuse Path and Access Management, Phase 2.** This project includes adding a multiuse path on the north side of the corridor between Lincoln Street and Orleans Street. This also includes access management along the corridor for improved traffic operations and safer walk and bike activities. This project required more detailed concept design plan drawings to understand the design and impacts to surrounding land uses. The concept designs are provided in Appendix E, and generally show the trail and median c-curb to limit turn movements.
- **Add signal to Orleans Street intersection or Nevada Street intersection**. The needs analysis identified these two intersections as needing intersection improvements to improve level of service for vehicle movements. From a network system planning perspective, it is not recommended that both intersections be signalized. The Nevada Street intersection is a major access point to the large neighborhood to the south as well as a connection to the commercial area to the west. The Orleans Street intersection is a major access point for the civic and recreational land uses to the north that can host large events. The choice of which intersection to improve largely depends on potential redevelopment plans for the Civic Field site. Perhaps Orleans Street could be realigned to Nevada Street, or some other solution may be presented in the development plans. In addition, the HAWK crossing near Orleans Street would likely be removed and replaced by the new signal.

Focus Area #4: Lakeway Drive (Lincoln Street to I-5)

This group of projects focused on Lakeway Drive between Lincoln Street and up to the I-5 undercrossing. The following projects were identified for further analysis and cost estimates.

- **Lakeway Drive Multiuse Path and Access Management, Phase 1**. This project includes adding a multiuse path on the north side of the corridor between James Street and Lincoln Street. This also includes access management along the corridor for improved traffic operations and safer walk and bike activities. This project required more detailed concept design plan drawings to understand the design and impacts to surrounding land uses. The concept designs are provided in Appendix E, and generally show the trail, proposed closed driveways, crosswalk improvements to King Street intersection, and median c-curb to limit turn movements.
- **Lakeway Drive/King Street intersection improvements**. This project evaluated the impact of removing lower volume turning movements at the intersection, such as the westbound left, southbound through, and southbound left. This analysis focused more on operational analysis of study intersections. These removed traffic movements would cause traffic to shift to other intersections. Based on the additional traffic operations analysis at study intersections, removing the southbound movements would have a net negative benefit to the Lakeway corridor. This project was removed from the project list. Note that the restricted westbound left movement was incorporated into the Lakeway Drive Phase 1 project discussed above since it did provide some operational benefits.

Focus Area #5: Lakeway Drive (I-5 to Ellis Street)

This area had one major project to consider for further analysis on Lakeway Drive between the I-5 undercrossing and Ellis Street.

- **I-5 SB Ramp intersection and undercrossing improvements**. This project included several components. First, a wider sidewalk on the north side under I-5 was proposed as it is a critical walk and bike connection. Second, improved crosswalks were proposed for the north leg (major multiuse crossing) and west leg (median refuge island) of the I-5 SB ramp intersection. Third, additional vehicle capacity is proposed on the southbound approach, providing two left turn lanes and a right-turn lane. This project required more detailed concept design plan drawings to understand hope all the components work together. The concept designs are provided in Appendix E, and confirmed that a wider sidewalk is possible under I-5.
- **Lakeway Drive Multiuse Path and Access Management, Phase 3.** This project includes extending the multiuse path on the north side of the corridor between I-5 and Ellis Street. This segment does not have concept plans prepared and is envisioned to be a longer-term project due to its complexity and impacts to the existing street trees and utilities. A preliminary cost estimate has been prepared and is included in Appendix F, along with a graphic that highlights the costing assumptions.

Focus Area #6: King Street/Potter Street (I-5 Northbound Ramps)

This group of projects focused on the intersections of King Street/Potter Street/I-5 NB Ramps and Lincoln Street/Potter Street. Changes to these intersections would also likely the Lakeway Drive intersections at King Street and Lincoln Street. Before evaluating original intersection projects, this analysis took a step back to evaluate several network options in the area:

- **Option 1** involved a strategy to direct all I-5 northbound ramp activity to King Street. This would effectively cut access between I-5 ramps and Potter Street.
- **Option 2** is an inverse of Option 1, where all I-5 northbound ramp activity would be directed to Potter Street. This would effectively cut access between I-5 ramps and King Street.
- **Option 3** would convert the two Potter Street intersections to roundabouts: King Street/Potter Street/I-5 Ramps and Lincoln Street/Potter Street.
- **Option 4** would convert King Street and Potter Street to one-way roadways. This would create a clockwise traffic flow around the block: northbound on King Street, eastbound on Potter Street, southbound on Lincoln Street, and westbound on Lakeway Drive. Note both Lincoln Street and Lakeway Drive would remain two-way roads.

Table 15 shows the result of the traffic operations analysis, after shifting 2040 traffic based on the changed network assumptions. As shown in the table, all the options except Option 3 create worse operating conditions compared to the No Action scenario. This indicates that trying to concentrate traffic to one corridor or one direction of flow does not improve network performance. The best strategy appears to be to disperse traffic to both Potter Street and King Street and provide localized improvement to the Potter Street intersections.

Table 15. King/Potter/Lincoln/Lakeway Options: LOS Summary

Intersection	Traffic Control[1]: LOS[2] (Delay[3])				
	2040 No Action	2040 Opt. 1 "King Only"	2040 Opt. 2 "Potter Only"	2040 Opt. 3 "Potter RAB"	2040 Opt.4 "One-Way"
8. Lincoln St/ Lakeway Dr	Signal E (62)	Signal F (99)	Signal F (121)	Signal E (62)	Signal F (91)
14. Lakeway Dr/ King St[4]	Signal D (51)	Signal F (86)	Signal F (140)	Signal E (56)	Signal F (195)
24. King St/ Potter St/ I-5 NB Ramps[4]	NA	NA	TWSC: C (19)	RAB: A (7)	TWSC F (>200)
25. Lincoln St/ Potter St	TWSC F (>200)	Signal A (6)	RAB B (19)	RAB A (7)	Signal E (79)

Source: Transpo Group, 2021
1. Traffic Control: TWSC = two-way stop control; RAB = roundabout
2. Level of Service (A – F) as defined by the *Highway Capacity Manual* 6th Edition (TRB, 2016)
3. Average delay per vehicle in seconds
4. Evaluated using HCM 2000 due to limitations in the HCM 6th Edition and intersection configurations.

The following two projects were identified for further design analysis and cost estimates. The concept designs are provided in Appendix E.

- **Construct roundabout or compact roundabout at King Street/Potter Street/I-5 NB Ramp intersection.** The roundabout here would also have an added benefit of metering traffic to the NB on-ramp, potentially allowing for better merging of traffic on the I-5 mainline. In addition, this project could also incorporate a new HAWK crossing on King Street between Potter Street and Lakeway Drive.
- **Add roundabout or signal at Lincoln Street/Potter Street intersection.** This project was evaluated as a roundabout, but a traffic signal would also work at this location. The specific intersection control also depends on how redevelopment would change traffic demands and the site plans of the Elementary School and Aquatic Center Campus areas.

Other Study Area Projects

This group of projects were not in the focus area, but still identified for further analysis and cost estimates.

- **Add compact roundabout to I-5 SB On-Ramp/ 36th Street/ Fielding Avenue intersection.** This project required more detailed concept design plan drawings to understand the design of a compact roundabout. The concept designs are provided in Appendix E, and generally shows the layout of the new traffic controls.
- **Add compact roundabout to I-5 NB Off-Ramp/ Samish Way intersection.** This project required more detailed concept design plan drawings to understand the design of a compact roundabout. The concept designs are provided in Appendix E, and generally shows the layout of the new traffic controls.
- **I-5 Pedestrian Overcrossing**. The overcrossing is anticipated near the Consolidation Avenue right-of-way alignment. A concept design was prepared and is shown in Appendix E. In addition, a cost estimate was prepared. These cost estimates envision a simple overcrossing that would not accommodate vehicular traffic
- **State Street Bike Corridor Facility**. This project is envisioned between York Street and Meador Avenue to connected Meador Avenue bike facilities to downtown. This analysis focused on the revised cross-section in this corridor as shown in Appendix E.

Chapter 4. Final Projects and Implementation

This chapter presents the recommended final projects for the Lincoln-Lakeway Multimodal Transportation Study. The final project list is provided as well as a project map. The remainder of the chapter discusses the implementation plan.

Final Project List

Table 16 and Figure 30 show the final project list. This list only includes the recommended projects. For the full list of potential projects considered in this study, see Appendix D. Concept design graphics and cost estimate sheets are provide in Appendix E and F, respectively, for the analyzed projects as discussed above.

Table 16. List of Final Projects

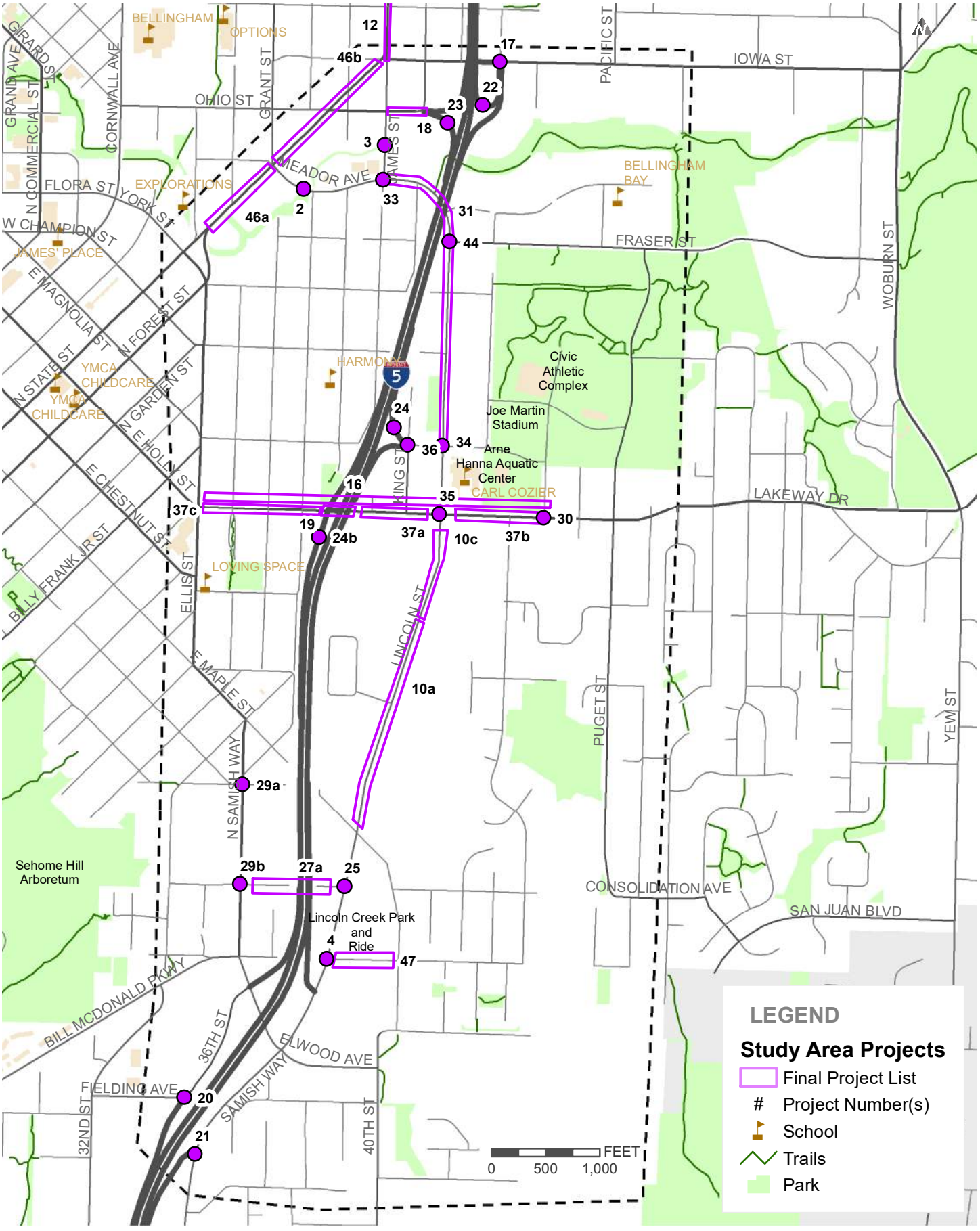
ID	Project Name (Extents)	Project Description	Cost ($1,000)	Timing/ Priority
	A. Lincoln/Lakeway			
35	Lincoln St / Lakeway Dr Protected Intersection	Rechannelize/expand intersection to provide protected bicycle lanes at the intersection; requires removal of WB transit queue jump		Mid-High
	B. Lakeway Corridor			
16	Lakeway Dr Signal Upgrades (*Lakeway Dr, between Ellis St to Puget St)*	Upgrade signal equipment to add signal coordination with WSDOT (I-5 SB Ramp) and HAWK signals for better progression through corridor.		Short-High
19	I-5 SB Ramp / Lakeway Dr Intersection and Underpass Improvements	Rechannelize to improve E-W ped/bike movements and add 10-ft sidewalk on north side. Provide two left-turn lanes. Crosswalk on west leg adjusted to create center refuge island. Widen sidewalk under I-5.	$2,045	Mid-High
30	Orleans St / Lakeway Dr Signal or Nevada St / Lakeway Dr Signal	Depending on future development plans in the area, provide a signal at either Nevada St or Orleans St to facilitate better access from local neighborhoods. May require remove of HAWK near Orleans St		Mid-High
37a	Lakeway Dr Multiuse Path and Access Management, Phase 1 (*Lakeway Dr, between James St to Lincoln St*)	Add multiuse path on north side. Add c-curb and/or consolidate driveways to restrict left-turn movements to/from mid-block locations. Add bike facilities (bike lanes and bike boxes) to support bike system improvements to Lakeway Dr and Lincoln St. Modify Lincoln/Lakeway signal and install Leading Pedestrian Intervals (LPIs).	$1,221	Mid-High
37b	Lakeway Dr Multiuse Path and Access Management, Phase 2 (*Lakeway Dr, between Lincoln St to Orleans St*)	Add multiuse path on north side. Add c-curb and/or consolidate driveways to restrict left-turn movements to/from mid-block locations.	$701	Mid-High
37c	Lakeway Dr Multiuse Path, Phase 3 (*Lakeway Dr, between I-5 and Ellis St*)	Add multiuse path on north side. Requires utility relocation and street tree removals to avoid additional right-of-way and impacts to adjoining residential properties.	$1,551	Long-Med
24b	I-5 Ramp Metering: SB Ramps at Lakeway Dr (*I-5 SB Ramp from Lakeway Dr*)	Add ramp meeting signals at this ramp. Requires additional storage through construction.		Long-Low

Table 16. List of Final Projects (Continued)

ID	Project Name (Extents)	Project Description	Cost ($1,000)	Timing/ Priority
	C. I-5/King/Potter IC			
24	I-5 Ramp Metering: NB Ramps at King St (*I-5 NB Ramp from King St*)	Add ramp meeting signals at this ramp. Requires additional storage through construction.		Long-Low
34	Lincoln St / Potter St Signal	Install signal (or roundabout)	$867 ($1,597)	Mid-Med
36	I-5 NB Ramps / King St / Potter St Intersection Improvement	Construct compact roundabout and reconfigure I-5 northbound ramps.	$2,119	Mid-Med
	D. Lincoln Corridor			
4	Byron Ave / Lincoln St Green Bike Markings	Install dashed green box bike markings in northbound Lincoln St bike lane across Byron Ave		Short-High
47	Byron Ave Sidewalk Improvement (*Bryon Ave, Lincoln St to Ashley Ave*)	Construct missing sidewalk on north side of road. WWU property and responsibility to improve Byron Avenue street frontage.		Short-high
25	Lincoln Creek Park and Ride Access Improvements (*Lincoln Creek Park and Ride Frontage*)	Relocate access or add traffic controls to improve safety of access. WWU property and responsibility to improve site access.		Long-Med
10a	Lincoln St Road Diet, Phase 1 (*Lincoln St, between Maple St and south Fred Meyer Driveway*)	Implement road diet to convert 5-lane road to 2/3-lane road. Install buffered bike lanes on both sides of roadway. Install RRFB with center island refuge near Lincoln St / Viking Cir to facilitate safe pedestrian crossing to WTA bus stops. Install traffic signal at Maple Street. Install sidewalk on west side of Lincoln St.	$847	Short-High
10c	Lincoln St Road Diet, Phase 3 (*Lincoln St, between south Fred Meyer Driveway and Lakeway Dr*)	Implement road diet to convert 5-lane road to 2/3-lane road. Install bike lanes on both sides. Likely requires driveway relocation at Fred Meyer gas station, and may require shifting other Fred Meyer driveways for improved ped/bike safety and improved traffic flows.	$300	Med-High
	E. Meador Crossing			
31	Enhanced Bike Facility on Meador Ave (*Meador Ave/Lincoln St corridor, between James St and Potter St*)	Provide 12-ft multiuse path along curve section near I-5 undercrossing. Green bike markings at other conflict areas.	$867	Med-High
33	James St / Meador Ave Improvement	Install signal (or compact roundabout)	$730 ($487)	Med-High
44	Lincoln St / Fraser St Improvement	Install signal (or compact roundabout)	$730 ($487)	Med-High
	F. I-5 Corridor Ped Crossing			
27a	I-5 Ped/Bike Overpass Crossing (*I-5 Corridor, between Lakeway Dr and Samish Way*)	Construct pedestrian/bike overpass as safe and comfortable crossing of I-5 corridor away from interchanges. Consolidation Avenue ROW alignment.	$22,370	Long-Low
	G. I-5 Samish IC			
20	I-5 SB On-Ramp / 36th St / Fielding Ave Intersection Improvement	Install compact roundabout to improve operations and safety	$2,370	Mid-Med
21	I-5 NB Off-Ramp / Samish Way Intersection Improvement	Install compact roundabout to improve operations and safety	$1,382	Mid-High

Table 16. List of Final Projects (Continued)

ID	Project Name (Extents)	Project Description	Cost ($1,000)	Timing/ Priority
	H. Iowa/Ohio IC			
17	I-5 NB Ramp / Iowa St Rechannelization	Add separate NBR lane to improve overall intersection capacity (more green time for east-west movements).		Mid-Med
18	I-5 SB Ramp / Ohio St Access Management (*Ohio St, between I-5 and James St*)	Due to safety and congestion concerns, close WBR movement to King Street. Also add c-curb to restrict mid-block left-turn movements along Ohio St.		Long-Low
22	I-5 Ramp Metering: NB Ramp at Iowa St *(I-5 NB Ramp from Iowa St)*	Add ramp metering signals at this ramp. May require additional storage through construction or rechannelization.		Long-Low
23	I-5 Ramp Metering: SB Ramp at Ohio St *(I-5 SB Ramp from Ohio St*)	Add ramp meeting signals at this ramp. May require additional storage through construction or rechannelization.		Long-Low
	I. North End			
2	Meador Ave Bridge Reconstruction (*Bridge on Meador Ave east of N State St*)	Reconstruct bridge over Whatcom Creek. Federal BRAC grant funding has been secured and construction scheduled 2022.	NA	Short-High
3	James St Bridge Reconstruction (*Bridge on James St north of Meador Ave*)	Reconstruct bridge over Whatcom Creek. Federal BRAC grant funding has been secured and construction scheduled 2022.	NA	Short-High
12	Lincoln St Bicycle Boulevard (*Lincoln St, between E North St and Iowa*)	Install bicycle boulevard		Long-Low
46a	N State St Bike Corridor Facility, Phase 1 (*N. State St, between York St and Meador Ave; Including NB 2-lane slip connection from Forest St to N. State Street*)	Add bike facility per BMP		Short-High
46b	N State St Bike Corridor Facility, Phase 2 (*State St, between Meador Ave and Ohio St*)	Add bike facility per BMP		Mid-High
	J. Other			
28	ADA Upgrades at Transit Stops (*Citywide WTA Routes*)	Upgrade ADA accessibility at 200 transit stops across the City as identified and prioritized by WTA		Short-High
29a	N Samish Way / Abbott St Signal	Install traffic signal	$400	Short-High
29b	N Samish Way / Consolidation Ave Signal	Install traffic signal	$400	Short-High



Final Project Map

Lincoln-Lakeway Multimodal Study

FIGURE **30**

C:\Users\PaulS\Documents\PROJECTS\19390 - Paul's Lincoln Lakeway GIS\Maps\MXD\Fig 30 - Final Project List.mxd

Implementation Strategies

The transportation improvements recommended by this study will take many years to implement and are expected to require millions of dollars from a variety of funding sources. This section discusses the known timing of various development proposals, transportation grant funding cycles, and possible implementation scenarios for the recommended transportation improvements. It should be noted that there are always more transportation needs than funding available, transportation grant funding is highly competitive, and there is no guarantee that project applications will receive funding.

Implementation of the project list could be organized into logical "Implementation Focus Areas" of the study area rather than in any sequential or numerical order, as follows:

Implementation Focus Area

- N. State Street (York Street to Meador Avenue)
- Meador-Lincoln (James Street to Lakeway Drive)
- Lincoln Street (E. Maple Street to Lakeway Drive)
- Lakeway Drive (Puget Street to Lincoln Street)
- Lakeway Drive (Lincoln Street to I-5)
- Lakeway Drive (I-5 to Ellis Street, includes I-5 Southbound Ramps)
- Interstate 5 Northbound On-/Off-ramps at King Street/ Potter Street
- N. Samish Way (Abbott Street to 36th Street)
- Interstate 5 Southbound On-ramp at 36th Street/ Fielding Avenue
- Interstate 5 Southbound Off-ramp at Samish Way
- Interstate 5 Northbound Off-ramp at Iowa Street

The implementation plan incorporates three general strategies: (1) leverage adopted project lists; (2) partner with new development; and (3) use proven funding sources. The following sections discuss these strategies in more detail.

Strategy #1: Leverage Adopted Project Lists

Implementation of the transportation improvements recommended by this study may require them being adopted on official City programs and plans. This opens the door to several types of funding opportunities.

Adopted projects in 2022-2027 Transportation Improvement Program (TIP)

The City has already taken early steps toward implementation of some transportation improvements recommended by this study, such as adopting Project #13 the Lincoln Street Multimodal Safety Improvements and the Lakeway Drive multiuse pathway (Puget Street to Lincoln Street) in the 2022-2027 TIP in June 2021.

Adopting these projects in the TIP allowed the City to apply for TIB grant funding in August 2021 for a traffic signal at Lincoln Street/E. Maple Street with a sidewalk along the south side of E. Maple Street between Lincoln Street and Consolidation Avenue. Even though this study was not complete, three independent TIAs for private development had already documented the need for a traffic signal at Lincoln Street/E. Maple Street and the Bellingham Pedestrian Master Plan recommends a sidewalk along E. Maple Street. The City will not know if this grant is funded until late November 2021, but if not, then other grant opportunities should become available in 2022 and future years.

The Lakeway Drive multiuse pathway from Puget Street to Lincoln Street was also adopted in the 2022-2027 TIP, which will allow the City to seek grant funding for those improvements, but this may depend on funding partnerships with the Bellingham School District, the timing of

Carl Cozier elementary school reconstruction, and potential relocation of the downtown YMCA to the Civic Field area.

Adopt Projects in Future 6-Year TIPs

If there are future grant funding opportunities that would provide a good fit for some of the recommended improvements in this study, then City staff will recommend that they be adopted in a future 6-Year TIP to make them eligible for the targeted grant funding. Working with other agencies, organizations, businesses, and developers will allow City staff to understand the timing and need for transportation improvements as new development and redevelopment occurs and may lead to opportunities for funding partnerships.

2022-2023 Updates to the Pedestrian and Bicycle Master Plans

Many of the recommended improvement projects in this study will also need to be recommended and then included in the prioritized project lists in the updates to the Bellingham Pedestrian and Bicycle Master Plans, which will begin in early 2022 with adoption expected in 2023. Depending on how these projects rank in the prioritized project list, this could allow these projects to be programmed for future construction with local Bellingham Transportation Fund dollars and adopted as a pedestrian or bikeway project in a future TIP. As explained above, this would also make these projects eligible for state and federal grant funding. The multiple sections of widened sidewalk along the north side of Lakeway Drive is an excellent example of a project that will be included in the updated Pedestrian Master Plan, prioritized amongst all projects, and programmed for local funding, grant funding, or both.

Strategy #2: Partner with New Development

Implementation of the transportation improvements recommended by this study may occur through new development, including street frontage improvements, off-site mitigation requirements of TIAs by private development, and partnering with other organizations.

Street Frontage Improvements

All new development that abuts a substandard public street is required to complete the edge of the public street to the City street standard in BMC 13.04. An example of this is the curb, gutter, landscaping strip, and sidewalk along the west side of Lincoln Street from Fred Meyer to Maple Street that was constructed by private development.

Off-Site Mitigation Documented in TIA

New development exceeding a threshold of 50 PM peak hour vehicle trips is likely to be subject to a Transportation Impact Analysis (TIA), which examines the impact of new vehicle trips from the proposed development on the citywide multimodal transportation system beyond the project site, especially at intersections. If off-site improvements are needed, the development can be required to fund and construct mitigation needed or to provide a proportionate share funding contribution toward a future capital improvement project, such as a traffic signal or a roundabout. An example of this is provided by three individual private residential development TIAs in the southeast portion of the study area (Elwood Edge, City View, Samish View), all of which require proportionate share funding contributions toward a future traffic signal at Lincoln Street/E. Maple Street.

Partnerships Between City and Other Interests

Opportunities may arise for the City to partner with organizations, agencies, and/or businesses when there are shared goals and mutual benefits for transportation system improvements. The City and WTA partner every year on a variety of capital improvements and studies. The City has also partnered with WCOG, WSDOT, BSD, WWU, the Port, and Whatcom County on transportation improvement projects. An example of an opportunity for mutual benefit and funding partnership in the Lincoln-Lakeway Study are the variety of recommended improvements surrounding the Civic Field site. When BSD reconstructs Carl Cozier elementary school, the City and BSD could partner on a Safe Route to School grant

for the off-street multi-use pathway along the north side of Lakeway Drive. If the YMCA relocates from downtown to Civic Field, then the City and the YMCA could partner on transportation grants to fund traffic signals and roundabouts at Lakeway/Orleans and Lincoln/Potter. There may even be an opportunity for the City, BSD, the YMCA, and others to partner and work together to master plan and re-arrange land uses on the entire Civic Field superblock with improvements to the surrounding transportation system.

Strategy #3: Use Proven Funding Sources

Implementation of the transportation improvements recommended by this study may occur through various methods, including street frontage improvements and off-site mitigation requirements of TIAs by private development, local funding programmed in the annual 6-Year TIP, state and federal transportation grant funding, and/or funding partnerships between the City, organizations, agencies, and businesses.

Local Funding Programmed in TIP

Each year, Bellingham programs local Street and Transportation Fund dollars in the 6-Year TIP for street resurfacing, ADA upgrades, crosswalks, sidewalks, bikeways, and transit-supportive capital improvements. Some of the recommended improvements in this study, such as sections of sidewalk, could be implemented in this manner.

State and Federal Transportation Grants

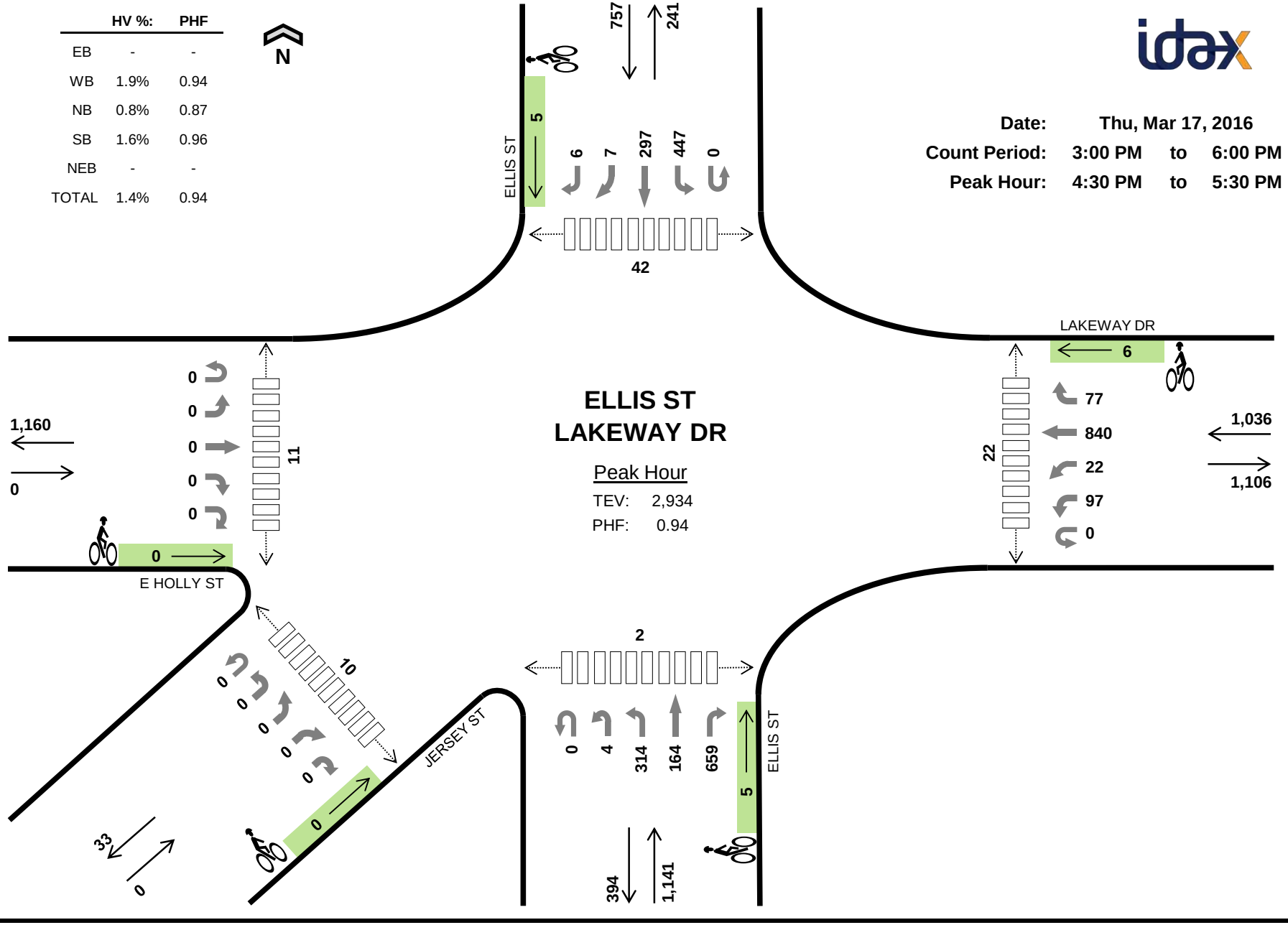
Bellingham applies for a wide variety of state and federal transportation grants according to the timing of funding cycles of each grant funding program. The first step in making transportation improvements eligible for state and federal grants is adoption of the project in the 6-Year TIP. An example of this is Project #13 Lincoln Street Multimodal Safety Improvements, which the City adopted in the 2022-2027 TIP in June 2021 in anticipation of applying for a WSDOT Pedestrian and Bicycle Safety Improvement grant in the Spring of 2022. If the City is successful with this grant, then funding would be awarded in July 2023, engineering and design could be completed in 2023-2024, and construction could occur in summer 2024 at the earliest, or possibly summer 2025 if there are project complications.

Other State Transportation Funding

Some of the more complex and larger recommendations for improvements in this study, such as the rechannelization of Interstate 5 on/off-ramps (Lakeway Drive southbound off-ramp; Iowa Street northbound off-ramp) and roundabouts at intersections that provide access to/from Interstate 5 (King Street/Potter Street/Lakeway Drive northbound on/off-ramps; 36th Street/Fielding Avenue/Samish Way southbound on-ramp; Samish Way northbound off-ramp), will very likely require that state funding be allocated in the WSDOT construction budget. The more expensive a project is, the longer it will take to compile enough funding to program it for eventual construction.

Appendix A: Traffic Counts

	HV %:	PHF
EB	-	-
WB	1.9%	0.94
NB	0.8%	0.87
SB	1.6%	0.96
NEB	-	-
TOTAL	1.4%	0.94



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Three-Hour Count Summaries

Interval Start	E HOLLY ST Eastbound					LAKEWAY DR Westbound					ELLIS ST Northbound					ELLIS ST Southbound					JERSEY ST Northeastbound					15-min Total	Rolling One Hour
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
3:00 PM	0	0	0	0	0	0	20	4	144	25	0	0	87	35	167	0	88	50	2	7	0	0	0	0	0	629	0
3:15 PM	0	0	0	0	0	0	19	5	180	25	0	1	75	37	119	0	105	50	0	5	0	0	0	0	0	621	0
3:30 PM	0	0	0	0	0	0	14	3	181	20	0	0	53	38	149	0	95	44	4	7	0	0	0	0	0	608	0
3:45 PM	0	0	0	0	0	0	18	3	198	22	0	1	86	30	141	0	104	53	2	4	0	0	0	0	0	662	2,520
4:00 PM	0	0	0	0	0	0	15	3	156	17	0	0	69	43	157	0	95	65	1	3	0	0	0	0	0	624	2,515
4:15 PM	0	0	0	0	0	0	21	10	179	20	0	2	64	40	137	0	96	65	2	3	0	0	0	0	0	639	2,533
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**7**	**184**	**15**	**0**	**1**	**90**	**52**	**162**	**0**	**119**	**73**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**725**	2,650
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**3**	**217**	**28**	**0**	**2**	**69**	**38**	**143**	**0**	**109**	**63**	**4**	**2**	**0**	**0**	**0**	**0**	**0**	**707**	2,695
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**22**	**4**	**219**	**18**	**0**	**1**	**88**	**48**	**191**	**0**	**107**	**77**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**778**	2,849
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**27**	**8**	**220**	**16**	**0**	**0**	**67**	**26**	**163**	**0**	**112**	**84**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**724**	**2,934**
5:30 PM	0	0	0	0	0	0	14	8	193	13	0	0	79	47	148	0	110	71	2	4	0	0	0	0	0	689	2,898
5:45 PM	0	0	0	0	0	0	24	2	179	16	0	1	67	41	143	0	81	53	1	1	0	0	0	0	0	609	2,800
Count Total	0	0	0	0	0	0	242	60	2,250	235	0	9	894	475	1,820	0	1,221	748	21	40	0	0	0	0	0	8,015	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**97**	**22**	**840**	**77**	**0**	**4**	**314**	**164**	**659**	**0**	**447**	**297**	**7**	**6**	**0**	**0**	**0**	**0**	**0**	**2,934**	**0**

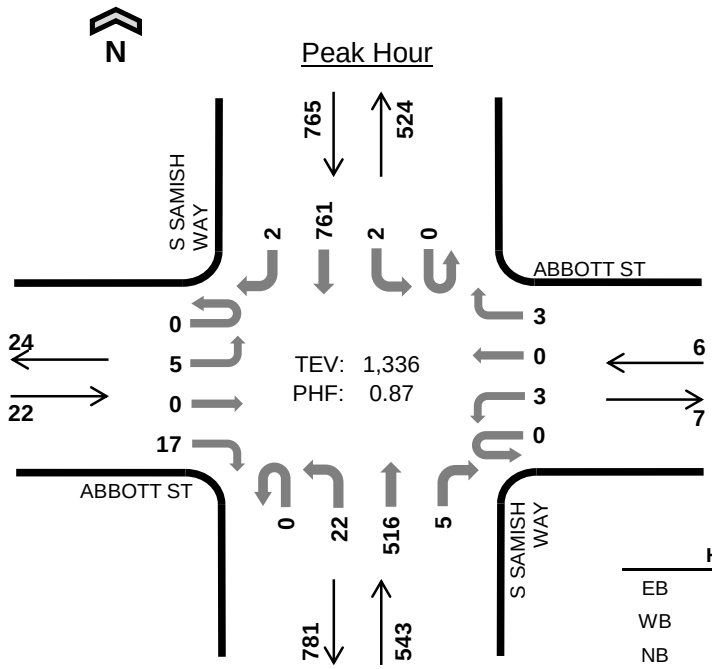
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

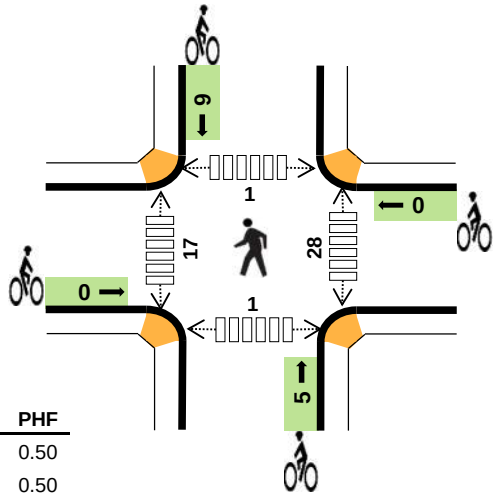
Interval Start	Heavy Vehicle Totals						Bicycles						Pedestrians (Crossing Leg)					
	EB	WB	NB	SB	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
3:00 PM	0	2	8	2	0	*12*	0	0	1	0	0	*1*	7	5	17	0	6	*35*
3:15 PM	0	2	3	3	0	*8*	0	0	1	0	0	*1*	0	2	9	0	4	*15*
3:30 PM	0	5	5	2	0	*12*	0	2	0	1	0	*3*	13	4	13	0	4	*34*
3:45 PM	0	2	3	5	0	*10*	0	0	1	0	0	*1*	1	2	13	0	2	*18*
4:00 PM	0	2	3	3	0	*8*	0	2	2	1	0	*5*	9	1	8	0	1	*19*
4:15 PM	0	6	6	2	0	*14*	0	1	0	1	0	*2*	2	4	16	0	6	*28*
4:30 PM	**0**	**6**	**2**	**2**	**0**	***10***	**0**	**4**	**1**	**1**	**0**	***6***	**6**	**3**	**17**	**0**	**1**	***27***
4:45 PM	**0**	**7**	**2**	**6**	**0**	***15***	**0**	**2**	**1**	**1**	**0**	***4***	**4**	**1**	**9**	**1**	**2**	***17***
5:00 PM	**0**	**4**	**4**	**2**	**0**	***10***	**0**	**0**	**0**	**2**	**0**	***2***	**6**	**4**	**9**	**0**	**2**	***21***
5:15 PM	**0**	**3**	**1**	**2**	**0**	***6***	**0**	**0**	**3**	**1**	**0**	***4***	**6**	**3**	**7**	**1**	**5**	***22***
5:30 PM	0	3	2	2	0	*7*	0	0	4	0	0	*4*	0	6	11	0	5	*22*
5:45 PM	0	3	0	2	0	*5*	0	1	2	2	0	*5*	6	3	10	0	3	*22*
Count Total	0	45	39	33	0	*117*	0	12	16	10	0	*38*	60	38	139	2	41	*280*
Peak Hr	**0**	**20**	**9**	**12**	**0**	***41***	**0**	**6**	**5**	**5**	**0**	***16***	**22**	**11**	**42**	**2**	**10**	*87*

Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

S SAMISH WAY
ABBOTT ST

Date: Thu, Sep 29, 2016
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	4.5%	0.50
WB	0.0%	0.50
NB	0.7%	0.85
SB	1.0%	0.88
TOTAL	1.0%	0.87

Three-Hour Count Summaries

Interval Start	ABBOTT ST Eastbound				ABBOTT ST Westbound				S SAMISH WAY Northbound				S SAMISH WAY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM	0	0	0	2	0	1	0	1	0	4	110	2	0	2	169	1	292	0
5:00 PM	0	3	0	8	0	0	0	0	0	6	126	1	0	0	206	1	351	0
5:15 PM	0	1	0	3	0	2	0	1	0	6	152	1	0	0	217	0	383	0
5:30 PM	0	1	0	4	0	0	0	1	0	6	128	1	0	0	169	0	310	1,336
Peak Hour	0	5	0	17	0	3	0	3	0	22	516	5	0	2	761	2	1,336	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	0	0	1	5	*6*	0	0	4	2	*6*	7	1	0	0	*8*
5:00 PM	1	0	1	1	*3*	0	0	0	2	*2*	8	4	0	0	*12*
5:15 PM	0	0	2	2	*4*	0	0	0	3	*3*	9	5	0	0	*14*
5:30 PM	0	0	0	0	*0*	0	0	1	2	*3*	4	7	1	1	*13*
Peak Hour	1	0	4	8	*13*	0	0	5	9	*14*	28	17	1	1	*47*

Three-Hour Count Summaries

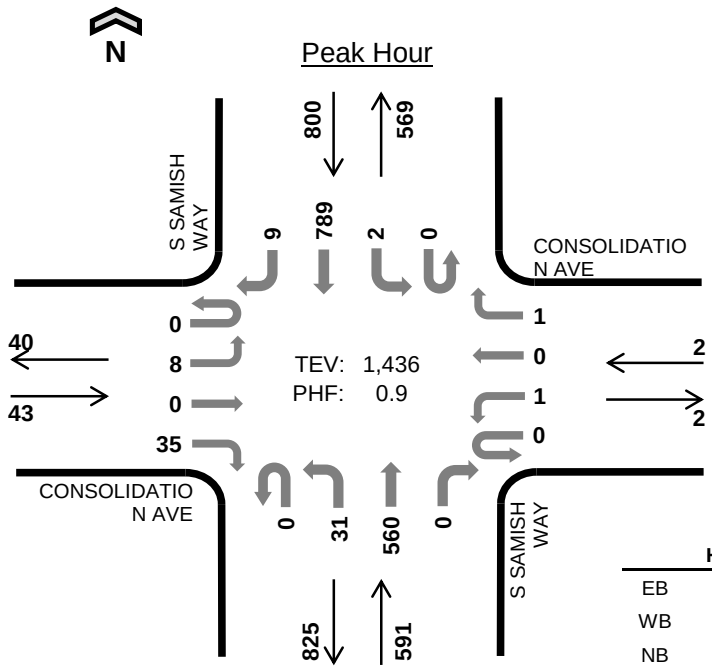
Interval Start	ABBOTT ST Eastbound				ABBOTT ST Westbound				S SAMISH WAY Northbound				S SAMISH WAY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	4	0	3	0	1	0	0	0	6	128	0	0	1	104	1	248	0
3:45 PM	0	1	0	2	0	2	0	1	0	3	131	0	0	1	143	1	285	0
4:00 PM	0	1	0	4	0	0	0	0	0	3	120	1	0	1	138	2	270	0
4:15 PM	0	1	0	5	0	1	1	0	1	7	112	0	0	0	141	0	269	1,072
4:30 PM	0	0	0	6	0	0	0	3	0	4	138	3	0	0	127	0	281	1,105
4:45 PM	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**1**	**0**	**4**	**110**	**2**	**0**	**2**	**169**	**1**	**292**	1,112
5:00 PM	**0**	**3**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**6**	**126**	**1**	**0**	**0**	**206**	**1**	**351**	1,193
5:15 PM	**0**	**1**	**0**	**3**	**0**	**2**	**0**	**1**	**0**	**6**	**152**	**1**	**0**	**0**	**217**	**0**	**383**	1,307
5:30 PM	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**1**	**0**	**6**	**128**	**1**	**0**	**0**	**169**	**0**	**310**	**1,336**
5:45 PM	0	1	0	2	0	0	0	1	0	3	110	1	0	1	161	1	281	1,325
6:00 PM	0	2	0	3	0	1	0	0	0	3	133	0	0	0	140	1	283	1,257
6:15 PM	0	0	0	3	0	0	0	0	0	4	112	1	0	1	138	1	260	1,134
Count Total	0	15	0	45	0	8	1	8	1	55	1,500	11	0	7	1,853	9	3,513	0
Peak Hour	**0**	**5**	**0**	**17**	**0**	**3**	**0**	**3**	**0**	**22**	**516**	**5**	**0**	**2**	**761**	**2**	**1,336**	**0**

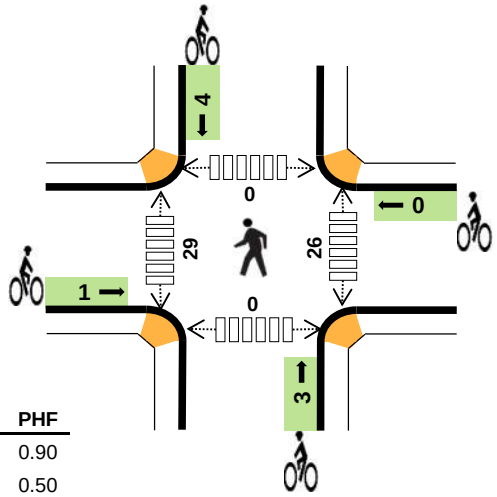
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:30 PM	0	0	2	1	*3*	0	0	3	0	*3*	2	3	0	0	*5*
3:45 PM	0	0	2	1	*3*	0	0	0	0	*0*	1	2	0	0	*3*
4:00 PM	0	0	4	1	*5*	0	0	4	0	*4*	5	3	0	0	*8*
4:15 PM	0	0	2	2	*4*	0	0	1	0	*1*	1	4	3	0	*8*
4:30 PM	0	0	2	1	*3*	0	0	3	3	*6*	4	4	0	0	*8*
4:45 PM	**0**	**0**	**1**	**5**	***6***	**0**	**0**	**4**	**2**	***6***	**7**	**1**	**0**	**0**	*8*
5:00 PM	**1**	**0**	**1**	**1**	***3***	**0**	**0**	**0**	**2**	***2***	**8**	**4**	**0**	**0**	*12*
5:15 PM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**3**	***3***	**9**	**5**	**0**	**0**	*14*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**2**	***3***	**4**	**7**	**1**	**1**	***13***
5:45 PM	0	0	1	1	*2*	0	0	0	0	*0*	4	5	0	1	*10*
6:00 PM	0	0	2	3	*5*	0	0	0	1	*1*	7	8	0	0	*15*
6:15 PM	0	0	0	1	*1*	0	0	1	0	*1*	11	7	0	3	*21*
Count Total	1	0	19	19	*39*	0	0	17	13	*30*	63	53	4	5	*125*
Peak Hour	**1**	**0**	**4**	**8**	***13***	**0**	**0**	**5**	**9**	***14***	**28**	**17**	**1**	**1**	***47***

S SAMISH WAY
CONSOLIDATION AVE

Date: Thu, Sep 29, 2016
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.0%	0.90
WB	0.0%	0.50
NB	0.7%	0.87
SB	1.0%	0.90
TOTAL	0.8%	0.90

Three-Hour Count Summaries

Interval Start	CONSOLIDATION AVE Eastbound				CONSOLIDATION AVE Westbound				S SAMISH WAY Northbound				S SAMISH WAY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM	0	0	0	10	0	0	0	0	0	5	122	0	0	0	181	2	320	0
5:00 PM	0	1	0	11	0	0	0	0	0	9	146	0	0	0	217	1	385	0
5:15 PM	0	4	0	5	0	0	0	1	0	13	156	0	0	2	215	5	401	0
5:30 PM	0	3	0	9	0	1	0	0	0	4	136	0	0	0	176	1	330	1,436
Peak Hour	0	8	0	35	0	1	0	1	0	31	560	0	0	2	789	9	1,436	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	0	0	1	5	*6*	1	0	2	0	*3*	5	3	0	0	*8*
5:00 PM	0	0	2	2	*4*	0	0	0	2	*2*	6	5	0	0	*11*
5:15 PM	0	0	1	1	*2*	0	0	0	1	*1*	12	7	0	0	*19*
5:30 PM	0	0	0	0	*0*	0	0	1	1	*2*	3	14	0	0	*17*
Peak Hour	0	0	4	8	*12*	1	0	3	4	*8*	26	29	0	0	*55*

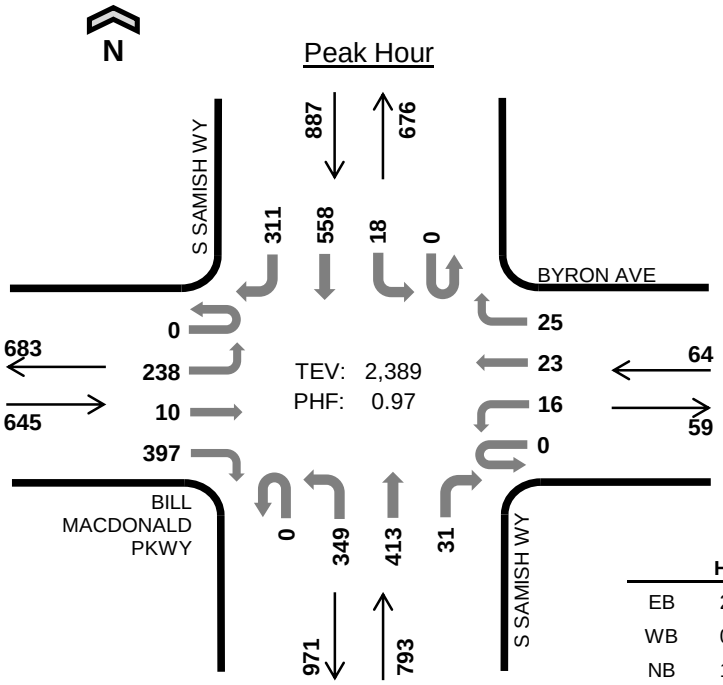
Three-Hour Count Summaries

Interval Start	CONSOLIDATION AVE Eastbound				CONSOLIDATION AVE Westbound				S SAMISH WAY Northbound				S SAMISH WAY Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	1	0	6	0	0	0	0	0	3	138	0	0	0	125	1	274	0
3:45 PM	0	7	0	5	0	0	0	0	0	6	138	0	0	0	141	3	300	0
4:00 PM	0	1	0	6	0	0	0	1	0	6	127	0	0	1	141	5	288	0
4:15 PM	0	4	0	9	0	0	0	0	1	3	124	0	0	0	149	2	292	1,154
4:30 PM	0	1	0	9	0	0	0	0	0	10	163	0	0	0	139	3	325	1,205
4:45 PM	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**0**	**0**	**5**	**122**	**0**	**0**	**0**	**181**	**2**	**320**	1,225
5:00 PM	**0**	**1**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**9**	**146**	**0**	**0**	**0**	**217**	**1**	**385**	1,322
5:15 PM	**0**	**4**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**13**	**156**	**0**	**0**	**2**	**215**	**5**	**401**	1,431
5:30 PM	**0**	**3**	**0**	**9**	**0**	**1**	**0**	**0**	**0**	**4**	**136**	**0**	**0**	**0**	**176**	**1**	**330**	**1,436**
5:45 PM	0	0	0	4	0	0	0	0	0	5	132	0	0	0	164	3	308	1,424
6:00 PM	0	2	0	4	0	0	0	0	0	3	141	0	0	0	154	3	307	1,346
6:15 PM	0	3	0	7	0	0	0	0	0	4	114	1	0	0	157	2	288	1,233
Count Total	0	27	0	85	0	1	0	2	1	71	1,637	1	0	3	1,959	31	3,818	0
Peak Hour	**0**	**8**	**0**	**35**	**0**	**1**	**0**	**1**	**0**	**31**	**560**	**0**	**0**	**2**	**789**	**9**	**1,436**	**0**

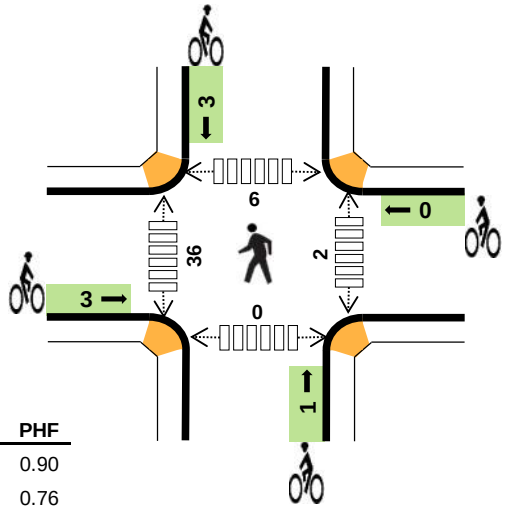
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:30 PM	0	0	3	3	*6*	0	0	2	0	*2*	6	6	0	0	*12*
3:45 PM	0	0	3	2	*5*	0	0	0	1	*1*	6	3	0	0	*9*
4:00 PM	0	0	3	1	*4*	2	0	3	1	*6*	2	9	0	0	*11*
4:15 PM	0	0	2	2	*4*	0	0	2	0	*2*	6	6	0	0	*12*
4:30 PM	0	0	3	1	*4*	0	0	4	2	*6*	6	2	0	0	*8*
4:45 PM	**0**	**0**	**1**	**5**	***6***	**1**	**0**	**2**	**0**	***3***	**5**	**3**	**0**	**0**	*8*
5:00 PM	**0**	**0**	**2**	**2**	***4***	**0**	**0**	**0**	**2**	***2***	**6**	**5**	**0**	**0**	*11*
5:15 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**1**	***1***	**12**	**7**	**0**	**0**	*19*
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**1**	***2***	**3**	**14**	**0**	**0**	***17***
5:45 PM	0	0	1	1	*2*	0	0	0	0	*0*	4	7	0	0	*11*
6:00 PM	0	0	2	3	*5*	0	0	0	1	*1*	8	5	0	0	*13*
6:15 PM	0	0	0	1	*1*	0	0	1	0	*1*	6	3	0	0	*9*
Count Total	0	0	21	22	*43*	3	0	15	9	*27*	70	70	0	0	*140*
Peak Hour	**0**	**0**	**4**	**8**	***12***	**1**	**0**	**3**	**4**	***8***	**26**	**29**	**0**	**0**	***55***

S SAMISH WY
BILL MACDONALD PKWY



Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	2.0%	0.90
WB	0.0%	0.76
NB	1.1%	0.94
SB	0.2%	0.99
TOTAL	1.0%	0.97

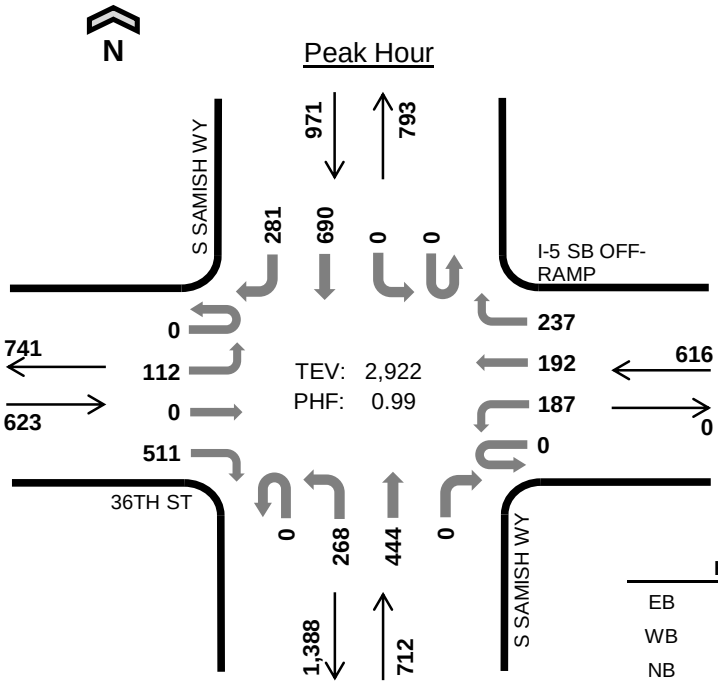
Two-Hour Count Summaries

Interval Start	BILL MACDONALD PKWY Eastbound				BYRON AVE Westbound				S SAMISH WY Northbound				S SAMISH WY 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	64	4	97	0	4	4	1	0	49	84	3	0	0	114	48	472	0
4:15 PM	0	57	2	106	0	7	5	3	0	87	102	7	0	4	113	81	574	0
4:30 PM	0	45	3	98	0	4	8	3	0	85	107	8	0	1	105	57	524	0
4:45 PM	0	60	1	88	0	1	5	3	0	81	103	8	0	7	160	80	597	2,167
5:00 PM	**0**	**67**	**2**	**111**	**0**	**6**	**1**	**7**	**0**	**84**	**98**	**5**	**0**	**6**	**134**	**85**	**606**	2,301
5:15 PM	**0**	**54**	**4**	**93**	**0**	**4**	**9**	**4**	**0**	**71**	**119**	**6**	**0**	**5**	**158**	**62**	**589**	2,316
5:30 PM	**0**	**54**	**1**	**102**	**0**	**1**	**7**	**4**	**0**	**90**	**97**	**12**	**0**	**1**	**134**	**78**	**581**	2,373
5:45 PM	**0**	**63**	**3**	**91**	**0**	**5**	**6**	**10**	**0**	**104**	**99**	**8**	**0**	**6**	**132**	**86**	**613**	**2,389**
Count Total	0	464	20	786	0	32	45	35	0	651	809	57	0	30	1,050	577	4,556	0
Peak Hour	**0**	**238**	**10**	**397**	**0**	**16**	**23**	**25**	**0**	**349**	**413**	**31**	**0**	**18**	**558**	**311**	**2,389**	**0**

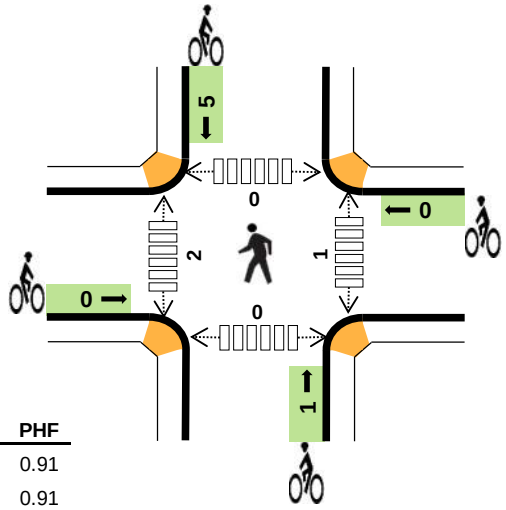
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

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	2	2	2	*11*	0	0	0	0	*0*	1	10	8	0	*19*
4:15 PM	3	1	6	4	*14*	1	0	0	1	*2*	0	7	6	0	*13*
4:30 PM	4	1	7	3	*15*	1	0	0	0	*1*	1	25	9	0	*35*
4:45 PM	2	0	2	3	*7*	3	0	0	1	*4*	0	9	4	0	*13*
5:00 PM	**4**	**0**	**1**	**1**	***6***	**1**	**0**	**1**	**1**	***3***	**1**	**13**	**2**	**0**	*16*
5:15 PM	**4**	**0**	**2**	**0**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**5**	**1**	**0**	*6*
5:30 PM	**4**	**0**	**4**	**0**	***8***	**1**	**0**	**0**	**1**	***2***	**0**	**12**	**0**	**0**	*12*
5:45 PM	**1**	**0**	**2**	**1**	***4***	**1**	**0**	**0**	**0**	***1***	**1**	**6**	**3**	**0**	***10***
Count Total	27	4	26	14	*71*	8	0	1	5	*14*	4	87	33	0	*124*
Peak Hour	**13**	**0**	**9**	**2**	***24***	**3**	**0**	**1**	**3**	***7***	**2**	**36**	**6**	**0**	***44***

S SAMISH WY
36TH ST



Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.2%	0.91
WB	0.6%	0.91
NB	1.3%	0.93
SB	1.5%	0.98
TOTAL	1.0%	0.99

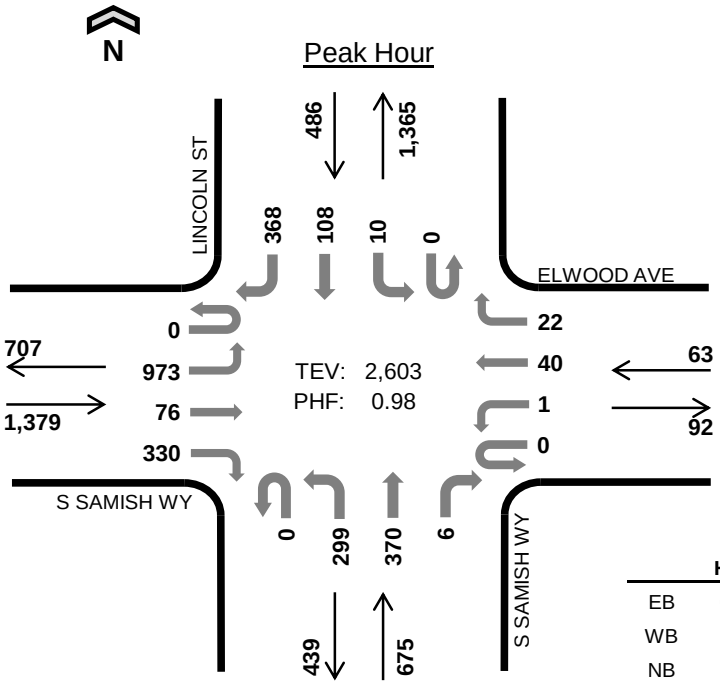
Two-Hour Count Summaries

Interval Start	36TH ST				I-5 SB OFF-RAMP				S SAMISH WY				S SAMISH WY				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	27	0	105	0	41	42	45	0	57	81	0	0	0	166	65	629	0
4:15 PM	0	28	0	109	0	58	51	53	0	60	105	0	0	0	169	60	693	0
4:30 PM	0	30	0	110	0	56	57	54	0	64	101	0	0	0	162	52	686	0
4:45 PM	**0**	**23**	**0**	**126**	**0**	**44**	**51**	**65**	**0**	**55**	**110**	**0**	**0**	**0**	**176**	**69**	**719**	2,727
5:00 PM	**0**	**30**	**0**	**132**	**0**	**43**	**40**	**50**	**0**	**78**	**114**	**0**	**0**	**0**	**180**	**61**	**728**	2,826
5:15 PM	**0**	**32**	**0**	**139**	**0**	**49**	**47**	**57**	**0**	**66**	**100**	**0**	**0**	**0**	**165**	**82**	**737**	2,870
5:30 PM	**0**	**27**	**0**	**114**	**0**	**51**	**54**	**65**	**0**	**69**	**120**	**0**	**0**	**0**	**169**	**69**	**738**	**2,922**
5:45 PM	0	23	0	94	0	45	37	77	0	54	104	0	0	0	176	57	667	2,870
Count Total	0	220	0	929	0	387	379	466	0	503	835	0	0	0	1,363	515	5,597	0
Peak Hour	**0**	**112**	**0**	**511**	**0**	**187**	**192**	**237**	**0**	**268**	**444**	**0**	**0**	**0**	**690**	**281**	**2,922**	**0**

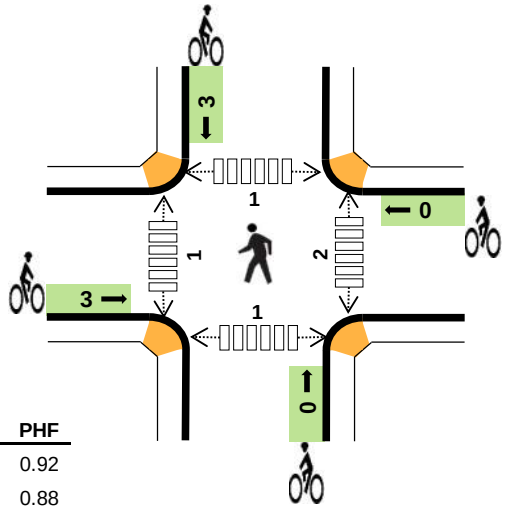
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	1	1	8	*14*	1	0	1	1	*3*	0	3	0	0	*3*
4:15 PM	2	4	4	6	*16*	1	0	0	1	*2*	0	3	0	0	*3*
4:30 PM	2	2	4	4	*12*	0	0	0	1	*1*	0	2	1	0	*3*
4:45 PM	**0**	**1**	**2**	**4**	***7***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**2**	**5**	***7***	**0**	**0**	**1**	**1**	***2***	**1**	**1**	**0**	**0**	*2*
5:15 PM	**0**	**0**	**3**	**2**	***5***	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**1**	**3**	**2**	**4**	***10***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**0**	***1***
5:45 PM	0	1	2	1	*4*	1	0	0	1	*2*	1	1	0	0	*2*
Count Total	9	12	20	34	*75*	3	0	2	9	*14*	2	11	1	0	*14*
Peak Hour	**1**	**4**	**9**	**15**	***29***	**0**	**0**	**1**	**5**	***6***	**1**	**2**	**0**	**0**	***3***

LINCOLN ST
S SAMISH WY



Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.9%	0.92
WB	1.6%	0.88
NB	1.0%	0.78
SB	2.1%	0.88
TOTAL	1.2%	0.98

Two-Hour Count Summaries

Interval Start	S SAMISH WY Eastbound				ELWOOD AVE Westbound				S SAMISH WY Northbound				LINCOLN ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	231	17	71	0	0	5	11	0	56	58	0	0	0	40	69	558	0
4:15 PM	0	240	22	87	0	0	13	4	0	51	58	2	0	3	31	100	611	0
4:30 PM	0	207	21	82	0	1	10	7	0	71	61	1	0	6	30	88	585	0
4:45 PM	**0**	**262**	**12**	**75**	**0**	**0**	**8**	**7**	**0**	**66**	**87**	**0**	**0**	**2**	**27**	**90**	**636**	2,390
5:00 PM	**0**	**248**	**21**	**79**	**0**	**0**	**9**	**6**	**0**	**72**	**77**	**1**	**0**	**2**	**28**	**108**	**651**	2,483
5:15 PM	**0**	**264**	**25**	**87**	**0**	**1**	**14**	**3**	**0**	**70**	**82**	**3**	**0**	**3**	**19**	**81**	**652**	2,524
5:30 PM	**0**	**199**	**18**	**89**	**0**	**0**	**9**	**6**	**0**	**91**	**124**	**2**	**0**	**3**	**34**	**89**	**664**	**2,603**
5:45 PM	0	258	21	77	0	0	9	9	0	69	61	0	0	4	26	77	611	2,578
Count Total	0	1,909	157	647	0	2	77	53	0	546	608	9	0	23	235	702	4,968	0
Peak Hour	**0**	**973**	**76**	**330**	**0**	**1**	**40**	**22**	**0**	**299**	**370**	**6**	**0**	**10**	**108**	**368**	**2,603**	**0**

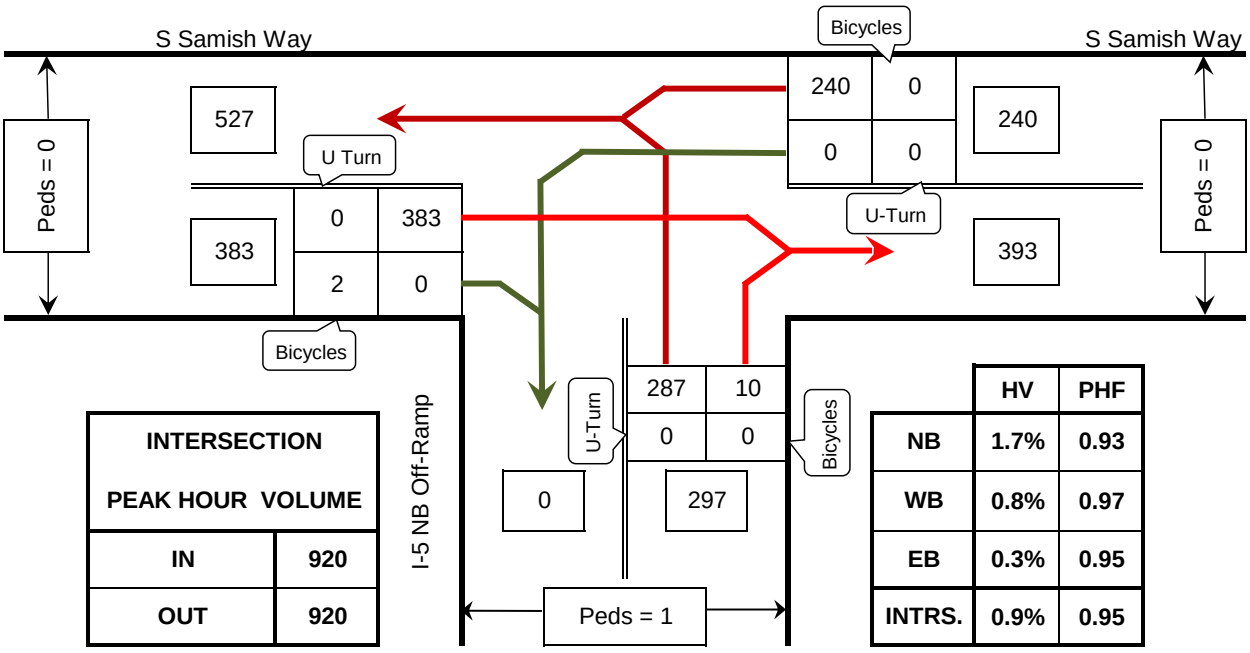
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

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	9	0	0	0	*9*	0	0	0	1	*1*	1	0	0	3	*4*
4:15 PM	7	0	2	4	*13*	1	0	0	0	*1*	1	0	0	4	*5*
4:30 PM	4	0	1	4	*9*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	**4**	**1**	**4**	**4**	***13***	**1**	**0**	**0**	**0**	***1***	**1**	**0**	**0**	**1**	*2*
5:00 PM	**4**	**0**	**1**	**1**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**1**	**0**	*1*
5:15 PM	**2**	**0**	**1**	**3**	***6***	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**3**	**0**	**1**	**2**	***6***	**1**	**0**	**0**	**1**	***2***	**1**	**1**	**0**	**0**	***2***
5:45 PM	3	1	2	3	*9*	2	0	0	1	*3*	0	0	2	0	*2*
Count Total	36	2	12	21	*71*	6	0	0	5	*11*	4	1	3	8	*16*
Peak Hour	**13**	**1**	**7**	**10**	***31***	**3**	**0**	**0**	**3**	***6***	**2**	**1**	**1**	**1**	***5***

TRAFFIC DATA GATHERING

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:45 PM TO 5:45 PM



INTERSECTION PEAK HOUR VOLUME	
IN	920
OUT	920

	HV	PHF
NB	1.7%	0.93
WB	0.8%	0.97
EB	0.3%	0.95
INTRS.	0.9%	0.95

HV = Heavy Vehicles
PHF = Peak Hour Factor

I-5 NB Off-Ramp @ S Samish Way

Bellingham, WA

COUNTED BY: TDG

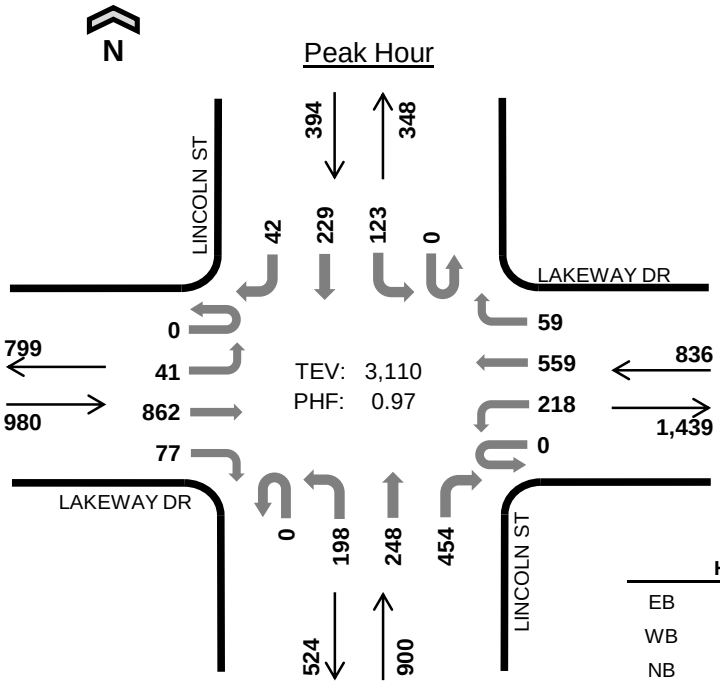
DATE OF COUNT: Wed. 2/12/20

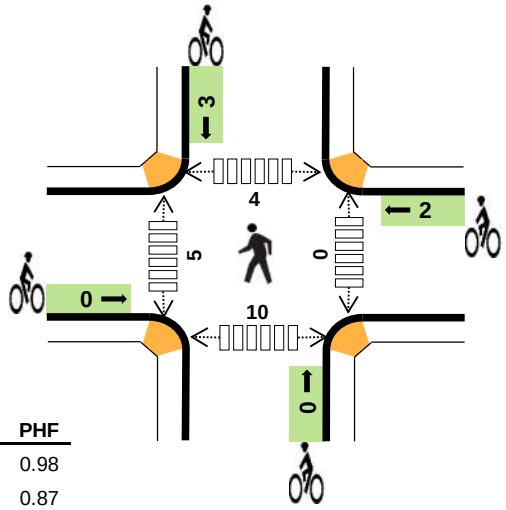
REDUCTION DATE: Fri. 2/14/20

TIME OF COUNT: 4:00 PM - 6:00 PM

LINCOLN ST
LAKEWAY DR

Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %	PHF
EB	0.6%	0.98
WB	1.0%	0.87
NB	1.1%	0.87
SB	1.0%	0.86
TOTAL	0.9%	0.97

Two-Hour Count Summaries

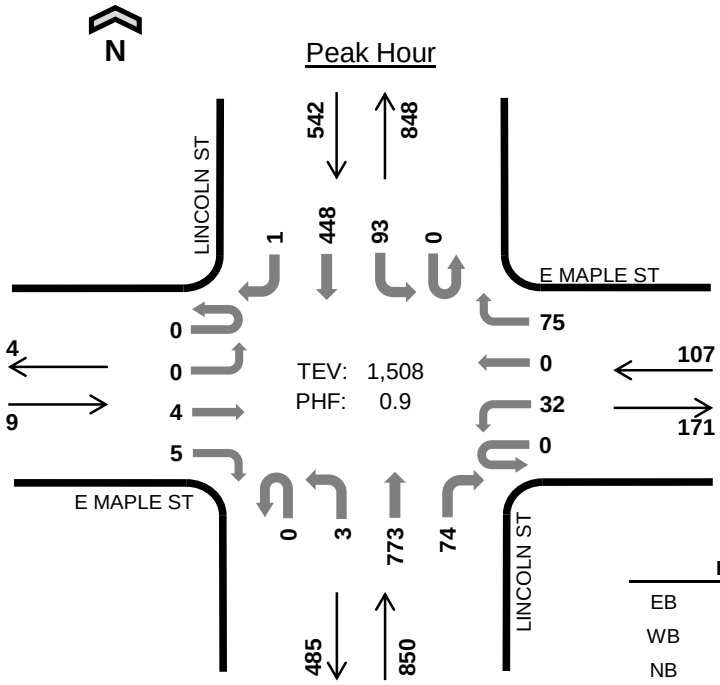
Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				LINCOLN ST Northbound				LINCOLN ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	11	163	24	0	67	111	13	0	52	34	82	0	32	40	14	643	0
4:15 PM	0	7	204	25	0	69	137	14	0	41	44	91	0	16	50	6	704	0
4:30 PM	0	13	194	26	0	59	110	17	0	45	46	83	0	24	55	10	682	0
4:45 PM	0	11	200	15	0	59	137	15	0	45	37	91	0	19	44	10	683	2,712
5:00 PM	**0**	**11**	**214**	**16**	**0**	**52**	**134**	**17**	**0**	**49**	**51**	**93**	**0**	**31**	**54**	**11**	**733**	2,802
5:15 PM	**0**	**7**	**224**	**20**	**0**	**64**	**158**	**17**	**0**	**44**	**66**	**110**	**0**	**24**	**56**	**10**	**800**	2,898
5:30 PM	**0**	**9**	**209**	**22**	**0**	**43**	**112**	**14**	**0**	**49**	**78**	**132**	**0**	**36**	**64**	**15**	**783**	2,999
5:45 PM	**0**	**14**	**215**	**19**	**0**	**59**	**155**	**11**	**0**	**56**	**53**	**119**	**0**	**32**	**55**	**6**	**794**	**3,110**
Count Total	0	83	1,623	167	0	472	1,054	118	0	381	409	801	0	214	418	82	5,822	0
Peak Hour	**0**	**41**	**862**	**77**	**0**	**218**	**559**	**59**	**0**	**198**	**248**	**454**	**0**	**123**	**229**	**42**	**3,110**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

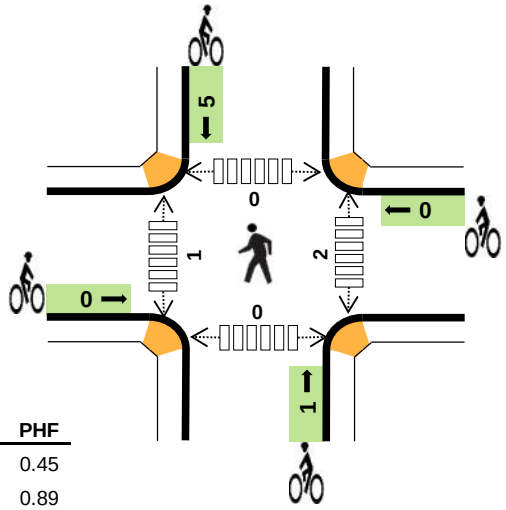
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	8	9	2	*21*	0	1	1	1	*3*	0	0	0	6	*6*
4:15 PM	5	10	8	2	*25*	0	0	0	0	*0*	0	1	1	8	*10*
4:30 PM	2	6	3	1	*12*	0	0	0	0	*0*	0	5	2	6	*13*
4:45 PM	2	6	4	1	*13*	1	0	0	0	*1*	0	0	1	3	*4*
5:00 PM	**3**	**1**	**3**	**0**	***7***	**0**	**2**	**0**	**0**	***2***	**0**	**2**	**1**	**3**	*6*
5:15 PM	**1**	**2**	**2**	**1**	***6***	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**1**	**2**	*3*
5:30 PM	**1**	**3**	**1**	**2**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**1**	**3**	*6*
5:45 PM	**1**	**2**	**4**	**1**	***8***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**1**	**2**	***4***
Count Total	17	38	34	10	*99*	1	3	1	4	*9*	0	11	8	33	*52*
Peak Hour	**6**	**8**	**10**	**4**	***28***	**0**	**2**	**0**	**3**	***5***	**0**	**5**	**4**	**10**	***19***

Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

LINCOLN ST
E MAPLE ST



Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.0%	0.45
WB	0.0%	0.89
NB	1.5%	0.89
SB	1.8%	0.92
TOTAL	1.5%	0.90

Two-Hour Count Summaries

Interval Start	E MAPLE ST Eastbound				E MAPLE ST Westbound				LINCOLN ST Northbound				LINCOLN ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	4	0	4	0	3	0	15	0	4	109	15	0	15	101	4	274	0
4:15 PM	0	3	0	2	0	9	1	14	0	0	159	12	0	14	116	2	332	0
4:30 PM	0	1	0	1	0	12	0	12	0	1	125	11	0	16	129	5	313	0
4:45 PM	0	0	0	4	0	14	0	20	0	0	166	12	0	18	106	1	341	1,260
5:00 PM	**0**	**0**	**3**	**2**	**0**	**6**	**0**	**21**	**0**	**1**	**153**	**17**	**0**	**20**	**128**	**0**	**351**	1,337
5:15 PM	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**17**	**0**	**0**	**219**	**19**	**0**	**26**	**105**	**0**	**392**	1,397
5:30 PM	**0**	**0**	**1**	**1**	**0**	**10**	**0**	**20**	**0**	**1**	**226**	**12**	**0**	**26**	**120**	**0**	**417**	1,501
5:45 PM	**0**	**0**	**0**	**0**	**0**	**12**	**0**	**17**	**0**	**1**	**175**	**26**	**0**	**21**	**95**	**1**	**348**	**1,508**
Count Total	0	8	4	16	0	70	1	136	0	8	1,332	124	0	156	900	13	2,768	0
Peak Hour	**0**	**0**	**4**	**5**	**0**	**32**	**0**	**75**	**0**	**3**	**773**	**74**	**0**	**93**	**448**	**1**	**1,508**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

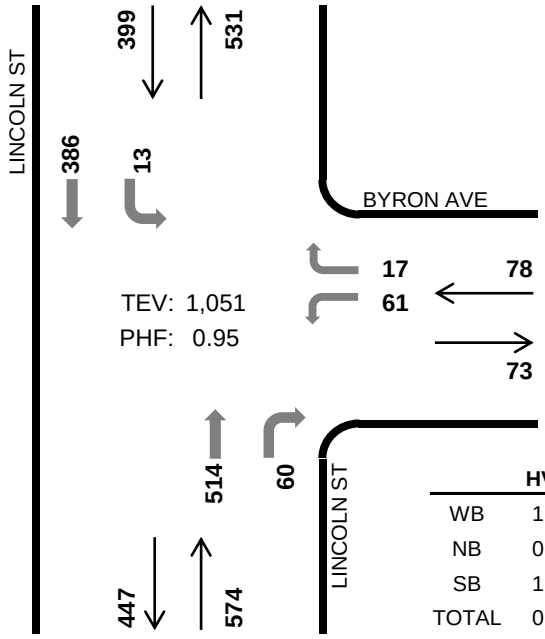
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	7	3	*11*	0	0	2	0	*2*	1	3	0	3	*7*
4:15 PM	0	0	7	5	*12*	0	0	0	0	*0*	0	1	0	1	*2*
4:30 PM	0	1	3	4	*8*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	0	0	4	2	*6*	0	1	1	1	*3*	1	0	0	0	*1*
5:00 PM	**0**	**0**	**4**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**0**	**0**	**3**	**4**	***7***	**0**	**0**	**0**	**2**	***2***	**1**	**0**	**0**	**0**	*1*
5:30 PM	**0**	**0**	**3**	**2**	***5***	**0**	**0**	**0**	**2**	***2***	**0**	**0**	**0**	**0**	*0*
5:45 PM	**0**	**0**	**3**	**2**	***5***	**0**	**0**	**1**	**1**	***2***	**1**	**0**	**0**	**0**	***1***
Count Total	0	2	34	24	*60*	0	1	4	6	*11*	4	5	0	4	*13*
Peak Hour	**0**	**0**	**13**	**10**	***23***	**0**	**0**	**1**	**5**	***6***	**2**	**1**	**0**	**0**	***3***

LINCOLN ST
BYRON AVE

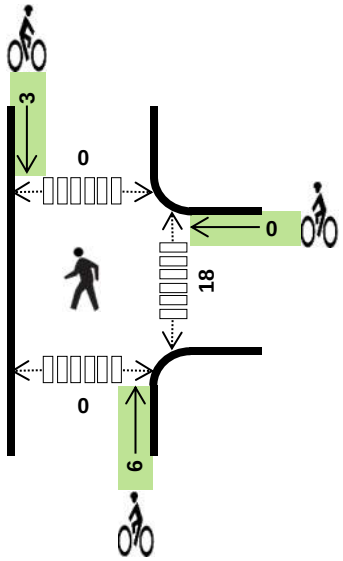
Date: Thu, Sep 26, 2013
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

N

Peak Hour



	HV %:	PHF
WB	1.3%	0.85
NB	0.3%	0.90
SB	1.0%	0.92
TOTAL	0.7%	0.95



Two-Hour Count Summaries

Interval Start	BYRON AVE Eastbound			BYRON AVE Westbound			LINCOLN ST Northbound			LINCOLN ST Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	21	0	5	0	125	16	12	84	0	263	
4:15 PM	0	0	0	17	0	3	0	111	22	7	85	0	245	
4:30 PM	**0**	**0**	**0**	**11**	**0**	**5**	**0**	**125**	**12**	**3**	**105**	**0**	**261**	
4:45 PM	**0**	**0**	**0**	**17**	**0**	**5**	**0**	**124**	**17**	**3**	**102**	**0**	**268**	1,037
5:00 PM	**0**	**0**	**0**	**12**	**0**	**5**	**0**	**120**	**17**	**4**	**88**	**0**	**246**	1,020
5:15 PM	**0**	**0**	**0**	**21**	**0**	**2**	**0**	**145**	**14**	**3**	**91**	**0**	**276**	**1,051**
5:30 PM	0	0	0	13	0	3	0	118	13	3	97	0	247	1,037
5:45 PM	0	0	0	14	0	3	0	127	15	5	104	0	268	1,037
Count Total	0	0	0	126	0	31	0	995	126	40	756	0	2,074	
Peak Hr	**0**	**0**	**0**	**61**	**0**	**17**	**0**	**514**	**60**	**13**	**386**	**0**	**1,051**	

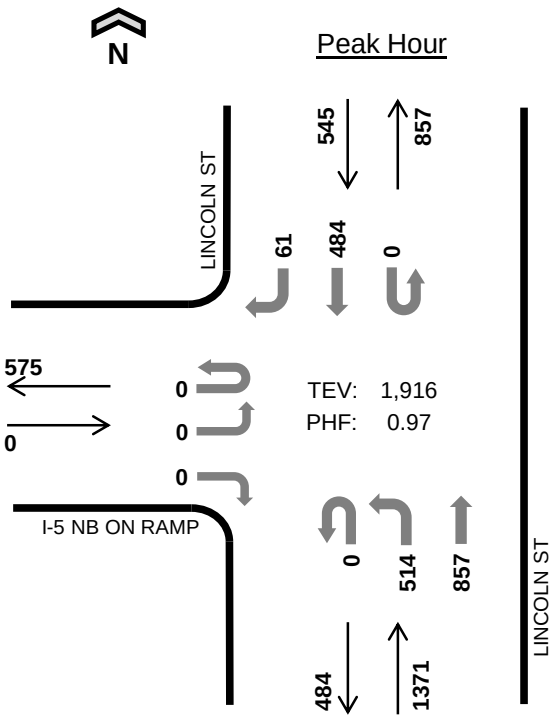
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	2	0	*2*	0	0	0	0	*0*	10	0	0	0	*10*
4:15 PM	0	0	1	0	*1*	0	0	2	0	*2*	5	0	0	0	*5*
4:30 PM	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**1**	**1**	***2***	**6**	**0**	**0**	**0**	***6***
4:45 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**3**	**0**	***3***	**4**	**0**	**0**	**0**	***4***
5:00 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**1**	**2**	***3***	**6**	**0**	**0**	**0**	***6***
5:15 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**1**	**0**	***1***	**2**	**0**	**0**	**0**	***2***
5:30 PM	0	0	1	0	*1*	0	0	2	0	*2*	6	0	0	0	*6*
5:45 PM	0	0	1	0	*1*	0	0	3	3	*6*	4	0	0	0	*4*
Count Total	0	1	7	4	*12*	0	0	13	6	*19*	43	0	0	0	*43*
Peak Hr	**0**	**1**	**2**	**4**	***7***	**0**	**0**	**6**	**3**	***9***	**18**	**0**	**0**	**0**	***18***

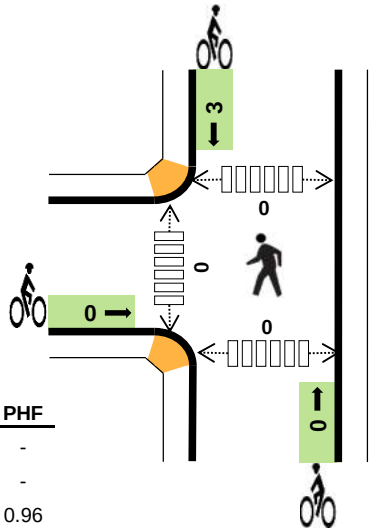
Mark Skaggs: 425 - 250 - 0777 mark.skaggs@idaxdata.com

LINCOLN ST
I-5 NB ON RAMP

Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	-	-
WB	-	-
NB	1.2%	0.96
SB	1.8%	0.93
TOTAL	1.4%	0.97



Two-Hour Count Summaries

Interval Start	I-5 NB ON RAMP				0				LINCOLN ST				LINCOLN ST				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	162	143	0	0	0	107	22	434	0
4:15 PM	0	0	0	0	0	0	0	0	0	128	170	0	0	0	133	13	444	0
4:30 PM	0	0	0	0	0	0	0	0	0	126	155	0	0	0	133	19	433	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**171**	**186**	**0**	**0**	**0**	**117**	**20**	**494**	1,805
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**151**	**179**	**0**	**0**	**0**	**132**	**14**	**476**	1,847
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**105**	**243**	**0**	**0**	**0**	**106**	**15**	**469**	1,872
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**87**	**249**	**0**	**0**	**0**	**129**	**12**	**477**	**1,916**
5:45 PM	0	0	0	0	0	0	0	0	0	107	210	0	0	0	104	13	434	1,856
Count Total	0	0	0	0	0	0	0	0	0	1,037	1,535	0	0	0	961	128	3,661	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**514**	**857**	**0**	**0**	**0**	**484**	**61**	**1,916**	**0**

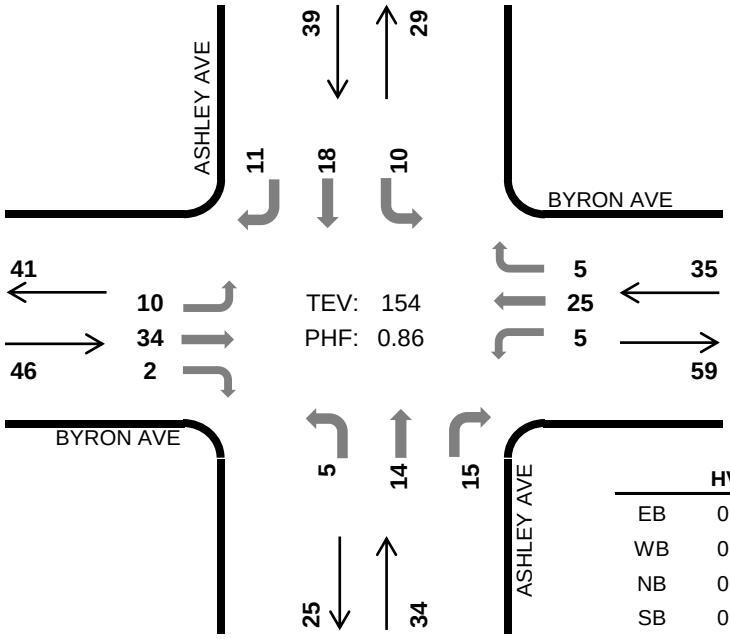
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	9	2	*11*	0	0	2	1	*3*	0	0	0	0	*0*
4:15 PM	0	0	9	5	*14*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	0	0	5	5	*10*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	**0**	**0**	**6**	**3**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**0**	**4**	**1**	***5***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**3**	**4**	***7***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**0**	**0**	**4**	**2**	***6***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
5:45 PM	0	0	5	3	*8*	0	0	1	1	*2*	0	0	0	0	*0*
Count Total	0	0	45	25	*70*	0	0	3	5	*8*	0	0	0	0	*0*
Peak Hr	**0**	**0**	**17**	**10**	***27***	**0**	**0**	**0**	**3**	***3***	**0**	**0**	**0**	**0**	***0***

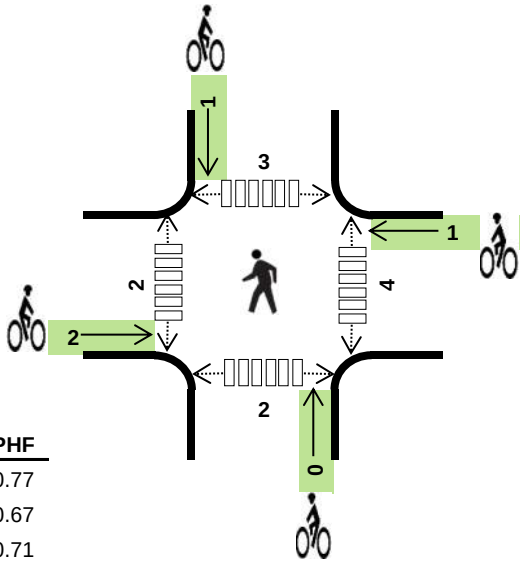
ASHLEY AVE
BYRON AVE

Date: Thu, Sep 26, 2013
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Peak Hour



	HV %:	PHF
EB	0.0%	0.77
WB	0.0%	0.67
NB	0.0%	0.71
SB	0.0%	0.70
TOTAL	0.0%	0.86



Two-Hour Count Summaries

Interval Start	BYRON AVE Eastbound			BYRON AVE Westbound			ASHLEY AVE Northbound			ASHLEY AVE Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	6	5	1	3	7	2	1	2	3	0	5	1	36	
4:15 PM	3	10	2	0	5	0	1	4	3	1	4	4	37	
4:30 PM	1	8	0	0	2	0	0	3	3	0	9	4	30	
4:45 PM	**3**	**8**	**0**	**5**	**8**	**0**	**1**	**6**	**5**	**1**	**6**	**2**	**45**	148
5:00 PM	**5**	**9**	**1**	**0**	**7**	**2**	**3**	**1**	**2**	**2**	**3**	**0**	**35**	147
5:15 PM	**1**	**7**	**0**	**0**	**7**	**3**	**1**	**3**	**4**	**4**	**3**	**4**	**37**	147
5:30 PM	**1**	**10**	**1**	**0**	**3**	**0**	**0**	**4**	**4**	**3**	**6**	**5**	**37**	**154**
5:45 PM	3	7	1	0	6	0	0	6	2	0	6	3	34	143
Count Total	23	64	6	8	45	7	7	29	26	11	42	23	291	
Peak Hr	**10**	**34**	**2**	**5**	**25**	**5**	**5**	**14**	**15**	**10**	**18**	**11**	**154**	

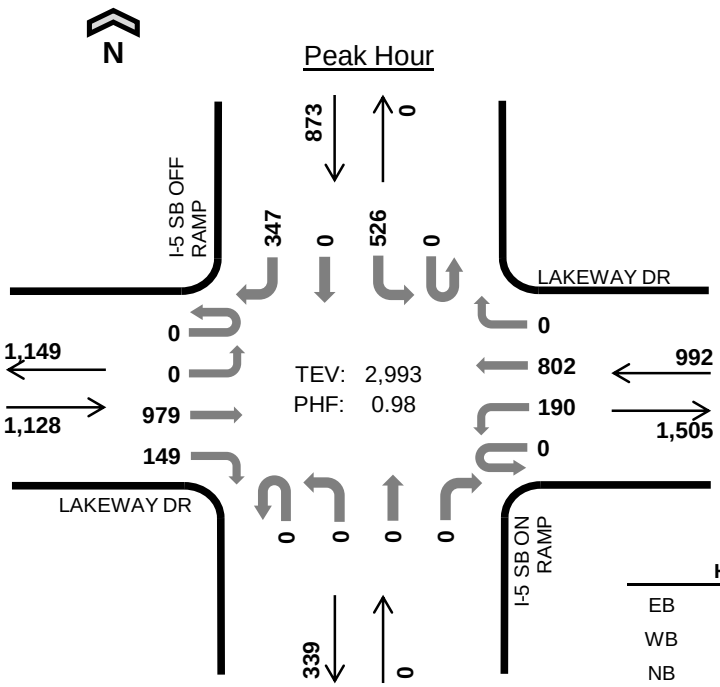
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

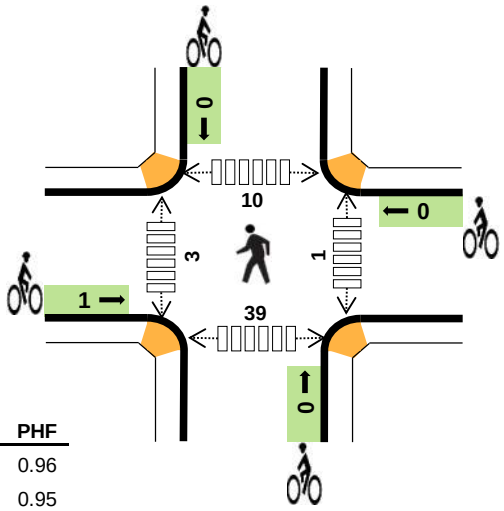
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	1	1	0	*2*	1	0	0	0	*1*	0	1	4	1	*6*
4:15 PM	0	0	0	0	*0*	0	0	0	1	*1*	1	0	1	0	*2*
4:30 PM	0	0	0	1	*1*	0	0	1	0	*1*	0	0	1	4	*5*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***
5:00 PM	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**2**	**1**	***4***
5:15 PM	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**0**	**1**	***3***	**1**	**0**	**1**	**1**	***3***
5:30 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**0**	***3***
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	4	1	4	*9*
Count Total	0	1	1	1	*3*	3	1	1	2	*7*	5	7	10	11	*33*
Peak Hr	**0**	**0**	**0**	**0**	***0***	**2**	**1**	**0**	**1**	***4***	**4**	**2**	**3**	**2**	***11***

Mark Skaggs: 425 - 250 - 0777 mark.skaggs@idaxdata.com

I-5 SB ON RAMP
LAKEWAY DR

Date: Thu, Mar 17, 2016
Count Period: 3:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	1.2%	0.96
WB	1.4%	0.95
NB	-	-
SB	0.8%	0.95
TOTAL	1.1%	0.98

Three-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				I-5 SB ON RAMP Northbound				I-5 SB OFF RAMP Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM	0	0	240	37	0	49	206	0	0	0	0	0	0	132	0	86	750	0
5:00 PM	0	0	244	38	0	50	212	0	0	0	0	0	0	133	0	83	760	0
5:15 PM	0	0	256	38	0	43	189	0	0	0	0	0	0	127	0	102	755	0
5:30 PM	0	0	239	36	0	48	195	0	0	0	0	0	0	134	0	76	728	2,993
Peak Hour	0	0	979	149	0	190	802	0	0	0	0	0	0	526	0	347	2,993	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	3	4	0	3	***10***	1	0	0	0	***1***	0	3	3	9	***15***
5:00 PM	6	4	0	1	***11***	0	0	0	0	***0***	1	0	2	7	***10***
5:15 PM	4	2	0	2	***8***	0	0	0	0	***0***	0	0	3	11	***14***
5:30 PM	0	4	0	1	***5***	0	0	0	0	***0***	0	0	2	12	***14***
Peak Hour	13	14	0	7	***34***	1	0	0	0	***1***	1	3	10	39	***53***

Three-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				I-5 SB ON RAMP Northbound				I-5 SB OFF RAMP Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	0	223	47	0	50	131	0	0	0	0	0	0	98	0	54	603	0
3:15 PM	0	0	211	38	0	41	192	0	0	0	0	0	0	98	0	67	647	0
3:30 PM	0	0	210	42	0	45	169	0	0	0	0	0	0	104	0	74	644	0
3:45 PM	0	0	234	40	0	44	169	0	0	0	0	0	0	131	0	87	705	2,599
4:00 PM	0	0	219	42	0	45	158	0	0	0	0	0	0	102	0	73	639	2,635
4:15 PM	0	0	248	51	0	36	169	0	0	0	0	0	0	108	0	68	680	2,668
4:30 PM	0	0	232	42	0	45	170	0	0	0	0	0	0	104	0	85	678	2,702
4:45 PM	**0**	**0**	**240**	**37**	**0**	**49**	**206**	**0**	**0**	**0**	**0**	**0**	**0**	**132**	**0**	**86**	**750**	2,747
5:00 PM	**0**	**0**	**244**	**38**	**0**	**50**	**212**	**0**	**0**	**0**	**0**	**0**	**0**	**133**	**0**	**83**	**760**	2,868
5:15 PM	**0**	**0**	**256**	**38**	**0**	**43**	**189**	**0**	**0**	**0**	**0**	**0**	**0**	**127**	**0**	**102**	**755**	2,943
5:30 PM	**0**	**0**	**239**	**36**	**0**	**48**	**195**	**0**	**0**	**0**	**0**	**0**	**0**	**134**	**0**	**76**	**728**	**2,993**
5:45 PM	0	0	217	37	0	52	173	0	0	0	0	0	0	106	0	76	661	2,904
Count Total	0	0	2,773	488	0	548	2,133	0	0	0	0	0	0	1,377	0	931	8,250	0
Peak Hour	**0**	**0**	**979**	**149**	**0**	**190**	**802**	**0**	**0**	**0**	**0**	**0**	**0**	**526**	**0**	**347**	**2,993**	**0**

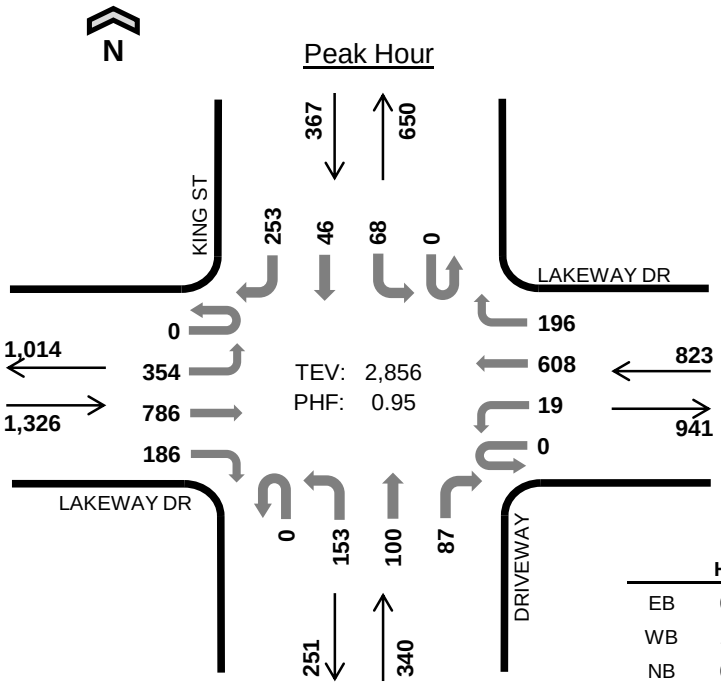
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

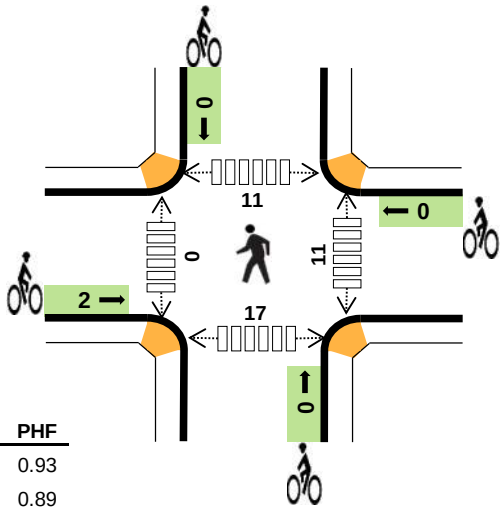
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:00 PM	7	6	0	0	*13*	0	0	0	0	*0*	0	0	3	10	*13*
3:15 PM	2	4	0	3	*9*	0	0	0	0	*0*	0	1	0	10	*11*
3:30 PM	5	5	0	2	*12*	1	0	0	0	*1*	0	0	1	13	*14*
3:45 PM	4	2	0	4	*10*	2	0	0	0	*2*	0	2	1	11	*14*
4:00 PM	4	2	0	1	*7*	0	2	0	0	*2*	0	0	7	9	*16*
4:15 PM	5	7	0	0	*12*	1	2	0	0	*3*	0	9	4	15	*28*
4:30 PM	3	6	0	3	*12*	1	4	0	0	*5*	0	3	5	13	*21*
4:45 PM	**3**	**4**	**0**	**3**	***10***	**1**	**0**	**0**	**0**	***1***	**0**	**3**	**3**	**9**	*15*
5:00 PM	**6**	**4**	**0**	**1**	***11***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**7**	*10*
5:15 PM	**4**	**2**	**0**	**2**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**3**	**11**	*14*
5:30 PM	**0**	**4**	**0**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**12**	***14***
5:45 PM	3	3	0	0	*6*	0	1	0	0	*1*	0	0	5	16	*21*
Count Total	46	49	0	20	*115*	6	9	0	0	*15*	1	18	36	136	*191*
Peak Hour	**13**	**14**	**0**	**7**	***34***	**1**	**0**	**0**	**0**	***1***	**1**	**3**	**10**	**39**	***53***

Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

KING ST
LAKEWAY DR

Date: Thu, Mar 17, 2016
Count Period: 3:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.9%	0.93
WB	1.6%	0.89
NB	0.0%	0.92
SB	1.1%	0.83
TOTAL	1.0%	0.95

Three-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				DRIVEWAY Northbound				KING ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:45 PM	0	89	186	57	0	1	140	50	0	44	22	21	0	15	14	62	701	0
5:00 PM	0	87	189	47	0	4	165	60	0	35	30	23	0	18	12	81	751	0
5:15 PM	0	94	220	44	0	11	174	47	0	34	20	19	0	18	11	47	739	0
5:30 PM	0	84	191	38	0	3	129	39	0	40	28	24	0	17	9	63	665	2,856
Peak Hour	**0**	**354**	**786**	**186**	**0**	**19**	**608**	**196**	**0**	**153**	**100**	**87**	**0**	**68**	**46**	**253**	**2,856**	**0**

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:45 PM	4	4	0	0	*8*	2	0	0	0	*2*	2	0	1	6	*9*
5:00 PM	3	2	0	3	*8*	0	0	0	0	*0*	3	0	3	3	*9*
5:15 PM	4	2	0	0	*6*	0	0	0	0	*0*	5	0	5	3	*13*
5:30 PM	1	5	0	1	*7*	0	0	0	0	*0*	1	0	2	5	*8*
Peak Hour	**12**	**13**	**0**	**4**	*29*	**2**	**0**	**0**	**0**	*2*	**11**	**0**	**11**	**17**	*39*

Three-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				DRIVEWAY Northbound				KING ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	76	149	64	0	5	114	52	0	37	14	12	0	14	14	43	594	0
3:15 PM	0	87	144	56	0	6	127	43	0	56	30	20	0	14	9	46	638	0
3:30 PM	0	66	162	63	0	7	132	70	0	37	30	13	0	14	12	42	648	0
3:45 PM	0	99	179	55	0	3	144	39	0	49	30	30	0	9	12	42	691	2,571
4:00 PM	0	86	159	54	0	3	114	63	0	31	35	18	0	9	12	44	628	2,605
4:15 PM	0	80	177	55	0	4	136	48	0	33	22	21	0	9	17	44	646	2,613
4:30 PM	0	89	169	39	0	6	129	56	0	43	22	24	0	16	14	49	656	2,621
4:45 PM	**0**	**89**	**186**	**57**	**0**	**1**	**140**	**50**	**0**	**44**	**22**	**21**	**0**	**15**	**14**	**62**	**701**	2,631
5:00 PM	**0**	**87**	**189**	**47**	**0**	**4**	**165**	**60**	**0**	**35**	**30**	**23**	**0**	**18**	**12**	**81**	**751**	2,754
5:15 PM	**0**	**94**	**220**	**44**	**0**	**11**	**174**	**47**	**0**	**34**	**20**	**19**	**0**	**18**	**11**	**47**	**739**	2,847
5:30 PM	**0**	**84**	**191**	**38**	**0**	**3**	**129**	**39**	**0**	**40**	**28**	**24**	**0**	**17**	**9**	**63**	**665**	**2,856**
5:45 PM	0	72	169	53	0	8	155	49	0	24	30	23	0	18	15	50	666	2,821
Count Total	0	1,009	2,094	625	0	61	1,659	616	0	463	313	248	0	171	151	613	8,023	0
Peak Hour	**0**	**354**	**786**	**186**	**0**	**19**	**608**	**196**	**0**	**153**	**100**	**87**	**0**	**68**	**46**	**253**	**2,856**	**0**

Note: Three-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
3:00 PM	4	6	1	0	*11*	2	0	0	0	*2*	0	0	6	0	*6*
3:15 PM	5	3	1	0	*9*	1	1	1	1	*4*	0	0	1	3	*4*
3:30 PM	5	4	0	3	*12*	0	1	0	0	*1*	1	0	5	10	*16*
3:45 PM	4	2	0	0	*6*	1	0	0	0	*1*	0	0	0	2	*2*
4:00 PM	3	3	0	2	*8*	1	5	0	0	*6*	5	0	5	2	*12*
4:15 PM	3	4	0	3	*10*	3	1	0	0	*4*	0	0	0	1	*1*
4:30 PM	4	7	0	3	*14*	1	3	0	0	*4*	0	0	3	3	*6*
4:45 PM	**4**	**4**	**0**	**0**	***8***	**2**	**0**	**0**	**0**	***2***	**2**	**0**	**1**	**6**	*9*
5:00 PM	**3**	**2**	**0**	**3**	***8***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**3**	**3**	*9*
5:15 PM	**4**	**2**	**0**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**5**	**0**	**5**	**3**	*13*
5:30 PM	**1**	**5**	**0**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**5**	***8***
5:45 PM	2	3	0	1	*6*	0	1	0	0	*1*	4	0	2	1	*7*
Count Total	42	45	2	16	*105*	11	12	1	1	*25*	21	0	33	39	*93*
Peak Hour	**12**	**13**	**0**	**4**	***29***	**2**	**0**	**0**	**0**	***2***	**11**	**0**	**11**	**17**	***39***

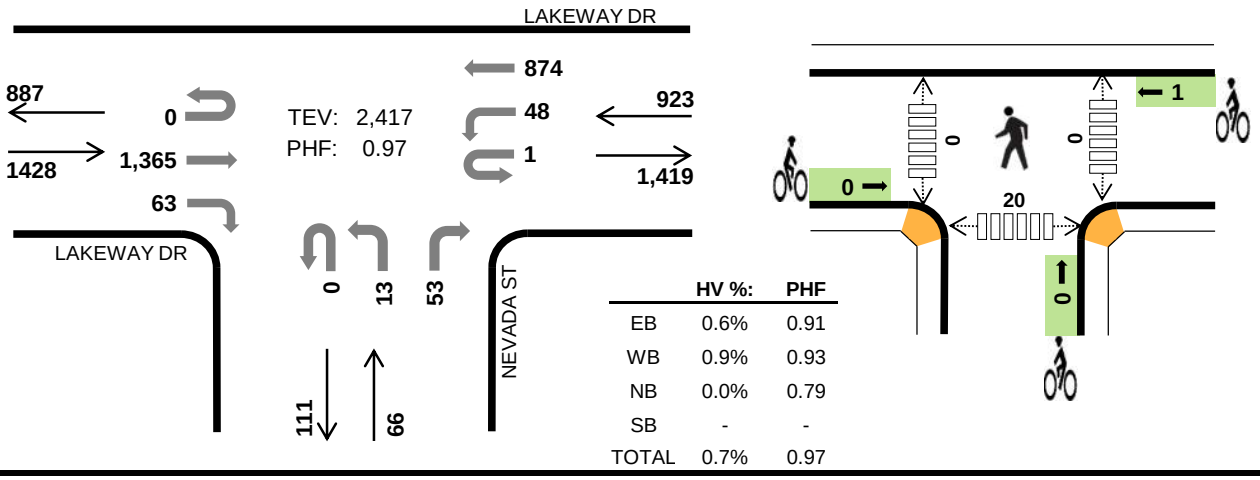
Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

NEVADA ST
LAKEWAY DR

N

Peak Hour

Date: Wed, Jun 05, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



Two-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				NEVADA ST Northbound				0 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	266	15	0	10	216	0	0	2	0	10	0	0	0	0	519	0
4:15 PM	0	0	283	10	0	10	216	0	0	4	0	16	0	0	0	0	539	0
4:30 PM	0	0	303	13	0	9	215	0	0	3	0	10	0	0	0	0	553	0
4:45 PM	0	0	305	7	0	11	204	0	0	7	0	20	0	0	0	0	554	2,165
5:00 PM	**0**	**0**	**308**	**17**	**1**	**6**	**213**	**0**	**0**	**4**	**0**	**11**	**0**	**0**	**0**	**0**	**560**	2,206
5:15 PM	**0**	**0**	**345**	**10**	**0**	**15**	**229**	**0**	**0**	**3**	**0**	**7**	**0**	**0**	**0**	**0**	**609**	2,276
5:30 PM	**0**	**0**	**374**	**17**	**0**	**14**	**197**	**0**	**0**	**3**	**0**	**18**	**0**	**0**	**0**	**0**	**623**	2,346
5:45 PM	**0**	**0**	**338**	**19**	**0**	**13**	**235**	**0**	**0**	**3**	**0**	**17**	**0**	**0**	**0**	**0**	**625**	**2,417**
Count Total	0	0	2,522	108	1	88	1,725	0	0	29	0	109	0	0	0	0	4,582	0
Peak Hour	**0**	**0**	**1,365**	**63**	**1**	**48**	**874**	**0**	**0**	**13**	**0**	**53**	**0**	**0**	**0**	**0**	**2,417**	**0**

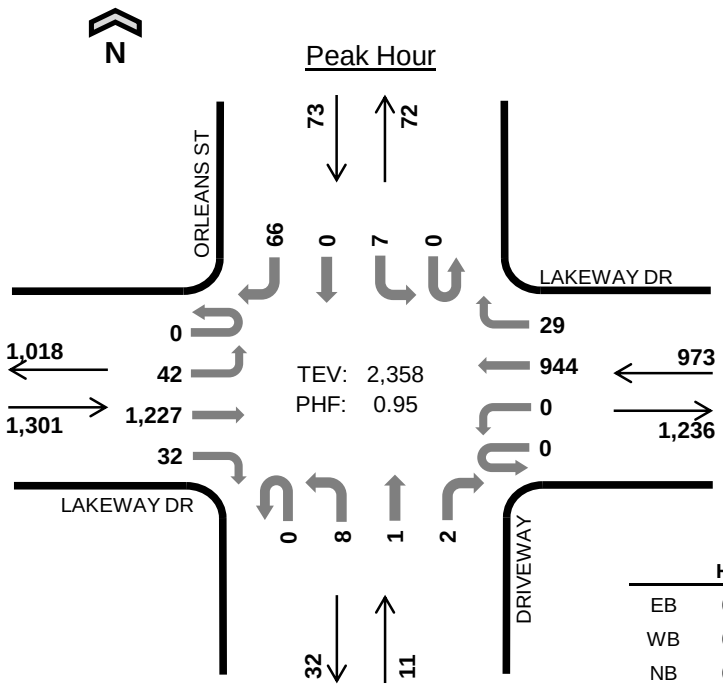
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	4	8	0	0	*12*	1	0	0	0	*1*	0	0	0	1	*1*
4:15 PM	6	9	1	0	*16*	0	0	0	0	*0*	0	0	2	2	*4*
4:30 PM	2	8	0	0	*10*	0	0	0	0	*0*	0	0	1	4	*5*
4:45 PM	1	3	0	0	*4*	1	1	0	0	*2*	0	0	0	2	*2*
5:00 PM	**3**	**2**	**0**	**0**	***5***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**6**	*6*
5:15 PM	**2**	**1**	**0**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**3**	*4*
5:30 PM	**1**	**3**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**8**	*8*
5:45 PM	**2**	**2**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**3**	***3***
Count Total	21	36	1	0	*58*	2	2	0	0	*4*	0	0	4	29	*33*
Peak Hr	**8**	**8**	**0**	**0**	***16***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**1**	**20**	***21***

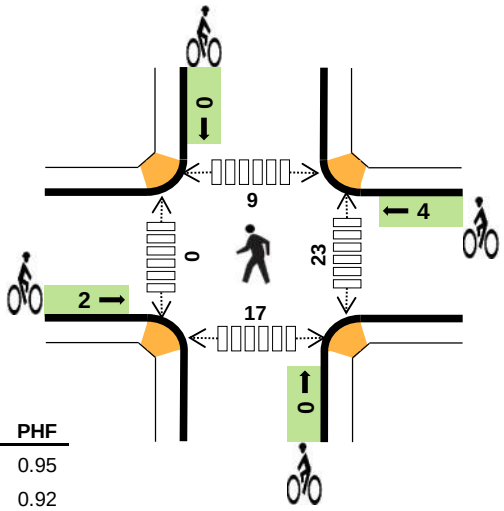
Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

ORLEANS ST
LAKEWAY DR

Date: Thu, Mar 17, 2016
Count Period: 3:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.8%	0.95
WB	0.9%	0.92
NB	0.0%	0.34
SB	1.4%	0.48
TOTAL	0.9%	0.95



Three-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				DRIVEWAY Northbound				ORLEANS ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:00 PM	0	10	278	5	0	0	259	5	0	5	1	2	0	0	0	17	582	0
5:15 PM	0	6	322	7	0	0	230	5	0	1	0	0	0	3	0	5	579	0
5:30 PM	0	13	322	9	0	0	211	8	0	1	0	0	0	0	0	10	574	0
5:45 PM	0	13	305	11	0	0	244	11	0	1	0	0	0	4	0	34	623	2,358
Peak Hour	0	42	1,227	32	0	0	944	29	0	8	1	2	0	7	0	66	2,358	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:00 PM	3	1	0	0	*4*	0	0	0	0	*0*	8	0	5	7	*20*
5:15 PM	3	2	0	0	*5*	0	1	0	0	*1*	6	0	2	2	*10*
5:30 PM	2	4	0	0	*6*	2	2	0	0	*4*	5	0	2	4	*11*
5:45 PM	3	2	0	1	*6*	0	1	0	0	*1*	4	0	0	4	*8*
Peak Hour	11	9	0	1	*21*	2	4	0	0	*6*	23	0	9	17	*49*

Three-Hour Count Summaries

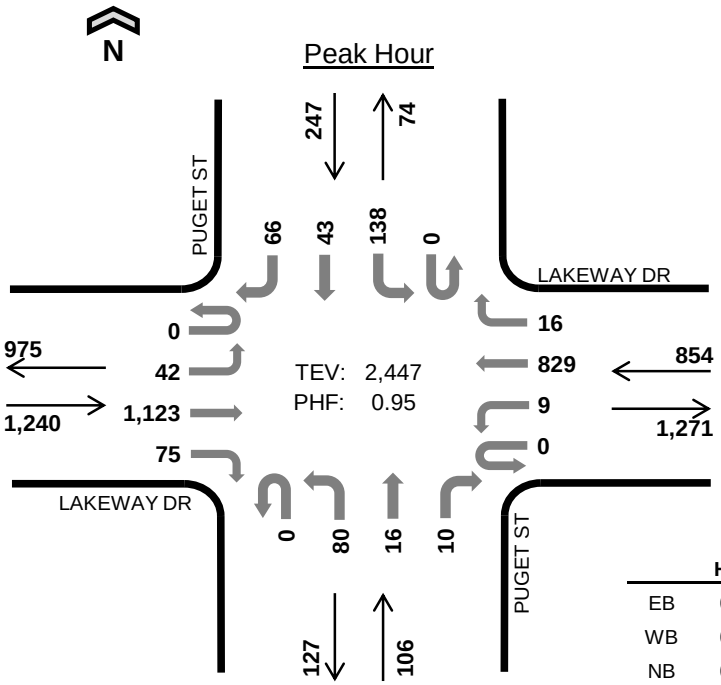
Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				DRIVEWAY Northbound				ORLEANS ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	7	225	8	0	0	171	2	0	4	1	0	0	1	3	6	428	0
3:15 PM	0	7	209	7	0	0	217	3	0	2	2	1	0	2	0	5	455	0
3:30 PM	0	9	220	3	0	0	208	5	0	0	1	1	0	1	0	3	451	0
3:45 PM	0	9	258	8	0	0	213	5	0	0	1	0	0	0	0	8	502	1,836
4:00 PM	0	14	238	10	0	0	220	8	0	4	0	2	0	1	0	9	506	1,914
4:15 PM	0	10	246	7	0	0	228	7	0	5	0	1	0	1	0	9	514	1,973
4:30 PM	0	10	290	11	0	0	227	20	0	3	0	0	0	1	0	5	567	2,089
4:45 PM	0	14	286	9	0	0	216	12	0	1	0	1	0	1	1	14	555	2,142
5:00 PM	**0**	**10**	**278**	**5**	**0**	**0**	**259**	**5**	**0**	**5**	**1**	**2**	**0**	**0**	**0**	**17**	**582**	2,218
5:15 PM	**0**	**6**	**322**	**7**	**0**	**0**	**230**	**5**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**5**	**579**	2,283
5:30 PM	**0**	**13**	**322**	**9**	**0**	**0**	**211**	**8**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**10**	**574**	2,290
5:45 PM	**0**	**13**	**305**	**11**	**0**	**0**	**244**	**11**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**34**	**623**	**2,358**
Count Total	0	122	3,199	95	0	0	2,644	91	0	27	6	8	0	15	4	125	6,336	0
Peak Hour	**0**	**42**	**1,227**	**32**	**0**	**0**	**944**	**29**	**0**	**8**	**1**	**2**	**0**	**7**	**0**	**66**	**2,358**	**0**

Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

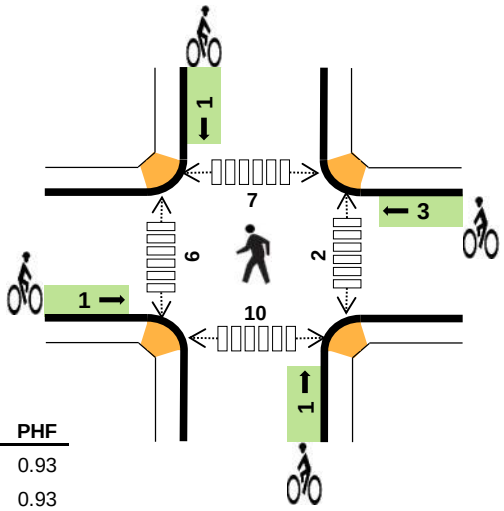
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:00 PM	5	4	0	0	*9*	0	0	0	0	*0*	2	0	1	4	*7*
3:15 PM	4	6	0	0	*10*	0	0	0	0	*0*	3	0	3	3	*9*
3:30 PM	5	3	0	0	*8*	0	0	0	0	*0*	1	0	0	3	*4*
3:45 PM	4	3	0	0	*7*	0	1	0	0	*1*	5	0	1	6	*12*
4:00 PM	1	1	0	1	*3*	1	1	0	0	*2*	6	0	1	6	*13*
4:15 PM	3	4	0	0	*7*	2	2	1	0	*5*	9	0	2	10	*21*
4:30 PM	3	10	0	0	*13*	1	0	0	0	*1*	3	0	4	6	*13*
4:45 PM	1	4	0	2	*7*	2	0	0	0	*2*	3	0	3	4	*10*
5:00 PM	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**0**	**0**	***0***	**8**	**0**	**5**	**7**	*20*
5:15 PM	**3**	**2**	**0**	**0**	***5***	**0**	**1**	**0**	**0**	***1***	**6**	**0**	**2**	**2**	*10*
5:30 PM	**2**	**4**	**0**	**0**	***6***	**2**	**2**	**0**	**0**	***4***	**5**	**0**	**2**	**4**	*11*
5:45 PM	**3**	**2**	**0**	**1**	***6***	**0**	**1**	**0**	**0**	***1***	**4**	**0**	**0**	**4**	***8***
Count Total	37	44	0	4	*85*	8	8	1	0	*17*	55	0	24	59	*138*
Peak Hour	**11**	**9**	**0**	**1**	***21***	**2**	**4**	**0**	**0**	***6***	**23**	**0**	**9**	**17**	***49***

PUGET ST
LAKEWAY DR

Date: Thu, Mar 17, 2016
Count Period: 3:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	0.8%	0.93
WB	0.9%	0.93
NB	0.0%	0.88
SB	0.4%	0.95
TOTAL	0.8%	0.95



Three-Hour Count Summaries

Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				PUGET ST Northbound				PUGET ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
5:00 PM	0	7	260	12	0	2	204	2	0	20	5	3	0	40	5	20	580	0
5:15 PM	0	7	299	29	0	2	221	6	0	21	2	3	0	35	16	6	647	0
5:30 PM	0	15	292	17	0	2	189	5	0	17	2	3	0	32	13	19	606	0
5:45 PM	0	13	272	17	0	3	215	3	0	22	7	1	0	31	9	21	614	2,447
Peak Hour	**0**	**42**	**1,123**	**75**	**0**	**9**	**829**	**16**	**0**	**80**	**16**	**10**	**0**	**138**	**43**	**66**	**2,447**	**0**

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
5:00 PM	3	1	0	0	*4*	0	0	1	0	*1*	0	2	2	3	*7*
5:15 PM	3	2	0	0	*5*	0	1	0	1	*2*	0	3	1	3	*7*
5:30 PM	1	3	0	1	*5*	1	1	0	0	*2*	0	0	4	0	*4*
5:45 PM	3	2	0	0	*5*	0	1	0	0	*1*	2	1	0	4	*7*
Peak Hour	**10**	**8**	**0**	**1**	***19***	**1**	**3**	**1**	**1**	***6***	**2**	**6**	**7**	**10**	***25***

Three-Hour Count Summaries

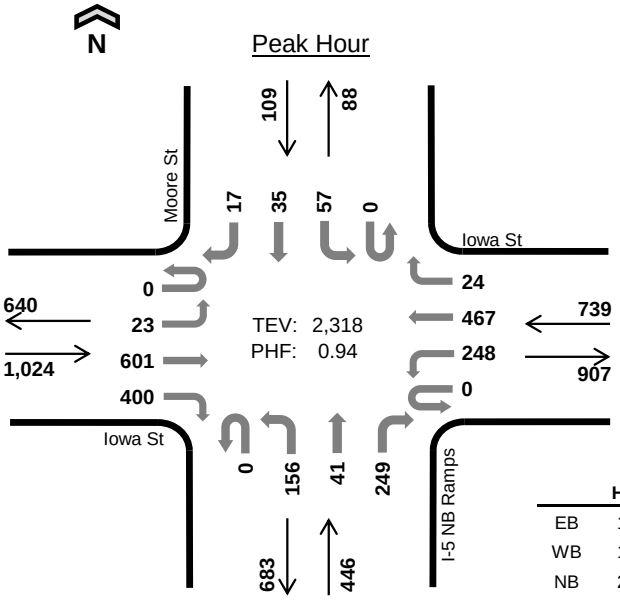
Interval Start	LAKEWAY DR Eastbound				LAKEWAY DR Westbound				PUGET ST Northbound				PUGET ST Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:00 PM	0	7	217	12	0	1	161	5	0	9	1	0	0	15	8	5	441	0
3:15 PM	0	12	194	11	0	0	200	8	0	11	4	2	0	11	5	6	464	0
3:30 PM	0	11	200	12	0	0	181	9	0	13	1	6	0	10	6	9	458	0
3:45 PM	0	14	224	12	0	2	180	11	0	20	3	3	0	13	6	3	491	1,854
4:00 PM	0	9	227	19	0	5	220	5	0	18	2	4	0	18	12	11	550	1,963
4:15 PM	0	11	208	13	0	1	203	4	0	17	4	2	0	12	9	10	494	1,993
4:30 PM	0	6	258	13	0	4	209	1	0	17	6	1	0	27	8	12	562	2,097
4:45 PM	0	9	277	26	0	3	222	9	0	10	3	1	0	20	11	10	601	2,207
5:00 PM	**0**	**7**	**260**	**12**	**0**	**2**	**204**	**2**	**0**	**20**	**5**	**3**	**0**	**40**	**5**	**20**	**580**	2,237
5:15 PM	**0**	**7**	**299**	**29**	**0**	**2**	**221**	**6**	**0**	**21**	**2**	**3**	**0**	**35**	**16**	**6**	**647**	2,390
5:30 PM	**0**	**15**	**292**	**17**	**0**	**2**	**189**	**5**	**0**	**17**	**2**	**3**	**0**	**32**	**13**	**19**	**606**	2,434
5:45 PM	**0**	**13**	**272**	**17**	**0**	**3**	**215**	**3**	**0**	**22**	**7**	**1**	**0**	**31**	**9**	**21**	**614**	**2,447**
Count Total	0	121	2,928	193	0	25	2,405	68	0	195	40	29	0	264	108	132	6,508	0
Peak Hour	**0**	**42**	**1,123**	**75**	**0**	**9**	**829**	**16**	**0**	**80**	**16**	**10**	**0**	**138**	**43**	**66**	**2,447**	**0**

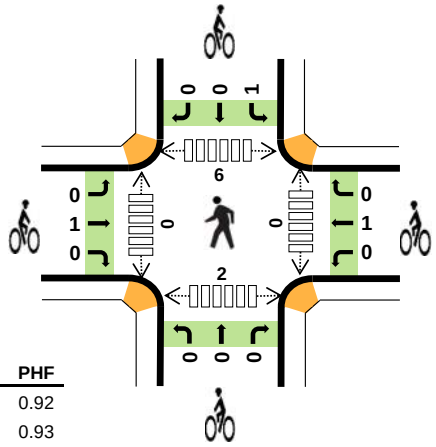
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:00 PM	4	5	0	0	*9*	0	0	1	0	*1*	2	0	1	1	*4*
3:15 PM	6	6	0	1	*13*	0	0	0	0	*0*	0	0	4	3	*7*
3:30 PM	5	3	0	1	*9*	1	0	0	0	*1*	0	1	0	0	*1*
3:45 PM	4	6	0	1	*11*	0	0	0	1	*1*	0	0	0	2	*2*
4:00 PM	1	0	1	0	*2*	1	2	0	0	*3*	3	2	2	2	*9*
4:15 PM	3	4	0	0	*7*	2	1	1	0	*4*	2	2	0	1	*5*
4:30 PM	2	8	1	0	*11*	1	0	0	0	*1*	0	1	3	4	*8*
4:45 PM	2	5	1	2	*10*	1	0	0	0	*1*	0	2	2	0	*4*
5:00 PM	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**1**	**0**	***1***	**0**	**2**	**2**	**3**	*7*
5:15 PM	**3**	**2**	**0**	**0**	***5***	**0**	**1**	**0**	**1**	***2***	**0**	**3**	**1**	**3**	*7*
5:30 PM	**1**	**3**	**0**	**1**	***5***	**1**	**1**	**0**	**0**	***2***	**0**	**0**	**4**	**0**	*4*
5:45 PM	**3**	**2**	**0**	**0**	***5***	**0**	**1**	**0**	**0**	***1***	**2**	**1**	**0**	**4**	***7***
Count Total	37	45	3	6	*91*	7	6	3	2	*18*	9	14	19	23	*65*
Peak Hour	**10**	**8**	**0**	**1**	***19***	**1**	**3**	**1**	**1**	***6***	**2**	**6**	**7**	**10**	***25***

Moore St
Iowa St

Date: 10/15/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	1.0%	0.92
WB	1.1%	0.93
NB	2.5%	0.92
SB	1.8%	0.85
TOTAL	1.3%	0.94

Three-Hour Count Summaries

Interval Start		Iowa St Eastbound				Iowa St Westbound				I-5 NB Ramps Northbound				Moore St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	5	145	102	0	68	121	9	0	47	11	61	0	16	11	5	601	0
4:45 PM		0	10	156	82	0	56	114	7	0	24	8	62	0	17	7	6	549	0
5:00 PM		0	5	143	129	0	59	126	4	0	46	13	62	0	13	11	3	614	0
5:15 PM		0	3	157	87	0	65	106	4	0	39	9	64	0	11	6	3	554	2,318
Peak Hour	All	0	23	601	400	0	248	467	24	0	156	41	249	0	57	35	17	2,318	0
	HV	0	0	7	3	0	3	4	1	0	4	0	7	0	0	2	0	31	0
	HV%	-	0%	1%	1%	-	1%	1%	4%	-	3%	0%	3%	-	0%	6%	0%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	5	3	5	1	*14*	0	0	0	0	*0*	0	0	4	0	*4*
4:45 PM	2	3	2	1	*8*	0	0	0	0	*0*	0	0	2	1	*3*
5:00 PM	2	0	3	0	*5*	0	1	0	1	*2*	0	0	0	1	*1*
5:15 PM	1	2	1	0	*4*	1	0	0	0	*1*	0	0	0	0	*0*
Peak Hour	10	8	11	2	*31*	1	1	0	1	*3*	0	0	6	2	*8*

Three-Hour Count Summaries

Interval Start	Iowa St Eastbound				Iowa St Westbound				I-5 NB Ramps Northbound				Moore St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	4	128	66	0	49	115	5	0	31	6	51	0	10	17	3	485	0
3:45 PM	1	5	133	69	0	65	129	8	0	49	10	39	1	6	10	4	529	0
4:00 PM	0	3	144	93	0	68	125	12	0	35	11	54	0	15	16	1	577	0
4:15 PM	0	4	157	87	0	42	119	7	0	37	11	47	0	12	4	9	536	2,127
4:30 PM	**0**	**5**	**145**	**102**	**0**	**68**	**121**	**9**	**0**	**47**	**11**	**61**	**0**	**16**	**11**	**5**	**601**	2,243
4:45 PM	**0**	**10**	**156**	**82**	**0**	**56**	**114**	**7**	**0**	**24**	**8**	**62**	**0**	**17**	**7**	**6**	**549**	2,263
5:00 PM	**0**	**5**	**143**	**129**	**0**	**59**	**126**	**4**	**0**	**46**	**13**	**62**	**0**	**13**	**11**	**3**	**614**	2,300
5:15 PM	**0**	**3**	**157**	**87**	**0**	**65**	**106**	**4**	**0**	**39**	**9**	**64**	**0**	**11**	**6**	**3**	**554**	**2,318**
5:30 PM	0	2	136	66	0	66	90	8	0	27	7	52	0	10	7	5	476	2,193
5:45 PM	0	9	115	72	0	43	83	8	0	20	11	52	0	11	4	5	433	2,077
6:00 PM	0	1	101	73	0	42	74	2	0	25	7	44	0	9	11	1	390	1,853
6:15 PM	0	1	71	50	0	31	53	6	0	15	5	37	0	8	2	0	279	1,578
Count Total	1	52	1,586	976	0	654	1,255	80	0	395	109	625	1	138	106	45	6,023	0
Peak Hour All	**0**	**23**	**601**	**400**	**0**	**248**	**467**	**24**	**0**	**156**	**41**	**249**	**0**	**57**	**35**	**17**	**2,318**	**0**
Peak Hour HV	**0**	**0**	**7**	**3**	**0**	**3**	**4**	**1**	**0**	**4**	**0**	**7**	**0**	**0**	**2**	**0**	**31**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**1%**	**-**	**1%**	**1%**	**4%**	**-**	**3%**	**0%**	**3%**	**-**	**0%**	**6%**	**0%**	**1%**	**0**

Note: Three-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
3:30 PM	1	6	1	1	*9*	0	0	0	0	*0*	1	0	2	0	*3*
3:45 PM	4	2	2	1	*9*	0	1	0	0	*1*	0	0	3	1	*4*
4:00 PM	4	2	3	1	*10*	0	1	0	0	*1*	1	0	1	1	*3*
4:15 PM	4	0	6	0	*10*	1	0	0	0	*1*	0	0	2	4	*6*
4:30 PM	**5**	**3**	**5**	**1**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**4**	**0**	*4*
4:45 PM	**2**	**3**	**2**	**1**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**1**	*3*
5:00 PM	**2**	**0**	**3**	**0**	***5***	**0**	**1**	**0**	**1**	***2***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**1**	**2**	**1**	**0**	***4***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	1	0	0	*1*	0	0	0	1	*1*	0	0	0	0	*0*
5:45 PM	2	1	1	0	*4*	0	0	0	0	*0*	0	0	0	1	*1*
6:00 PM	1	1	0	0	*2*	1	0	0	0	*1*	0	0	0	0	*0*
6:15 PM	5	0	1	0	*6*	1	0	0	0	*1*	0	0	1	0	*1*
Count Total	31	21	25	5	*82*	4	3	0	2	*9*	2	0	15	9	*26*
Peak Hour	**10**	**8**	**11**	**2**	***31***	**1**	**1**	**0**	**1**	***3***	**0**	**0**	**6**	**2**	***8***

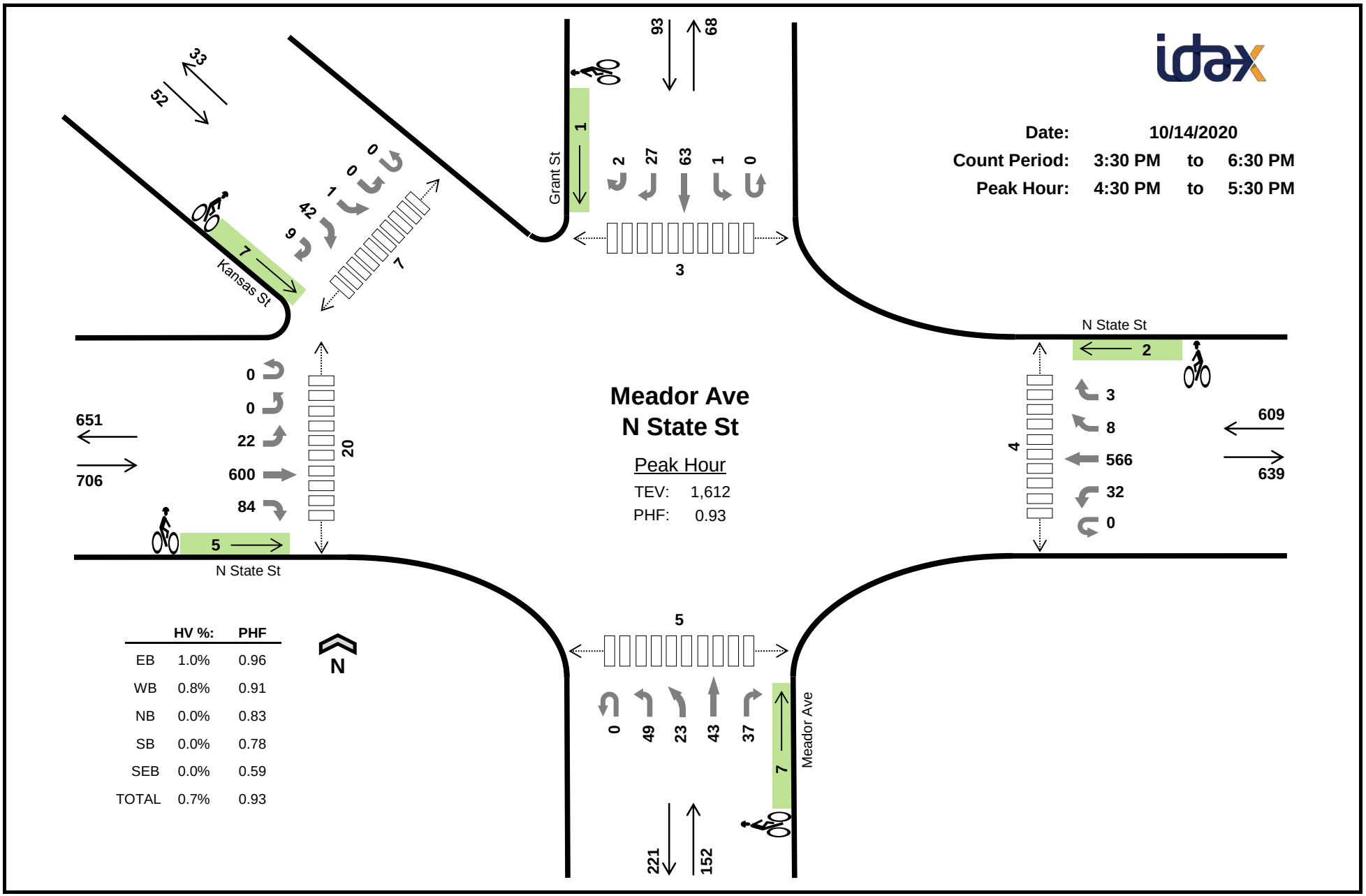
Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Iowa St Eastbound				Iowa St Westbound				I-5 NB Ramps Northbound				Moore St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	0	0	1	0	1	4	1	0	0	1	0	0	1	0	0	9	0
3:45 PM	0	0	2	2	0	0	2	0	0	1	0	1	0	0	0	1	9	0
4:00 PM	0	0	3	1	0	0	2	0	0	1	0	2	0	1	0	0	10	0
4:15 PM	0	0	3	1	0	0	0	0	0	2	2	2	0	0	0	0	10	38
4:30 PM	**0**	**0**	**3**	**2**	**0**	**1**	**2**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**1**	**0**	**14**	43
4:45 PM	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**8**	42
5:00 PM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**5**	37
5:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**31**
5:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	18
5:45 PM	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	4	14
6:00 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2	11
6:15 PM	0	0	0	5	0	0	0	0	0	0	0	1	0	0	0	0	6	13
Count Total	0	0	15	16	0	5	14	2	0	9	3	13	0	2	2	1	82	0
Peak Hour	**0**	**0**	**7**	**3**	**0**	**3**	**4**	**1**	**0**	**4**	**0**	**7**	**0**	**0**	**2**	**0**	**31**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	Iowa St Eastbound			Iowa St Westbound			I-5 NB Ramps Northbound			Moore St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	3
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	3
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
6:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	3
Count Total	0	4	0	0	2	1	0	0	0	1	0	1	9	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**

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


Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:30 PM to 5:30 PM
Meador Ave
N State St
Peak Hour
TEV: 1,612
PHF: 0.93
Grant St
Kansas St
N State St
Meador Ave
N State St
93
68
33
52
2 27 63 1 0
3
0 0 1 42 9
7
1
7
0 0 22 600 84
20
651
706
5
N State St
2
3 8 566 32 0
4
609
639
5
0 49 23 43 37
7
221
152
N
HV %: PHF
EB 1.0% 0.96
WB 0.8% 0.91
NB 0.0% 0.83
SB 0.0% 0.78
SEB 0.0% 0.59
TOTAL 0.7% 0.93

Three-Hour Count Summaries

Interval Start	N State St Eastbound					N State St Westbound					Meador Ave Northbound					Grant St Southbound					Kansas St Southeastbound					15-min Total	Rolling One Hour
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
3:30 PM	0	0	3	124	10	0	4	151	0	2	0	12	5	9	8	0	0	36	7	0	0	0	0	0	4	375	0
3:45 PM	0	1	11	157	10	0	9	114	0	2	0	13	12	9	11	0	0	15	5	0	0	0	0	0	2	371	0
4:00 PM	0	1	13	116	10	0	9	129	1	0	0	24	6	11	11	0	0	47	5	2	0	2	0	0	2	389	0
4:15 PM	0	0	11	131	7	0	5	135	6	0	0	21	2	10	19	0	0	34	6	0	0	0	1	1	0	389	1,524
4:30 PM	**0**	**0**	**6**	**152**	**22**	**0**	**5**	**127**	**1**	**1**	**0**	**9**	**2**	**10**	**8**	**0**	**0**	**19**	**8**	**1**	**0**	**0**	**0**	**3**	**4**	**378**	1,527
4:45 PM	**0**	**0**	**5**	**141**	**15**	**0**	**9**	**158**	**0**	**1**	**0**	**15**	**7**	**10**	**13**	**0**	**0**	**12**	**2**	**1**	**0**	**0**	**0**	**18**	**1**	**408**	1,564
5:00 PM	**0**	**0**	**5**	**159**	**17**	**0**	**8**	**140**	**4**	**1**	**0**	**15**	**7**	**15**	**9**	**0**	**0**	**22**	**8**	**0**	**0**	**0**	**0**	**20**	**2**	**432**	1,607
5:15 PM	**0**	**0**	**6**	**148**	**30**	**0**	**10**	**141**	**3**	**0**	**0**	**10**	**7**	**8**	**7**	**0**	**1**	**10**	**9**	**0**	**0**	**0**	**1**	**1**	**2**	**394**	**1,612**
5:30 PM	0	0	5	136	10	0	9	119	2	0	0	11	10	11	8	0	0	16	7	1	0	0	0	6	0	351	1,585
5:45 PM	0	1	4	134	12	0	2	122	0	0	0	10	6	7	6	0	0	7	5	1	0	0	0	0	1	318	1,495
6:00 PM	0	0	4	123	12	0	4	102	2	1	0	7	3	10	6	0	0	6	5	0	0	0	0	33	2	320	1,383
6:15 PM	0	2	7	84	6	0	6	122	0	0	0	8	8	11	5	0	0	13	1	0	0	0	0	12	0	285	1,274
Count Total	0	5	80	1,605	161	0	80	1,560	19	8	0	155	75	121	111	0	1	237	68	6	0	2	2	94	20	4,410	0
Peak Hour All	**0**	**0**	**22**	**600**	**84**	**0**	**32**	**566**	**8**	**3**	**0**	**49**	**23**	**43**	**37**	**0**	**1**	**63**	**27**	**2**	**0**	**0**	**1**	**42**	**9**	**1,612**	**0**
Peak Hour HV	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**0**
Peak Hour HV%	**-**	**-**	**5%**	**1%**	**0%**	**-**	**0%**	**1%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**-**	**0%**	**0%**	**0%**	**0%**	**-**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Three-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	SEB	Total	EB	WB	NB	SB	SEB	Total	East	West	North	South	Northwest	Total
3:30 PM	4	2	0	2	0	*8*	0	1	0	3	0	*4*	1	0	1	2	0	*4*
3:45 PM	1	1	3	0	0	*5*	0	0	1	1	0	*2*	1	2	0	2	2	*7*
4:00 PM	7	2	1	1	0	*11*	0	0	2	5	0	*7*	1	2	0	3	1	*7*
4:15 PM	1	1	0	0	0	*2*	1	0	1	4	0	*6*	1	3	0	1	3	*8*
4:30 PM	**2**	**2**	**0**	**0**	**0**	***4***	**1**	**0**	**0**	**0**	**1**	***2***	**3**	**4**	**2**	**1**	**2**	***12***
4:45 PM	**3**	**1**	**0**	**0**	**0**	***4***	**2**	**1**	**2**	**0**	**3**	***8***	**0**	**5**	**0**	**0**	**0**	***5***
5:00 PM	**1**	**2**	**0**	**0**	**0**	***3***	**0**	**1**	**3**	**0**	**3**	***7***	**1**	**7**	**0**	**3**	**1**	***12***
5:15 PM	**1**	**0**	**0**	**0**	**0**	***1***	**2**	**0**	**2**	**1**	**0**	***5***	**0**	**4**	**1**	**1**	**4**	***10***
5:30 PM	6	1	0	0	0	*7*	1	0	3	0	1	*5*	0	1	1	4	1	*7*
5:45 PM	0	0	0	0	0	*0*	0	1	1	1	0	*3*	0	5	0	2	2	*9*
6:00 PM	4	1	1	0	0	*6*	1	0	1	0	5	*7*	0	4	0	2	3	*9*
6:15 PM	4	1	0	0	0	*5*	0	0	2	0	2	*4*	0	3	0	2	2	*7*
Count Total	34	14	5	3	0	*56*	8	4	18	15	15	*60*	8	40	5	23	21	*97*
Peak Hr	**7**	**5**	**0**	**0**	**0**	***12***	**5**	**2**	**7**	**1**	**7**	***22***	**4**	**20**	**3**	**5**	**7**	*39*

Three-Hour Count Summaries - Heavy Vehicles

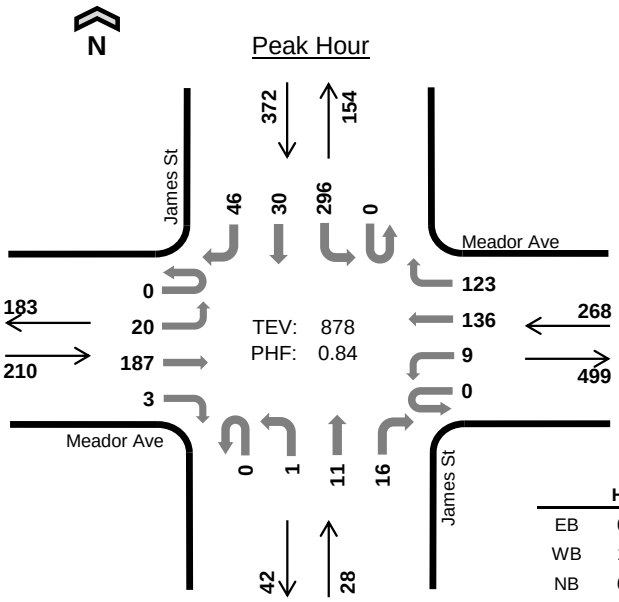
Interval Start	N State St					N State St					Meador Ave					Grant St					n/a					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southeastbound						
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
3:30 PM	0	0	0	3	1	0	0	2	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	8	0
3:45 PM	0	0	0	0	1	0	0	1	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	5	0
4:00 PM	0	0	1	4	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	11	0
4:15 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	26
4:30 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	22
4:45 PM	**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**	**4**	21
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	13
5:15 PM	**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**	**1**	**12**
5:30 PM	0	0	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	15
5:45 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	11
6:00 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	14
6:15 PM	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	18
Count Total	0	0	2	28	4	0	0	14	0	0	0	1	1	1	2	0	0	3	0	0	0	0	0	0	0	56	0
Peak Hour	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	12	**0**

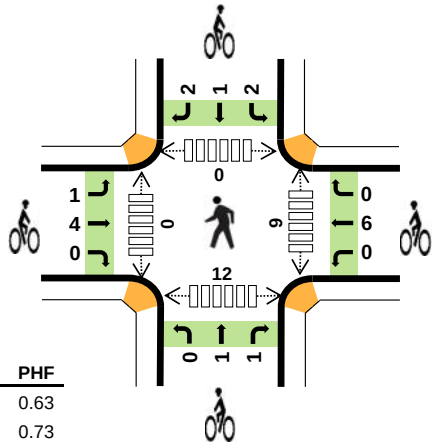
Three-Hour Count Summaries - Bikes

Interval Start	N State St					N State St					Meador Ave					Grant St					n/a					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Southeastbound						
	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	LT	BL	TH	RT	UT	LT	TH	RT	HR	UT	HL	BL	BR	HR		
3:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	5	0	0	0	0	0	0	0	7	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	0	0	0	0	6	19
4:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	17
4:45 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**8**	23
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**7**	23
5:15 PM	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**22**
5:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	5	25
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	3	20
6:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	7	20
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	4	19
Count Total	0	0	0	6	2	0	0	4	0	0	0	3	13	2	0	0	0	13	2	0	0	0	0	14	1	60	0
Peak Hour	**0**	**0**	**0**	**3**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	**1**	22	**0**

James St
Meador Ave

Date: 10/15/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	0.0%	0.63
WB	1.9%	0.73
NB	0.0%	0.64
SB	1.1%	0.85
TOTAL	1.0%	0.84

Three-Hour Count Summaries

Interval Start		Meador Ave Eastbound				Meador Ave Westbound				James St Northbound				James St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		0	5	28	1	0	1	32	24	0	0	2	5	0	67	7	9	181	0
4:30 PM		0	10	73	0	0	1	32	20	0	1	5	5	0	66	7	16	236	0
4:45 PM		0	2	36	0	0	2	29	35	0	0	2	4	0	72	9	10	201	0
5:00 PM		0	3	50	2	0	5	43	44	0	0	2	2	0	91	7	11	260	878
Peak Hour	All	0	20	187	3	0	9	136	123	0	1	11	16	0	296	30	46	878	0
	HV	0	0	0	0	0	0	2	3	0	0	0	0	0	3	1	0	9	0
	HV%	-	0%	0%	0%	-	0%	1%	2%	-	0%	0%	0%	-	1%	3%	0%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	2	0	0	*2*	0	1	2	2	*5*	3	0	0	3	*6*
4:30 PM	0	2	0	2	*4*	4	1	0	3	*8*	1	0	0	1	*2*
4:45 PM	0	1	0	1	*2*	1	1	0	0	*2*	1	0	0	2	*3*
5:00 PM	0	0	0	1	*1*	0	3	0	0	*3*	4	0	0	6	*10*
Peak Hour	0	5	0	4	*9*	5	6	2	5	*18*	9	0	0	12	*21*

Three-Hour Count Summaries

Interval Start	Meador Ave Eastbound				Meador Ave Westbound				James St Northbound				James St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	2	48	1	0	4	28	34	0	0	4	2	0	52	11	13	199	0
3:45 PM	0	4	29	1	0	1	41	29	0	1	4	0	0	61	5	14	190	0
4:00 PM	0	13	36	0	0	1	31	25	0	0	1	2	0	78	7	3	197	0
4:15 PM	**0**	**5**	**28**	**1**	**0**	**1**	**32**	**24**	**0**	**0**	**2**	**5**	**0**	**67**	**7**	**9**	**181**	767
4:30 PM	**0**	**10**	**73**	**0**	**0**	**1**	**32**	**20**	**0**	**1**	**5**	**5**	**0**	**66**	**7**	**16**	**236**	804
4:45 PM	**0**	**2**	**36**	**0**	**0**	**2**	**29**	**35**	**0**	**0**	**2**	**4**	**0**	**72**	**9**	**10**	**201**	815
5:00 PM	**0**	**3**	**50**	**2**	**0**	**5**	**43**	**44**	**0**	**0**	**2**	**2**	**0**	**91**	**7**	**11**	**260**	**878**
5:15 PM	0	4	28	1	0	2	32	23	0	1	0	6	0	69	2	9	177	874
5:30 PM	0	4	59	0	0	3	33	21	0	0	1	4	0	61	4	14	204	842
5:45 PM	0	11	40	0	0	1	31	22	0	1	3	2	0	54	9	11	185	826
6:00 PM	0	9	40	1	0	6	32	24	0	0	4	2	0	48	8	10	184	750
6:15 PM	0	0	29	0	0	3	30	28	0	2	2	7	0	37	4	4	146	719
Count Total	0	67	496	7	0	30	394	329	0	6	30	41	0	756	80	124	2,360	0
Peak Hour All	**0**	**20**	**187**	**3**	**0**	**9**	**136**	**123**	**0**	**1**	**11**	**16**	**0**	**296**	**30**	**46**	**878**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**9**	**0**
Peak Hour HV%	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**1%**	**2%**	**-**	**0%**	**0%**	**0%**	**-**	**1%**	**3%**	**0%**	**1%**	**0**

Note: Three-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
3:30 PM	0	0	1	2	*3*	1	1	0	1	*3*	2	1	1	3	*7*
3:45 PM	0	1	0	0	*1*	0	1	0	2	*3*	1	0	0	2	*3*
4:00 PM	0	0	0	3	*3*	2	0	0	1	*3*	6	0	1	6	*13*
4:15 PM	**0**	**2**	**0**	**0**	***2***	**0**	**1**	**2**	**2**	***5***	**3**	**0**	**0**	**3**	*6*
4:30 PM	**0**	**2**	**0**	**2**	***4***	**4**	**1**	**0**	**3**	***8***	**1**	**0**	**0**	**1**	*2*
4:45 PM	**0**	**1**	**0**	**1**	***2***	**1**	**1**	**0**	**0**	***2***	**1**	**0**	**0**	**2**	*3*
5:00 PM	**0**	**0**	**0**	**1**	***1***	**0**	**3**	**0**	**0**	***3***	**4**	**0**	**0**	**6**	***10***
5:15 PM	1	1	0	0	*2*	1	3	0	1	*5*	3	0	1	2	*6*
5:30 PM	1	1	0	0	*2*	4	1	0	0	*5*	3	0	0	6	*9*
5:45 PM	0	1	0	0	*1*	2	2	0	1	*5*	2	0	1	4	*7*
6:00 PM	0	0	0	0	*0*	2	2	0	0	*4*	0	0	0	3	*3*
6:15 PM	0	1	0	0	*1*	1	3	0	0	*4*	4	0	0	7	*11*
Count Total	2	10	1	9	*22*	18	19	2	11	*50*	30	1	4	45	*80*
Peak Hour	**0**	**5**	**0**	**4**	***9***	**5**	**6**	**2**	**5**	***18***	**9**	**0**	**0**	**12**	***21***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Meador Ave Eastbound				Meador Ave Westbound				James St Northbound				James St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	3	0
3:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	9
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**4**	10
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	11
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**9**
5:15 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	9
5:30 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	7
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	6
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
6:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	4
Count Total	0	0	2	0	0	0	6	4	0	0	1	0	0	7	2	0	22	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**9**	**0**

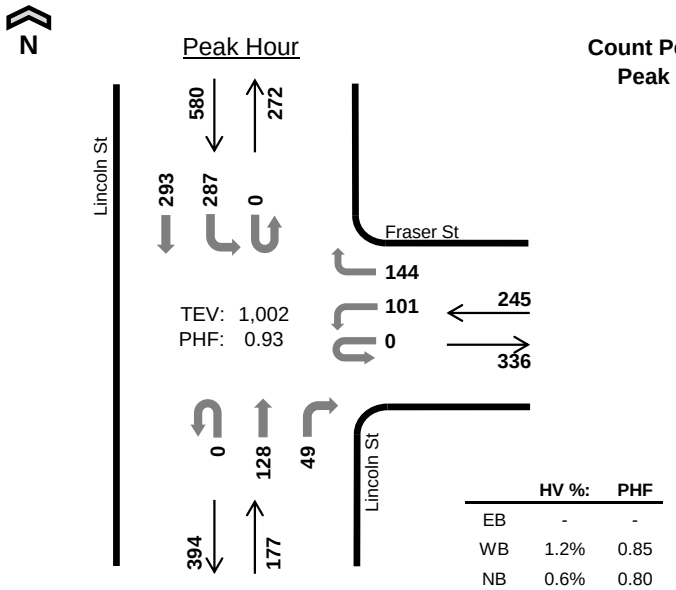
Three-Hour Count Summaries - Bikes

Interval Start	Meador Ave Eastbound			Meador Ave Westbound			James St Northbound			James St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	1	0	0	1	0	0	0	0	1	0	0	3	0
3:45 PM	0	0	0	0	1	0	0	0	0	1	0	1	3	0
4:00 PM	2	0	0	0	0	0	0	0	0	1	0	0	3	0
4:15 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**5**	14
4:30 PM	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**8**	19
4:45 PM	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	18
5:00 PM	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**18**
5:15 PM	0	1	0	0	3	0	0	0	0	1	0	0	5	18
5:30 PM	0	4	0	0	1	0	0	0	0	0	0	0	5	15
5:45 PM	1	1	0	0	2	0	0	0	0	1	0	0	5	18
6:00 PM	1	1	0	1	1	0	0	0	0	0	0	0	4	19
6:15 PM	0	1	0	0	2	1	0	0	0	0	0	0	4	18
Count Total	5	13	0	1	17	1	0	1	1	7	1	3	50	0
Peak Hour	**1**	**4**	**0**	**0**	**6**	**0**	**0**	**1**	**1**	**2**	**1**	**2**	**18**	**0**

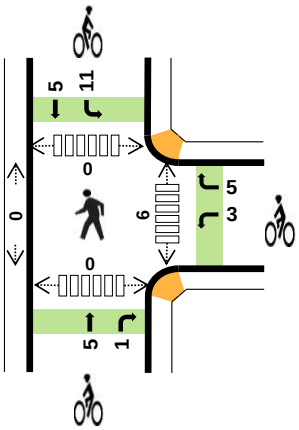
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Lincoln St
Fraser St

Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	-	-
WB	1.2%	0.85
NB	0.6%	0.80
SB	0.7%	0.91
TOTAL	0.8%	0.93



Three-Hour Count Summaries

Interval Start		0 Eastbound				Fraser St Westbound				Lincoln St Northbound				Lincoln St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		0	0	0	0	0	23	0	44	0	0	29	20	0	67	85	0	268	0
4:30 PM		0	0	0	0	0	27	0	43	0	0	29	8	0	68	65	0	240	0
4:45 PM		0	0	0	0	0	16	0	20	0	0	38	17	0	70	65	0	226	0
5:00 PM		0	0	0	0	0	35	0	37	0	0	32	4	0	82	78	0	268	1,002
Peak Hour	All	0	0	0	0	0	101	0	144	0	0	128	49	0	287	293	0	1,002	0
	HV	0	0	0	0	0	1	0	2	0	0	0	1	0	4	0	0	8	0
	HV%	-	-	-	-	-	1%	-	1%	-	-	0%	2%	-	1%	0%	-	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	2	0	2	*4*	0	1	1	9	*11*	0	0	0	0	*0*
4:30 PM	0	1	1	1	*3*	0	3	2	0	*5*	0	0	0	0	*0*
4:45 PM	0	0	0	0	*0*	0	0	2	4	*6*	2	0	0	0	*2*
5:00 PM	0	0	0	1	*1*	0	4	1	3	*8*	4	0	0	0	*4*
Peak Hour	0	3	1	4	*8*	0	8	6	16	*30*	6	0	0	0	*6*

Three-Hour Count Summaries

Interval Start	0				Fraser St				Lincoln St				Lincoln St				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		
3:30 PM	0	0	0	0	0	18	0	30	0	0	36	10	0	43	53	0	190	0
3:45 PM	0	0	0	0	0	17	0	30	0	0	24	12	0	49	81	0	213	0
4:00 PM	0	0	0	0	0	40	0	43	0	0	43	14	0	52	60	0	252	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**23**	**0**	**44**	**0**	**0**	**29**	**20**	**0**	**67**	**85**	**0**	**268**	923
4:30 PM	**0**	**0**	**0**	**0**	**0**	**27**	**0**	**43**	**0**	**0**	**29**	**8**	**0**	**68**	**65**	**0**	**240**	973
4:45 PM	**0**	**0**	**0**	**0**	**0**	**16**	**0**	**20**	**0**	**0**	**38**	**17**	**0**	**70**	**65**	**0**	**226**	986
5:00 PM	**0**	**0**	**0**	**0**	**0**	**35**	**0**	**37**	**0**	**0**	**32**	**4**	**0**	**82**	**78**	**0**	**268**	**1,002**
5:15 PM	0	0	0	0	0	22	0	27	0	0	38	16	0	72	70	0	245	979
5:30 PM	0	0	0	0	0	19	0	36	0	0	29	10	0	49	47	0	190	929
5:45 PM	0	0	0	0	0	14	0	24	0	0	20	13	0	53	43	0	167	870
6:00 PM	0	0	0	0	0	24	0	27	0	0	24	9	0	38	60	0	182	784
6:15 PM	0	0	0	0	0	15	0	16	0	0	26	5	0	39	41	0	142	681
Count Total	0	0	0	0	0	270	0	377	0	0	368	138	0	682	748	0	2,583	0
Peak Hour All	**0**	**0**	**0**	**0**	**0**	**101**	**0**	**144**	**0**	**0**	**128**	**49**	**0**	**287**	**293**	**0**	**1,002**	**0**
Peak Hour HV	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**8**	**0**
Peak Hour HV%	**-**	**-**	**-**	**-**	**-**	**1%**	**-**	**1%**	**-**	**-**	**0%**	**2%**	**-**	**1%**	**0%**	**-**	**1%**	**0**

Note: Three-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
3:30 PM	0	0	1	5	*6*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	0	3	1	1	*5*	0	1	0	2	*3*	0	0	0	0	*0*
4:00 PM	0	0	0	3	*3*	0	1	1	2	*4*	1	0	0	0	*1*
4:15 PM	**0**	**2**	**0**	**2**	***4***	**0**	**1**	**1**	**9**	***11***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**1**	**1**	**1**	***3***	**0**	**3**	**2**	**0**	***5***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**2**	**4**	***6***	**2**	**0**	**0**	**0**	*2*
5:00 PM	**0**	**0**	**0**	**1**	***1***	**0**	**4**	**1**	**3**	***8***	**4**	**0**	**0**	**0**	***4***
5:15 PM	0	1	1	1	*3*	0	1	0	3	*4*	1	0	0	0	*1*
5:30 PM	0	0	1	0	*1*	0	3	1	1	*5*	0	0	0	0	*0*
5:45 PM	0	1	1	1	*3*	0	0	0	1	*1*	1	0	0	0	*1*
6:00 PM	0	1	0	0	*1*	0	2	0	3	*5*	1	0	0	0	*1*
6:15 PM	0	1	0	0	*1*	0	0	1	3	*4*	4	0	0	0	*4*
Count Total	0	10	6	15	*31*	0	16	9	31	*56*	14	0	0	0	*14*
Peak Hr	**0**	**3**	**1**	**4**	***8***	**0**	**8**	**6**	**16**	***30***	**6**	**0**	**0**	**0**	***6***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	0				Fraser St				Lincoln St				Lincoln St				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		
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	4	1	0	6	0
3:45 PM	0	0	0	0	0	1	0	2	0	0	1	0	0	0	1	0	5	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**4**	18
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**3**	15
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	10
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**8**
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	3	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	5
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	3	8
6:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	8
6:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	6
Count Total	0	0	0	0	0	3	0	7	0	0	2	4	0	11	4	0	31	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**4**	**0**	**0**	**8**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	0			Fraser St			Lincoln St			Lincoln St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	1	0	0	0	0	2	0	3	0
4:00 PM	0	0	0	1	0	0	0	1	0	1	1	0	4	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**5**	**4**	**0**	**11**	18
4:30 PM	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**5**	23
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**4**	**0**	**0**	**6**	26
5:00 PM	**0**	**0**	**0**	**2**	**0**	**2**	**0**	**1**	**0**	**2**	**1**	**0**	**8**	**30**
5:15 PM	0	0	0	0	0	1	0	0	0	3	0	0	4	23
5:30 PM	0	0	0	0	0	3	0	1	0	1	0	0	5	23
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	18
6:00 PM	0	0	0	1	0	1	0	0	0	2	1	0	5	15
6:15 PM	0	0	0	0	0	0	0	1	0	2	1	0	4	15
Count Total	0	0	0	5	0	11	0	8	1	21	10	0	56	0
Peak Hour	**0**	**0**	**0**	**3**	**0**	**5**	**0**	**5**	**1**	**11**	**5**	**0**	**30**	**0**

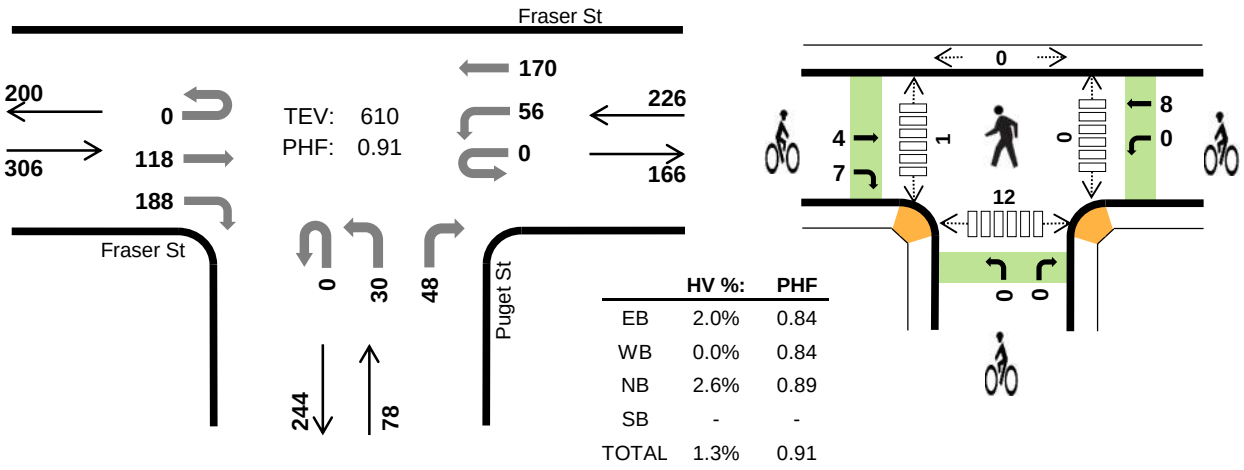
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Puget St
Fraser St

N

Peak Hour

Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:15 PM to 5:15 PM



	HV %:	PHF
EB	2.0%	0.84
WB	0.0%	0.84
NB	2.6%	0.89
SB	-	-
TOTAL	1.3%	0.91

Three-Hour Count Summaries

Interval Start		Fraser St Eastbound				Fraser St Westbound				Puget St Northbound				0 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		0	0	21	44	0	12	55	0	0	10	0	9	0	0	0	0	151	0
4:30 PM		0	0	28	53	0	11	38	0	0	8	0	14	0	0	0	0	152	0
4:45 PM		0	0	29	40	0	21	32	0	0	6	0	12	0	0	0	0	140	0
5:00 PM		0	0	40	51	0	12	45	0	0	6	0	13	0	0	0	0	167	610
Peak Hour	All	0	0	118	188	0	56	170	0	0	30	0	48	0	0	0	0	610	0
	HV	0	0	5	1	0	0	0	0	0	2	0	0	0	0	0	0	8	0
	HV%	-	-	4%	1%	-	0%	0%	-	-	7%	-	0%	-	-	-	-	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	2	0	1	0	*3*	3	1	0	0	*4*	0	0	0	2	*2*
4:30 PM	1	0	1	0	*2*	2	1	0	0	*3*	0	1	0	4	*5*
4:45 PM	2	0	0	0	*2*	4	3	0	0	*7*	0	0	0	0	*0*
5:00 PM	1	0	0	0	*1*	2	3	0	0	*5*	0	0	0	6	*6*
Peak Hour	6	0	2	0	*8*	11	8	0	0	*19*	0	1	0	12	*13*

Three-Hour Count Summaries

Interval Start	Fraser St Eastbound				Fraser St Westbound				Puget St Northbound				0 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	0	20	33	0	13	26	0	0	7	0	8	0	0	0	0	107	0
3:45 PM	0	0	17	33	0	8	38	0	0	10	0	18	0	0	0	0	124	0
4:00 PM	0	0	17	45	0	12	44	0	0	13	0	11	0	0	0	0	142	0
4:15 PM	**0**	**0**	**21**	**44**	**0**	**12**	**55**	**0**	**0**	**10**	**0**	**9**	**0**	**0**	**0**	**0**	**151**	524
4:30 PM	**0**	**0**	**28**	**53**	**0**	**11**	**38**	**0**	**0**	**8**	**0**	**14**	**0**	**0**	**0**	**0**	**152**	569
4:45 PM	**0**	**0**	**29**	**40**	**0**	**21**	**32**	**0**	**0**	**6**	**0**	**12**	**0**	**0**	**0**	**0**	**140**	585
5:00 PM	**0**	**0**	**40**	**51**	**0**	**12**	**45**	**0**	**0**	**6**	**0**	**13**	**0**	**0**	**0**	**0**	**167**	**610**
5:15 PM	0	0	29	40	0	11	34	0	0	5	0	19	0	0	0	0	138	597
5:30 PM	0	0	20	45	0	14	29	0	0	6	0	6	0	0	0	0	120	565
5:45 PM	0	0	19	41	0	9	36	0	0	3	0	9	0	0	0	0	117	542
6:00 PM	0	0	19	35	0	8	29	0	0	2	0	10	0	0	0	0	103	478
6:15 PM	0	0	14	28	0	12	23	0	0	3	0	10	0	0	0	0	90	430
Count Total	0	0	273	488	0	143	429	0	0	79	0	139	0	0	0	0	1,551	0
Peak Hour All	**0**	**0**	**118**	**188**	**0**	**56**	**170**	**0**	**0**	**30**	**0**	**48**	**0**	**0**	**0**	**0**	**610**	**0**
Peak Hour HV	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**
Peak Hour HV%	**-**	**-**	**4%**	**1%**	**-**	**0%**	**0%**	**-**	**-**	**7%**	**-**	**0%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Three-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
3:30 PM	2	0	2	0	*4*	2	1	0	0	*3*	0	0	0	0	*0*
3:45 PM	1	2	0	0	*3*	0	3	0	0	*3*	0	0	0	1	*1*
4:00 PM	2	1	1	0	*4*	1	1	1	0	*3*	0	0	0	1	*1*
4:15 PM	**2**	**0**	**1**	**0**	***3***	**3**	**1**	**0**	**0**	***4***	**0**	**0**	**0**	**2**	*2*
4:30 PM	**1**	**0**	**1**	**0**	***2***	**2**	**1**	**0**	**0**	***3***	**0**	**1**	**0**	**4**	*5*
4:45 PM	**2**	**0**	**0**	**0**	***2***	**4**	**3**	**0**	**0**	***7***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**1**	**0**	**0**	**0**	***1***	**2**	**3**	**0**	**0**	***5***	**0**	**0**	**0**	**6**	***6***
5:15 PM	1	0	0	0	*1*	2	2	1	0	*5*	0	0	0	4	*4*
5:30 PM	1	0	0	0	*1*	1	3	1	0	*5*	0	0	0	0	*0*
5:45 PM	1	1	0	0	*2*	1	1	0	0	*2*	0	0	0	4	*4*
6:00 PM	0	0	0	0	*0*	2	1	1	0	*4*	1	1	0	7	*9*
6:15 PM	0	0	1	0	*1*	2	0	0	0	*2*	0	0	0	2	*2*
Count Total	14	4	6	0	*24*	22	20	4	0	*46*	1	2	0	31	*34*
Peak Hr	**6**	**0**	**2**	**0**	***8***	**11**	**8**	**0**	**0**	***19***	**0**	**1**	**0**	**12**	***13***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Fraser St				Fraser St				Puget St				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	4	0
3:45 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
4:00 PM	0	0	1	1	0	1	0	0	0	1	0	0	0	0	0	0	4	0
4:15 PM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	14
4:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	12
4:45 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	11
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5
5:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	5
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4
Count Total	0	0	12	2	0	1	3	0	0	4	0	2	0	0	0	0	24	0
Peak Hour	**0**	**0**	**5**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**

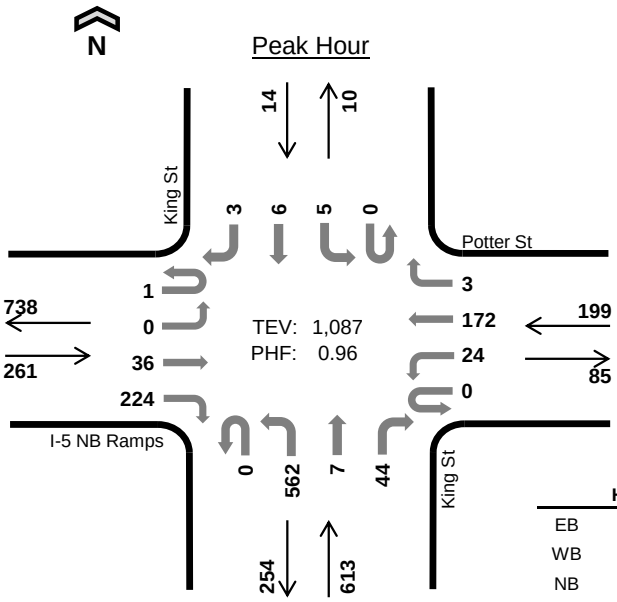
Three-Hour Count Summaries - Bikes

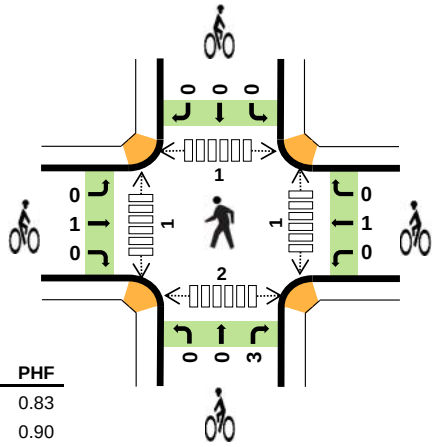
Interval Start	Fraser St			Fraser St			Puget St			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	1	1	0	1	0	0	0	0	0	0	0	3	0
3:45 PM	0	0	0	3	0	0	0	0	0	0	0	0	3	0
4:00 PM	0	0	1	0	1	0	0	0	1	0	0	0	3	0
4:15 PM	**0**	**2**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	13
4:30 PM	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	13
4:45 PM	**0**	**1**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	17
5:00 PM	**0**	**1**	**1**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**19**
5:15 PM	0	1	1	1	1	0	0	0	1	0	0	0	5	20
5:30 PM	0	0	1	1	2	0	1	0	0	0	0	0	5	22
5:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	2	17
6:00 PM	0	1	1	0	1	0	0	0	1	0	0	0	4	16
6:15 PM	0	1	1	0	0	0	0	0	0	0	0	0	2	13
Count Total	0	8	14	5	15	0	1	0	3	0	0	0	46	0
Peak Hour	**0**	**4**	**7**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**19**	**0**

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

King St
Potter St

Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.3%	0.83
WB	1.0%	0.90
NB	1.1%	0.95
SB	0.0%	0.58
TOTAL	1.4%	0.96

Three-Hour Count Summaries

Interval Start		I-5 NB Ramps Eastbound				Potter St Westbound				King St Northbound				King St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:15 PM		0	0	7	46	0	2	43	0	0	145	1	16	0	0	1	1	262	0
4:30 PM		0	0	7	56	0	11	37	1	0	149	0	13	0	1	1	0	276	0
4:45 PM		0	0	12	67	0	7	42	1	0	124	1	9	0	2	1	1	267	0
5:00 PM		1	0	10	55	0	4	50	1	0	144	5	6	0	2	3	1	282	1,087
Peak Hour	All	1	0	36	224	0	24	172	3	0	562	7	44	0	5	6	3	1,087	0
	HV	0	0	2	4	0	0	2	0	0	6	0	1	0	0	0	0	15	0
	HV%	0%	-	6%	2%	-	0%	1%	0%	-	1%	0%	2%	-	0%	0%	0%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:15 PM	0	0	1	0	*1*	0	0	1	0	*1*	0	0	0	1	*1*
4:30 PM	2	1	1	0	*4*	0	0	1	0	*1*	1	1	1	0	*3*
4:45 PM	3	0	3	0	*6*	1	0	0	0	*1*	0	0	0	1	*1*
5:00 PM	1	1	2	0	*4*	0	1	1	0	*2*	0	0	0	0	*0*
Peak Hour	6	2	7	0	*15*	1	1	3	0	*5*	1	1	1	2	*5*

Three-Hour Count Summaries

Interval Start	I-5 NB Ramps				Potter St				King St				King St				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		
3:30 PM	1	0	4	51	0	5	38	1	0	116	1	14	0	1	0	0	232	0
3:45 PM	1	0	20	51	0	9	36	0	0	133	3	9	0	0	1	0	263	0
4:00 PM	0	0	9	65	0	6	40	1	0	136	1	7	0	0	1	2	268	0
4:15 PM	**0**	**0**	**7**	**46**	**0**	**2**	**43**	**0**	**0**	**145**	**1**	**16**	**0**	**0**	**1**	**1**	**262**	1,025
4:30 PM	**0**	**0**	**7**	**56**	**0**	**11**	**37**	**1**	**0**	**149**	**0**	**13**	**0**	**1**	**1**	**0**	**276**	1,069
4:45 PM	**0**	**0**	**12**	**67**	**0**	**7**	**42**	**1**	**0**	**124**	**1**	**9**	**0**	**2**	**1**	**1**	**267**	1,073
5:00 PM	**1**	**0**	**10**	**55**	**0**	**4**	**50**	**1**	**0**	**144**	**5**	**6**	**0**	**2**	**3**	**1**	**282**	**1,087**
5:15 PM	0	0	16	48	0	4	35	1	0	115	1	10	0	2	1	3	236	1,061
5:30 PM	0	1	18	47	0	6	28	0	0	121	0	8	0	1	0	1	231	1,016
5:45 PM	0	0	9	52	0	4	23	0	0	108	1	7	0	0	2	0	206	955
6:00 PM	0	0	13	46	0	1	34	0	0	118	0	5	0	1	1	2	221	894
6:15 PM	0	0	5	45	0	2	20	0	0	107	2	6	0	1	0	0	188	846
Count Total	3	1	130	629	0	61	426	6	0	1,516	16	110	0	11	12	11	2,932	0
Peak Hour All	**1**	**0**	**36**	**224**	**0**	**24**	**172**	**3**	**0**	**562**	**7**	**44**	**0**	**5**	**6**	**3**	**1,087**	**0**
Peak Hour HV	**0**	**0**	**2**	**4**	**0**	**0**	**2**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**15**	**0**
Peak Hour HV%	**0%**	**-**	**6%**	**2%**	**-**	**0%**	**1%**	**0%**	**-**	**1%**	**0%**	**2%**	**-**	**0%**	**0%**	**0%**	**1%**	**0**

Note: Three-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
3:30 PM	3	0	1	0	*4*	0	0	1	0	*1*	2	0	0	0	*2*
3:45 PM	2	2	2	0	*6*	0	2	0	0	*2*	0	0	0	1	*1*
4:00 PM	4	0	2	0	*6*	0	0	1	0	*1*	1	0	0	0	*1*
4:15 PM	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
4:30 PM	**2**	**1**	**1**	**0**	***4***	**0**	**0**	**1**	**0**	***1***	**1**	**1**	**1**	**0**	*3*
4:45 PM	**3**	**0**	**3**	**0**	***6***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**1**	**1**	**2**	**0**	***4***	**0**	**1**	**1**	**0**	***2***	**0**	**0**	**0**	**0**	***0***
5:15 PM	1	0	2	0	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	2	0	*2*	0	0	0	0	*0*	3	0	0	1	*4*
5:45 PM	1	0	5	0	*6*	0	0	0	0	*0*	0	0	0	0	*0*
6:00 PM	0	2	1	0	*3*	0	0	0	0	*0*	1	0	1	1	*3*
6:15 PM	0	1	1	0	*2*	0	0	0	0	*0*	1	0	1	0	*2*
Count Total	17	7	23	0	*47*	1	3	5	0	*9*	9	1	3	5	*18*
Peak Hour	**6**	**2**	**7**	**0**	***15***	**1**	**1**	**3**	**0**	***5***	**1**	**1**	**1**	**2**	***5***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	I-5 NB Ramps				Potter St				King St				King St				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		
3:30 PM	0	0	0	3	0	0	0	0	0	1	0	0	0	0	0	0	4	0
3:45 PM	0	0	0	2	0	2	0	0	0	1	0	1	0	0	0	0	6	0
4:00 PM	0	0	0	4	0	0	0	0	0	2	0	0	0	0	0	0	6	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	17
4:30 PM	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	17
4:45 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**6**	17
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**15**
5:15 PM	0	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	3	17
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	15
5:45 PM	0	0	1	0	0	0	0	0	0	4	0	1	0	0	0	0	6	15
6:00 PM	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	3	14
6:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	13
Count Total	0	0	3	14	0	2	5	0	0	19	1	3	0	0	0	0	47	0
Peak Hour	**0**	**0**	**2**	**4**	**0**	**0**	**2**	**0**	**0**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**15**	**0**

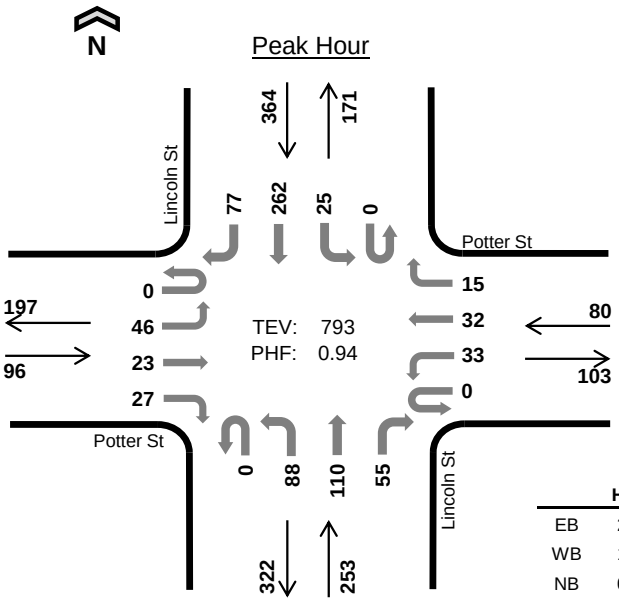
Three-Hour Count Summaries - Bikes

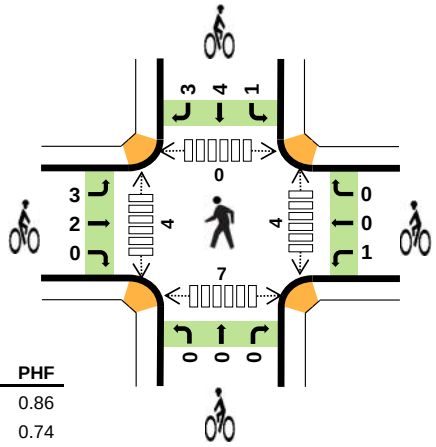
Interval Start	I-5 NB Ramps			Potter St			King St			King St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
3:45 PM	0	0	0	1	1	0	0	0	0	0	0	0	2	0
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	5
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	5
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**	**5**
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
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
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	1	0	1	2	0	0	0	5	0	0	0	9	0
Peak Hour	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**5**	**0**

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

Lincoln St
Potter St

Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 3:45 PM to 4:45 PM





	HV %:	PHF
EB	2.1%	0.86
WB	1.3%	0.74
NB	0.8%	0.87
SB	1.4%	0.94
TOTAL	1.3%	0.94

Three-Hour Count Summaries

Interval Start		Potter St Eastbound				Potter St Westbound				Lincoln St Northbound				Lincoln St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:45 PM		0	12	5	11	0	4	9	1	0	19	21	16	0	7	70	20	195	0
4:00 PM		0	15	2	4	0	17	4	6	0	20	38	15	0	0	70	19	210	0
4:15 PM		0	9	8	6	0	9	4	6	0	32	27	11	0	12	67	17	208	0
4:30 PM		0	10	8	6	0	3	15	2	0	17	24	13	0	6	55	21	180	793
Peak Hour	All	0	46	23	27	0	33	32	15	0	88	110	55	0	25	262	77	793	0
	HV	0	1	0	1	0	0	0	1	0	2	0	0	0	0	3	2	10	0
	HV%	-	2%	0%	4%	-	0%	0%	7%	-	2%	0%	0%	-	0%	1%	3%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:45 PM	1	0	0	3	*4*	1	0	0	2	*3*	0	0	0	1	*1*
4:00 PM	0	1	0	1	*2*	1	1	0	0	*2*	1	2	0	0	*3*
4:15 PM	0	0	0	1	*1*	0	0	0	5	*5*	3	0	0	4	*7*
4:30 PM	1	0	2	0	*3*	3	0	0	1	*4*	0	2	0	2	*4*
Peak Hour	2	1	2	5	*10*	5	1	0	8	*14*	4	4	0	7	*15*

Three-Hour Count Summaries

Interval Start	Potter St Eastbound				Potter St Westbound				Lincoln St Northbound				Lincoln St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	11	7	5	0	8	11	1	0	18	34	4	0	8	50	18	175	0
3:45 PM	**0**	**12**	**5**	**11**	**0**	**4**	**9**	**1**	**0**	**19**	**21**	**16**	**0**	**7**	**70**	**20**	**195**	0
4:00 PM	**0**	**15**	**2**	**4**	**0**	**17**	**4**	**6**	**0**	**20**	**38**	**15**	**0**	**0**	**70**	**19**	**210**	0
4:15 PM	**0**	**9**	**8**	**6**	**0**	**9**	**4**	**6**	**0**	**32**	**27**	**11**	**0**	**12**	**67**	**17**	**208**	788
4:30 PM	**0**	**10**	**8**	**6**	**0**	**3**	**15**	**2**	**0**	**17**	**24**	**13**	**0**	**6**	**55**	**21**	**180**	**793**
4:45 PM	0	12	10	11	0	8	12	6	0	16	30	5	0	7	55	21	193	791
5:00 PM	0	7	7	9	0	11	9	2	0	11	27	7	0	2	68	31	191	772
5:15 PM	0	11	13	3	0	9	8	2	0	15	38	7	0	6	67	15	194	758
5:30 PM	0	14	4	10	0	8	9	1	0	11	29	7	0	2	49	12	156	734
5:45 PM	0	9	5	4	0	3	3	1	0	14	18	2	0	3	45	9	116	657
6:00 PM	0	8	3	8	0	4	7	1	0	21	20	1	0	3	52	7	135	601
6:15 PM	0	5	4	4	0	1	6	0	0	10	30	4	0	4	39	8	115	522
Count Total	0	123	76	81	0	85	97	29	0	204	336	92	0	60	687	198	2,068	0
Peak Hour All	**0**	**46**	**23**	**27**	**0**	**33**	**32**	**15**	**0**	**88**	**110**	**55**	**0**	**25**	**262**	**77**	**793**	**0**
Peak Hour HV	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	**2**	**10**	**0**
Peak Hour HV%	**-**	**2%**	**0%**	**4%**	**-**	**0%**	**0%**	**7%**	**-**	**2%**	**0%**	**0%**	**-**	**0%**	**1%**	**3%**	**1%**	**0**

Note: Three-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
3:30 PM	0	0	1	0	*1*	1	0	1	1	*3*	1	0	0	0	*1*
3:45 PM	**1**	**0**	**0**	**3**	***4***	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**1**	*1*
4:00 PM	**0**	**1**	**0**	**1**	***2***	**1**	**1**	**0**	**0**	***2***	**1**	**2**	**0**	**0**	*3*
4:15 PM	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**5**	***5***	**3**	**0**	**0**	**4**	*7*
4:30 PM	**1**	**0**	**2**	**0**	***3***	**3**	**0**	**0**	**1**	***4***	**0**	**2**	**0**	**2**	***4***
4:45 PM	1	0	0	0	*1*	0	0	1	1	*2*	0	1	0	8	*9*
5:00 PM	1	0	0	0	*1*	0	0	2	1	*3*	0	0	0	4	*4*
5:15 PM	0	0	0	0	*0*	0	0	2	1	*3*	2	0	0	2	*4*
5:30 PM	0	0	1	0	*1*	0	1	1	0	*2*	0	2	0	1	*3*
5:45 PM	2	0	0	1	*3*	0	1	0	0	*1*	2	1	0	2	*5*
6:00 PM	0	2	0	0	*2*	0	0	0	1	*1*	0	1	0	0	*1*
6:15 PM	0	1	0	0	*1*	0	0	2	2	*4*	3	0	0	0	*3*
Count Total	6	4	4	6	*20*	6	3	9	15	*33*	12	9	0	24	*45*
Peak Hour	**2**	**1**	**2**	**5**	***10***	**5**	**1**	**0**	**8**	***14***	**4**	**4**	**0**	**7**	***15***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Potter St Eastbound				Potter St Westbound				Lincoln St Northbound				Lincoln St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
3:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**4**	0
4:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	8
4:30 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**10**
4:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	7
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	3
5:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	3	5
6:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	6
6:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	7
Count Total	0	3	0	3	0	0	3	1	0	2	2	0	0	0	4	2	20	0
Peak Hour	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**0**	**3**	**2**	**10**	**0**

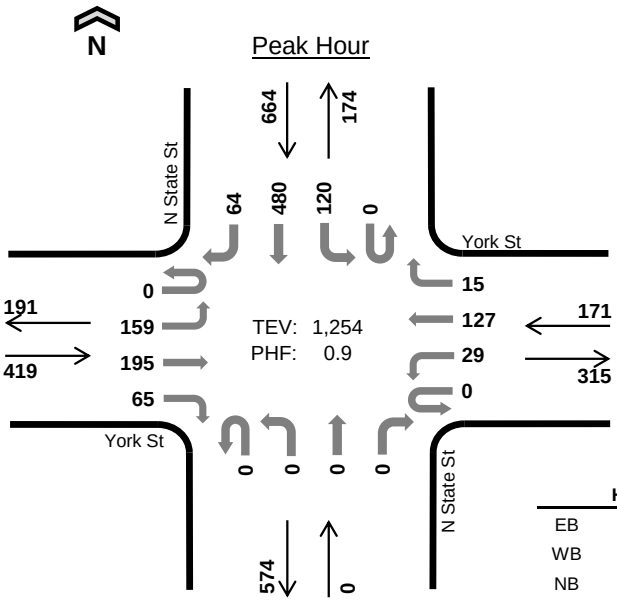
Three-Hour Count Summaries - Bikes

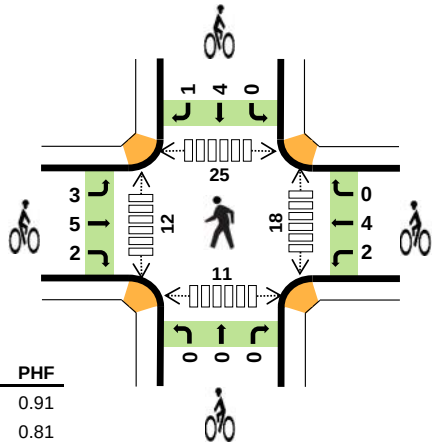
Interval Start	Potter St Eastbound			Potter St Westbound			Lincoln St Northbound			Lincoln St Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	1	0	0	0	0	0	1	0	1	0	0	3	0
3:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**	0
4:00 PM	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	**1**	**5**	13
4:30 PM	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**14**
4:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2	13
5:00 PM	0	0	0	0	0	0	0	1	1	0	1	0	3	14
5:15 PM	0	0	0	0	0	0	0	1	1	0	1	0	3	12
5:30 PM	0	0	0	1	0	0	0	1	0	0	0	0	2	10
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	9
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	7
6:15 PM	0	0	0	0	0	0	0	1	1	1	1	0	4	8
Count Total	3	3	0	3	0	0	0	6	3	3	9	3	33	0
Peak Hour	**3**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**3**	**14**	**0**

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

N State St
York St

Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.5%	0.91
WB	0.0%	0.81
NB	-	-
SB	0.8%	0.86
TOTAL	0.6%	0.90

Three-Hour Count Summaries

Interval Start		York St Eastbound				York St Westbound				N State St Northbound				N State St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	41	50	21	0	4	42	0	0	0	0	0	0	33	106	18	315	0
4:45 PM		0	39	39	15	0	13	36	4	0	0	0	0	0	21	123	19	309	0
5:00 PM		0	42	56	17	0	9	23	9	0	0	0	0	0	35	141	17	349	0
5:15 PM		0	37	50	12	0	3	26	2	0	0	0	0	0	31	110	10	281	1,254
Peak Hour	All	0	159	195	65	0	29	127	15	0	0	0	0	0	120	480	64	1,254	0
	HV	0	0	1	1	0	0	0	0	0	0	0	0	0	1	4	0	7	0
	HV%	-	0%	1%	2%	-	0%	0%	0%	-	-	-	-	-	1%	1%	0%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	0	0	0	1	*1*	3	0	0	1	*4*	7	4	5	3	*19*
4:45 PM	1	0	0	2	*3*	2	3	0	2	*7*	3	1	9	2	*15*
5:00 PM	1	0	0	2	*3*	2	2	0	2	*6*	2	3	7	4	*16*
5:15 PM	0	0	0	0	*0*	3	1	0	0	*4*	6	4	4	2	*16*
Peak Hour	2	0	0	5	*7*	10	6	0	5	*21*	18	12	25	11	*66*

Three-Hour Count Summaries

Interval Start	York St Eastbound				York St Westbound				N State St Northbound				N State St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	17	47	7	0	4	27	2	0	0	0	0	0	22	114	25	265	0
3:45 PM	0	26	35	18	0	7	33	1	0	0	0	0	0	45	93	24	282	0
4:00 PM	0	20	34	11	0	0	29	3	0	0	0	0	0	27	101	24	249	0
4:15 PM	0	21	35	22	0	2	21	1	0	0	0	0	0	28	129	21	280	1,076
4:30 PM	**0**	**41**	**50**	**21**	**0**	**4**	**42**	**0**	**0**	**0**	**0**	**0**	**0**	**33**	**106**	**18**	**315**	1,126
4:45 PM	**0**	**39**	**39**	**15**	**0**	**13**	**36**	**4**	**0**	**0**	**0**	**0**	**0**	**21**	**123**	**19**	**309**	1,153
5:00 PM	**0**	**42**	**56**	**17**	**0**	**9**	**23**	**9**	**0**	**0**	**0**	**0**	**0**	**35**	**141**	**17**	**349**	1,253
5:15 PM	**0**	**37**	**50**	**12**	**0**	**3**	**26**	**2**	**0**	**0**	**0**	**0**	**0**	**31**	**110**	**10**	**281**	**1,254**
5:30 PM	0	20	31	13	0	6	38	1	0	0	0	0	0	26	118	13	266	1,205
5:45 PM	0	28	33	14	0	6	31	3	0	0	0	0	0	28	100	10	253	1,149
6:00 PM	0	29	33	12	0	7	27	1	0	0	0	0	0	22	87	15	233	1,033
6:15 PM	0	11	25	7	0	4	20	2	0	0	0	0	0	27	110	7	213	965
Count Total	0	331	468	169	0	65	353	29	0	0	0	0	0	345	1,332	203	3,295	0
Peak Hour All	**0**	**159**	**195**	**65**	**0**	**29**	**127**	**15**	**0**	**0**	**0**	**0**	**0**	**120**	**480**	**64**	**1,254**	**0**
Peak Hour HV	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**7**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**2%**	**-**	**0%**	**0%**	**0%**	**-**	**-**	**-**	**-**	**-**	**1%**	**1%**	**0%**	**1%**	**0**

Note: Three-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
3:30 PM	0	1	0	0	*1*	2	0	0	0	*2*	3	5	6	3	*17*
3:45 PM	1	1	0	3	*5*	1	0	0	0	*1*	3	1	7	0	*11*
4:00 PM	1	0	0	1	*2*	0	0	0	1	*1*	0	2	5	1	*8*
4:15 PM	0	1	0	3	*4*	1	0	0	2	*3*	3	2	5	0	*10*
4:30 PM	**0**	**0**	**0**	**1**	***1***	**3**	**0**	**0**	**1**	***4***	**7**	**4**	**5**	**3**	*19*
4:45 PM	**1**	**0**	**0**	**2**	***3***	**2**	**3**	**0**	**2**	***7***	**3**	**1**	**9**	**2**	*15*
5:00 PM	**1**	**0**	**0**	**2**	***3***	**2**	**2**	**0**	**2**	***6***	**2**	**3**	**7**	**4**	*16*
5:15 PM	**0**	**0**	**0**	**0**	***0***	**3**	**1**	**0**	**0**	***4***	**6**	**4**	**4**	**2**	***16***
5:30 PM	0	2	0	1	*3*	2	3	0	0	*5*	1	3	2	0	*6*
5:45 PM	0	0	0	1	*1*	3	2	0	1	*6*	1	6	3	3	*13*
6:00 PM	1	1	0	1	*3*	6	0	0	1	*7*	3	3	4	1	*11*
6:15 PM	1	0	0	1	*2*	2	1	0	0	*3*	2	2	4	0	*8*
Count Total	6	6	0	16	*28*	27	12	0	10	*49*	34	36	61	19	*150*
Peak Hour	**2**	**0**	**0**	**5**	***7***	**10**	**6**	**0**	**5**	***21***	**18**	**12**	**25**	**11**	***66***

Three-Hour Count Summaries - Heavy Vehicles

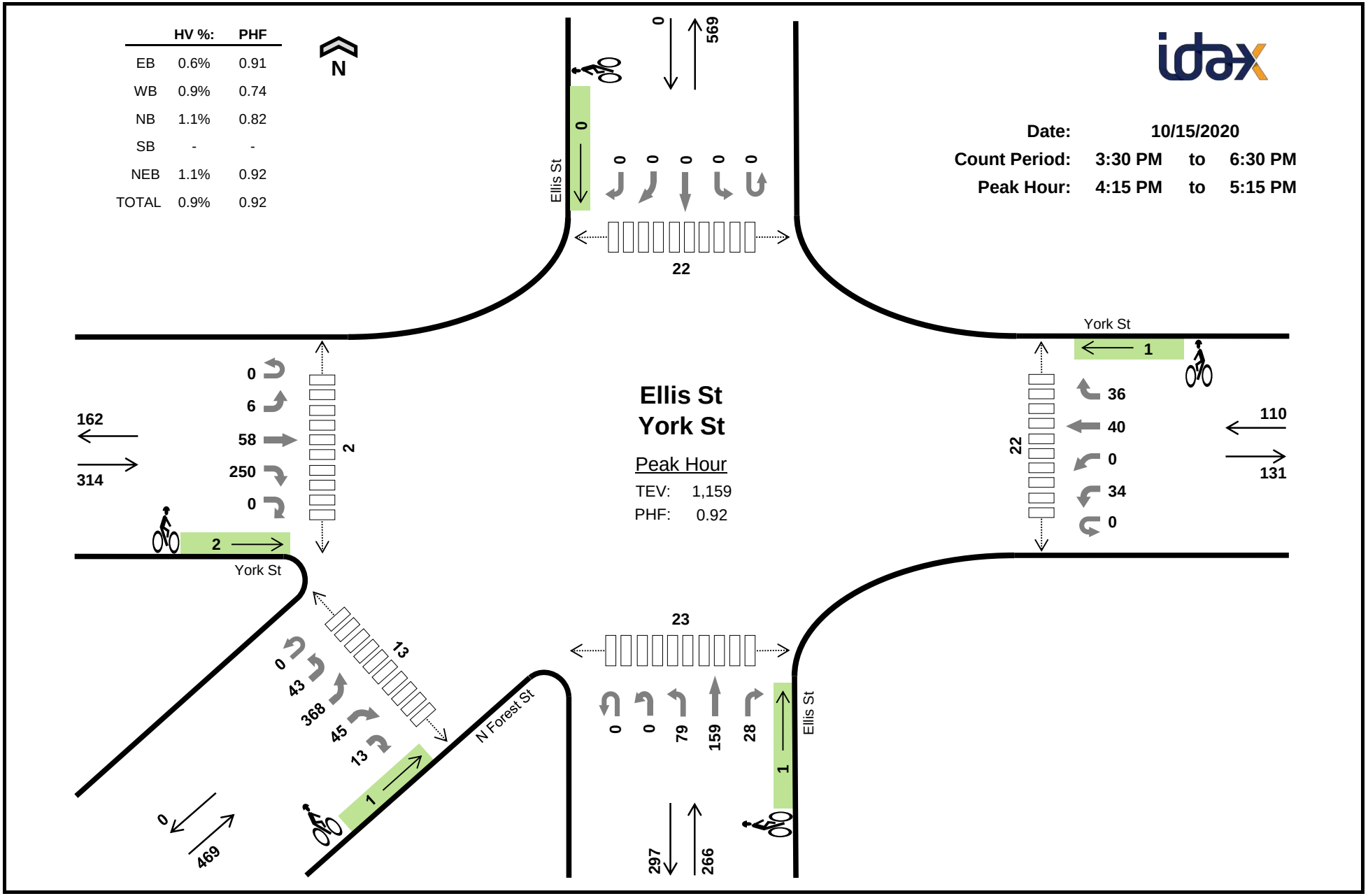
Interval Start	York St				York St				N State St				N State St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
3:45 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	1	2	0	5	0
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	0	4	12
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	12
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	10
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**3**	11
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
5:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	3	9
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	7
6:00 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3	7
6:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	9
Count Total	0	1	4	1	0	0	6	0	0	0	0	0	0	7	9	0	28	0
Peak Hour	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**4**	**0**	**7**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	York St			York St			N State St			N State St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	1	1	0	0	0	0	0	0	0	0	0	0	2	0
3:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	2	0	3	7
4:30 PM	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	9
4:45 PM	**1**	**0**	**1**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**7**	15
5:00 PM	**0**	**2**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**6**	20
5:15 PM	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**21**
5:30 PM	0	1	1	0	3	0	0	0	0	0	0	0	5	22
5:45 PM	1	2	0	0	2	0	0	0	0	0	1	0	6	21
6:00 PM	1	3	2	0	0	0	0	0	0	0	0	1	7	22
6:15 PM	0	1	1	0	1	0	0	0	0	0	0	0	3	21
Count Total	6	15	6	2	10	0	0	0	0	0	8	2	49	0
Peak Hour	**3**	**5**	**2**	**2**	**4**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**21**	**0**

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

	HV %:	PHF
EB	0.6%	0.91
WB	0.9%	0.74
NB	1.1%	0.82
SB	-	-
NEB	1.1%	0.92
TOTAL	0.9%	0.92



Three-Hour Count Summaries

Interval Start		York St Eastbound					York St Westbound					Ellis St Northbound					Ellis St Southbound					N Forest St Northeastbound					15-min Total	Rolling One Hour
		UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
3:30 PM		0	5	9	51	0	0	7	0	5	6	0	0	19	37	9	0	0	0	0	0	0	8	70	6	5	237	0
3:45 PM		0	1	4	51	0	0	7	0	11	14	0	0	30	40	10	0	0	0	0	0	0	5	67	6	1	247	0
4:00 PM		0	0	11	71	0	0	10	0	12	14	0	0	20	38	8	0	0	0	0	0	0	12	66	7	2	271	0
4:15 PM		**0**	**4**	**7**	**58**	**0**	**0**	**5**	**0**	**11**	**8**	**0**	**0**	**25**	**37**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**80**	**8**	**1**	**252**	1,007
4:30 PM		**0**	**1**	**21**	**63**	**0**	**0**	**5**	**0**	**11**	**5**	**0**	**0**	**21**	**46**	**14**	**0**	**0**	**0**	**0**	**0**	**0**	**15**	**98**	**12**	**2**	**314**	1,084
4:45 PM		**0**	**1**	**18**	**55**	**0**	**0**	**13**	**0**	**6**	**18**	**0**	**0**	**15**	**38**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**12**	**96**	**14**	**3**	**291**	1,128
5:00 PM		**0**	**0**	**12**	**74**	**0**	**0**	**11**	**0**	**12**	**5**	**0**	**0**	**18**	**38**	**10**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**94**	**11**	**7**	**302**	**1,159**
5:15 PM		0	1	23	54	0	0	7	0	7	6	0	0	21	30	7	0	0	0	0	0	0	8	69	4	1	238	1,145
5:30 PM		0	1	17	40	0	0	9	0	10	6	0	0	10	30	7	0	0	0	0	0	0	7	75	18	3	233	1,064
5:45 PM		0	1	9	30	0	0	11	0	10	13	0	0	17	28	12	0	0	0	0	0	0	4	72	8	2	217	990
6:00 PM		0	0	11	47	0	0	7	0	7	8	0	0	32	31	5	0	0	0	0	0	0	5	69	6	3	231	919
6:15 PM		0	0	11	45	0	0	8	0	8	10	0	0	14	19	8	0	0	0	0	0	0	3	62	10	0	198	879
Count Total		0	15	153	639	0	0	100	0	110	113	0	0	242	412	94	0	0	0	0	0	0	95	918	110	30	3,031	0
Peak Hour	**All**	**0**	**6**	**58**	**250**	**0**	**0**	**34**	**0**	**40**	**36**	**0**	**0**	**79**	**159**	**28**	**0**	**0**	**0**	**0**	**0**	**0**	**43**	**368**	**45**	**13**	**1,159**	**0**
	HV	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**1**	**11**	**0**
	HV%	**-**	**0%**	**0%**	**1%**	**-**	**-**	**0%**	**-**	**3%**	**0%**	**-**	**-**	**0%**	**1%**	**4%**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**1%**	**2%**	**8%**	**1%**	**0**

Note: Three-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	NEB	Total	EB	WB	NB	SB	NEB	Total	East	West	North	South	Southwest	Total
3:30 PM	0	1	1	0	2	*4*	0	0	1	0	1	*2*	5	0	5	4	2	*16*
3:45 PM	1	1	2	0	1	*5*	1	0	1	0	0	*2*	2	0	2	6	0	*10*
4:00 PM	1	0	2	0	1	*4*	2	0	1	0	0	*3*	2	0	5	7	0	*14*
4:15 PM	**0**	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	**0**	***0***	**1**	**1**	**5**	**4**	**2**	***13***
4:30 PM	**0**	**0**	**2**	**0**	**2**	***4***	**0**	**0**	**0**	**0**	**1**	***1***	**2**	**0**	**8**	**3**	**1**	***14***
4:45 PM	**1**	**0**	**0**	**0**	**0**	***1***	**1**	**1**	**0**	**0**	**0**	***2***	**8**	**1**	**4**	**11**	**8**	***32***
5:00 PM	**1**	**0**	**1**	**0**	**1**	***3***	**1**	**0**	**1**	**0**	**0**	***2***	**11**	**0**	**5**	**5**	**2**	***23***
5:15 PM	0	2	1	0	0	*3*	1	1	0	0	1	*3*	7	0	7	10	8	*32*
5:30 PM	1	1	0	0	2	*4*	1	1	0	0	1	*3*	3	0	12	5	2	*22*
5:45 PM	0	1	1	0	1	*3*	1	1	0	0	2	*4*	0	1	7	6	2	*16*
6:00 PM	0	0	0	0	0	*0*	1	0	1	0	1	*3*	0	0	7	3	2	*12*
6:15 PM	1	1	1	0	5	*8*	2	0	0	0	2	*4*	3	0	0	4	2	*9*
Count Total	6	8	11	0	17	*42*	11	4	5	0	9	*29*	44	3	67	68	31	*213*
Peak Hr	**2**	**1**	**3**	**0**	**5**	***11***	**2**	**1**	**1**	**0**	**1**	***5***	**22**	**2**	**22**	**23**	**13**	*82*

Three-Hour Count Summaries - Heavy Vehicles

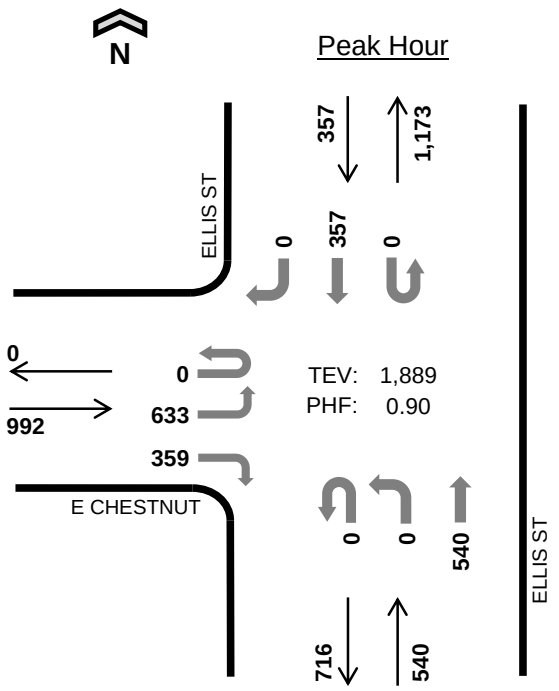
Interval Start	York St					York St					Ellis St					Ellis St					N Forest St					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northeastbound						
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
3:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	4	0
3:45 PM	0	0	0	1	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	5	0
4:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	4	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**3**	16
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**4**	16
4:45 PM	**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**	**1**	12
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**11**
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	11
5:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	11
5:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	3	13
6:00 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	10
6:15 PM	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	0	8	15
Count Total	0	0	1	5	0	0	5	0	3	0	0	0	0	8	3	0	0	0	0	0	0	1	12	1	3	42	0
Peak Hour	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**1**	**1**	11	**0**

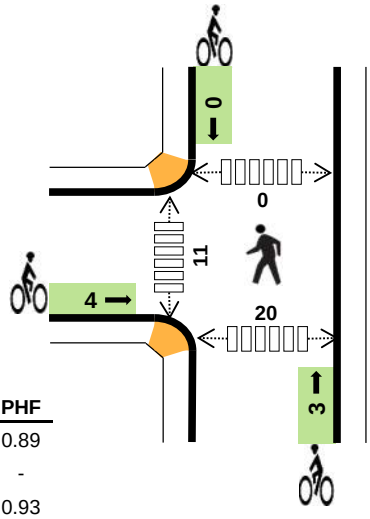
Three-Hour Count Summaries - Bikes

Interval Start	York St					York St					Ellis St					Ellis St					N Forest St					15-min Total	Rolling One Hour
	Eastbound					Westbound					Northbound					Southbound					Northeastbound						
	UT	LT	TH	RT	HR	UT	LT	BL	TH	RT	UT	HL	LT	TH	RT	UT	LT	TH	BR	RT	UT	HL	BL	BR	HR		
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	0
3:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:00 PM	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0
4:15 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**	7
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	6
4:45 PM	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	6
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**5**
5:15 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	8
5:30 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	10
5:45 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	4	12
6:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3	13
6:15 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	4	14
Count Total	0	0	5	6	0	0	1	0	2	1	0	0	5	0	0	0	0	0	0	0	0	2	5	2	0	29	0
Peak Hour	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	5	**0**

ELLIS ST
E CHESTNUT

Date: Thu, Sep 29, 2016
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	0.9%	0.89
WB	-	-
NB	0.7%	0.93
SB	1.1%	0.87
TOTAL	0.9%	0.90

Three-Hour Count Summaries

Interval Start	E CHESTNUT				0				ELLIS ST				ELLIS ST				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		
4:30 PM	0	140	0	62	0	0	0	0	0	0	132	0	0	0	69	0	403	0
4:45 PM	0	164	0	79	0	0	0	0	0	0	123	0	0	0	97	0	463	0
5:00 PM	0	171	0	109	0	0	0	0	0	0	140	0	0	0	103	0	523	0
5:15 PM	0	158	0	109	0	0	0	0	0	0	145	0	0	0	88	0	500	1,889
Peak Hour	0	633	0	359	0	0	0	0	0	0	540	0	0	0	357	0	1,889	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	2	0	1	0	*3*	1	0	1	0	*2*	0	7	0	7	*14*
4:45 PM	3	0	1	3	*7*	2	0	2	0	*4*	0	0	0	2	*2*
5:00 PM	3	0	0	1	*4*	1	0	0	0	*1*	0	1	0	7	*8*
5:15 PM	1	0	2	0	*3*	0	0	0	0	*0*	0	3	0	4	*7*
Peak Hour	9	0	4	4	*17*	4	0	3	0	*7*	0	11	0	20	*31*

Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

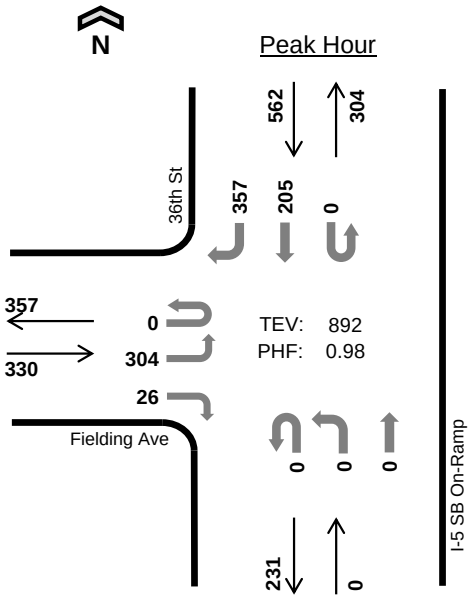
Three-Hour Count Summaries

Interval Start	E CHESTNUT				0				ELLIS ST				ELLIS ST				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		
3:30 PM	0	134	0	57	0	0	0	0	0	0	117	0	0	0	56	0	364	0
3:45 PM	0	133	0	61	0	0	0	0	0	0	157	0	0	0	68	0	419	0
4:00 PM	0	156	0	73	0	0	0	0	0	0	112	0	0	0	69	0	410	0
4:15 PM	0	152	0	47	0	0	0	0	0	0	102	0	0	0	79	0	380	1,573
4:30 PM	**0**	**140**	**0**	**62**	**0**	**0**	**0**	**0**	**0**	**0**	**132**	**0**	**0**	**0**	**69**	**0**	**403**	1,612
4:45 PM	**0**	**164**	**0**	**79**	**0**	**0**	**0**	**0**	**0**	**0**	**123**	**0**	**0**	**0**	**97**	**0**	**463**	1,656
5:00 PM	**0**	**171**	**0**	**109**	**0**	**0**	**0**	**0**	**0**	**0**	**140**	**0**	**0**	**0**	**103**	**0**	**523**	1,769
5:15 PM	**0**	**158**	**0**	**109**	**0**	**0**	**0**	**0**	**0**	**0**	**145**	**0**	**0**	**0**	**88**	**0**	**500**	**1,889**
5:30 PM	0	120	0	72	0	0	0	0	0	0	108	0	0	0	77	0	377	1,863
5:45 PM	0	130	0	71	0	0	0	0	0	0	109	0	0	0	72	0	382	1,782
6:00 PM	0	117	0	72	0	0	0	0	0	0	125	0	0	0	70	0	384	1,643
6:15 PM	0	139	0	59	0	0	0	0	0	0	104	0	0	0	65	0	367	1,510
Count Total	0	1,714	0	871	0	0	0	0	0	0	1,474	0	0	0	913	0	4,972	0
Peak Hour	**0**	**633**	**0**	**359**	**0**	**0**	**0**	**0**	**0**	**0**	**540**	**0**	**0**	**0**	**357**	**0**	**1,889**	**0**

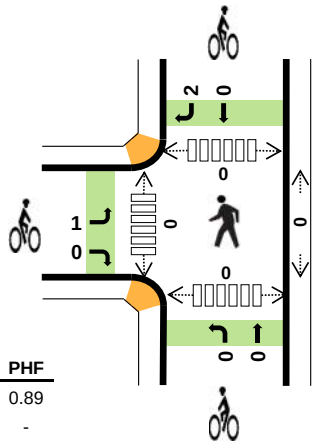
Note: Three-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
3:30 PM	4	0	2	0	*6*	1	0	1	0	*2*	0	1	0	5	*6*
3:45 PM	1	0	1	1	*3*	0	0	0	2	*2*	0	1	0	12	*13*
4:00 PM	1	0	3	1	*5*	1	0	2	0	*3*	0	2	0	13	*15*
4:15 PM	3	0	2	1	*6*	0	0	1	0	*1*	0	2	0	12	*14*
4:30 PM	**2**	**0**	**1**	**0**	***3***	**1**	**0**	**1**	**0**	***2***	**0**	**7**	**0**	**7**	*14*
4:45 PM	**3**	**0**	**1**	**3**	***7***	**2**	**0**	**2**	**0**	***4***	**0**	**0**	**0**	**2**	*2*
5:00 PM	**3**	**0**	**0**	**1**	***4***	**1**	**0**	**0**	**0**	***1***	**0**	**1**	**0**	**7**	*8*
5:15 PM	**1**	**0**	**2**	**0**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**4**	***7***
5:30 PM	1	0	0	0	*1*	1	0	1	0	*2*	0	4	0	1	*5*
5:45 PM	2	0	1	1	*4*	0	0	2	0	*2*	0	4	0	2	*6*
6:00 PM	0	0	1	1	*2*	0	0	2	1	*3*	0	0	0	4	*4*
6:15 PM	0	0	0	1	*1*	0	0	1	0	*1*	0	5	0	3	*8*
Count Total	21	0	14	10	*45*	7	0	13	3	*23*	0	30	0	72	*102*
Peak Hr	**9**	**0**	**4**	**4**	***17***	**4**	**0**	**3**	**0**	***7***	**0**	**11**	**0**	**20**	***31***

36th St
Fielding Ave



Date: 10/14/2020
Count Period: 3:30 PM to 6:30 PM
Peak Hour: 4:30 PM to 5:30 PM



	HV %:	PHF
EB	1.5%	0.89
WB	-	-
NB	-	-
SB	0.9%	0.97
TOTAL	1.1%	0.98

Three-Hour Count Summaries

Interval Start		Fielding Ave Eastbound				0 Westbound				I-5 SB On-Ramp Northbound				36th St Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:30 PM		0	86	0	7	0	0	0	0	0	0	0	0	0	0	48	87	228	0
4:45 PM		0	67	0	4	0	0	0	0	0	0	0	0	0	0	53	91	215	0
5:00 PM		0	73	0	8	0	0	0	0	0	0	0	0	0	0	57	88	226	0
5:15 PM		0	78	0	7	0	0	0	0	0	0	0	0	0	0	47	91	223	892
Peak Hour	All	0	304	0	26	0	0	0	0	0	0	0	0	0	0	205	357	892	0
	HV	0	5	0	0	0	0	0	0	0	0	0	0	0	0	4	1	10	0
	HV%	-	2%	-	0%	-	-	-	-	-	-	-	-	-	-	2%	0%	1%	0

Note: For all three-hour count summary, see next page.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:30 PM	2	0	0	1	*3*	0	0	0	1	*1*	0	0	0	0	*0*
4:45 PM	1	0	0	1	*2*	0	0	0	1	*1*	0	0	0	0	*0*
5:00 PM	1	0	0	2	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	1	0	0	1	*2*	1	0	0	0	*1*	0	0	0	0	*0*
Peak Hour	5	0	0	5	*10*	1	0	0	2	*3*	0	0	0	0	*0*

Three-Hour Count Summaries

Interval Start	Fielding Ave				0				I-5 SB On-Ramp				36th St				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		
3:30 PM	0	54	0	19	0	0	0	0	0	0	0	0	0	0	57	59	189	0
3:45 PM	0	70	0	8	0	0	0	0	0	0	0	0	0	0	47	65	190	0
4:00 PM	0	67	0	5	0	0	0	0	0	0	0	0	0	0	57	68	197	0
4:15 PM	0	59	0	10	0	0	0	0	0	0	0	0	0	0	62	77	208	784
4:30 PM	**0**	**86**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**48**	**87**	**228**	823
4:45 PM	**0**	**67**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**53**	**91**	**215**	848
5:00 PM	**0**	**73**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**57**	**88**	**226**	877
5:15 PM	**0**	**78**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**47**	**91**	**223**	**892**
5:30 PM	0	63	0	7	0	0	0	0	0	0	0	0	0	0	41	95	206	870
5:45 PM	0	52	0	12	0	0	0	0	0	0	0	0	0	0	33	71	168	823
6:00 PM	0	42	0	5	0	0	0	0	0	0	0	0	0	0	40	77	164	761
6:15 PM	0	58	0	1	0	0	0	0	0	0	0	0	0	0	30	62	151	689
Count Total	0	769	0	93	0	0	0	0	0	0	0	0	0	0	572	931	2,365	0
Peak Hour All	**0**	**304**	**0**	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**205**	**357**	**892**	**0**
Peak Hour HV	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**10**	**0**
Peak Hour HV%	**-**	**2%**	**-**	**0%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2%**	**0%**	**1%**	**0**

Note: Three-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
3:30 PM	0	0	0	2	*2*	0	0	0	0	*0*	0	0	0	0	*0*
3:45 PM	3	0	0	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
4:00 PM	2	0	0	0	*2*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	1	0	0	3	*4*	0	0	0	2	*2*	0	0	0	0	*0*
4:30 PM	**2**	**0**	**0**	**1**	***3***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**1**	**0**	**0**	**1**	***2***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
5:30 PM	0	0	0	2	*2*	1	0	0	0	*1*	0	0	0	0	*0*
5:45 PM	1	0	0	1	*2*	3	0	0	0	*3*	0	0	0	0	*0*
6:00 PM	1	0	0	2	*3*	0	0	0	2	*2*	0	0	0	0	*0*
6:15 PM	0	0	0	0	*0*	1	0	0	0	*1*	0	0	0	0	*0*
Count Total	13	0	0	16	*29*	6	0	0	6	*12*	0	0	0	0	*0*
Peak Hr	**5**	**0**	**0**	**5**	***10***	**1**	**0**	**0**	**2**	***3***	**0**	**0**	**0**	**0**	***0***

Three-Hour Count Summaries - Heavy Vehicles

Interval Start	Fielding Ave				0				I-5 SB On-Ramp				36th St				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		
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0
3:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	4	12
4:30 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**	13
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	11
5:00 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	12
5:15 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**10**
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	9
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	2	9
6:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	3	9
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7
Count Total	0	12	0	1	0	0	0	0	0	0	0	0	0	0	11	5	29	0
Peak Hour	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**10**	**0**

Three-Hour Count Summaries - Bikes

Interval Start	Fielding Ave			0			I-5 SB On-Ramp			36th St			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	2	2	2
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	3
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	4
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
5:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**3**
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	3
5:45 PM	3	0	0	0	0	0	0	0	0	0	0	0	3	5
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	7
6:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	7
Count Total	6	0	0	0	0	0	0	0	0	0	0	6	12	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**0**

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

Appendix B: LOS Definitions

Highway Capacity Manual 2010/6th Edition

Signalized intersection level of service (LOS) is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle (in seconds) during a specified time period (e.g., weekday PM peak hour). Control delay is a complex measure based on many variables, including signal phasing and coordination (i.e., progression of movements through the intersection and along the corridor), signal cycle length, and traffic volumes with respect to intersection capacity and resulting queues. Table 1 summarizes the LOS criteria for signalized intersections, as described in the *Highway Capacity Manual 2010* and 6th Edition (Transportation Research Board, 2010 and 2016, respectively).

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 and 6th Edition*, Transportation Research Board, 2010 and 2016, respectively.

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.

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way stop and two-way stop control. All-way stop control intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major-street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. Table 2 shows LOS criteria for unsignalized 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 and 6th Edition*, Transportation Research Board, 2010 and 2016, respectively.

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.

Appendix C: LOS Worksheets

Movement	WBL2	WBL	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	95	20	840	75	5	315	165	660	445	295	5	5
Future Volume (vph)	95	20	840	75	5	315	165	660	445	295	5	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0			5.0	5.0	5.0	5.0	5.0		
Lane Util. Factor		1.00	0.91			0.95	0.95	1.00	0.91	0.91		
Frpb, ped/bikes		0.97	0.93			1.00	1.00	0.97	1.00	1.00		
Flpb, ped/bikes		1.00	1.00			0.99	1.00	1.00	0.99	1.00		
Frt		0.90	0.85			1.00	1.00	0.85	1.00	1.00		
Flt Protected		0.98	1.00			0.95	0.98	1.00	0.95	0.98		
Satd. Flow (prot)		1628	2723			1687	1750	1554	1596	3298		
Flt Permitted		0.98	1.00			0.41	0.65	1.00	0.55	0.70		
Satd. Flow (perm)		1628	2723			734	1166	1554	921	2371		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	101	21	894	80	5	335	176	702	473	314	5	5
RTOR Reduction (vph)	0	0	21	0	0	0	0	393	0	1	0	0
Lane Group Flow (vph)	0	372	703	0	0	226	290	309	241	555	0	0
Confl. Peds. (#/hr)	2	10	42		10	11		22	22		11	
Confl. Bikes (#/hr)			6	6				5			5	5
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	1%	1%	2%	2%	2%	2%
Turn Type	Perm	Prot	Perm			Perm	NA	Perm	Perm	NA		
Protected Phases		8					2			6		
Permitted Phases	8		8			2		2	6			
Actuated Green, G (s)		19.7	19.7			23.4	23.4	23.4	23.4	23.4		
Effective Green, g (s)		19.7	19.7			23.4	23.4	23.4	23.4	23.4		
Actuated g/C Ratio		0.37	0.37			0.44	0.44	0.44	0.44	0.44		
Clearance Time (s)		5.0	5.0			5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		603	1010			323	513	684	405	1044		
v/s Ratio Prot												
v/s Ratio Perm		0.23	c0.26			c0.31	0.25	0.20	0.26	0.23		
v/c Ratio		0.62	0.70			0.70	0.57	0.45	0.60	0.53		
Uniform Delay, d1		13.6	14.2			12.0	11.1	10.4	11.3	10.8		
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2		1.9	2.1			6.5	1.4	0.5	2.3	0.5		
Delay (s)		15.5	16.3			18.5	12.5	10.9	13.6	11.4		
Level of Service		B	B			B	B	B	B	B		
Approach Delay (s)		16.0					12.7			12.0		
Approach LOS		B					B			B		

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	53.1	Sum of lost time (s)	10.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	15	5	0	5	20	515	5	5	760	5
Future Vol, veh/h	5	0	15	5	0	5	20	515	5	5	760	5
Conflicting Peds, #/hr	18	0	18	29	0	29	18	0	29	29	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	5	5	5	0	0	0	1	1	1	1	1	1
Mvmt Flow	6	0	17	6	0	6	23	592	6	6	874	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1278	1580	487	1148	1580	357	898	0	0	627	0	0
Stage 1	907	907	-	670	670	-	-	-	-	-	-	-
Stage 2	371	673	-	478	910	-	-	-	-	-	-	-
Critical Hdwy	7.6	6.6	7	7.5	6.5	6.9	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.6	5.6	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	5.6	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	3.5	4	3.3	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	120	105	518	156	110	645	758	-	-	958	-	-
Stage 1	291	346	-	417	459	-	-	-	-	-	-	-
Stage 2	613	445	-	543	356	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	110	97	495	138	101	610	745	-	-	932	-	-
Mov Cap-2 Maneuver	110	97	-	138	101	-	-	-	-	-	-	-
Stage 1	277	338	-	393	432	-	-	-	-	-	-	-
Stage 2	572	419	-	506	348	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.9	21.9	0.4	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	745	-	-	264	225	932	-	-
HCM Lane V/C Ratio	0.031	-	-	0.087	0.051	0.006	-	-
HCM Control Delay (s)	10	-	-	19.9	21.9	8.9	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

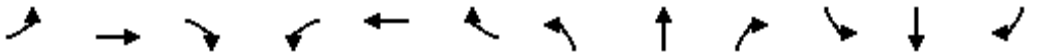
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	35	5	0	5	30	560	0	5	790	10
Future Vol, veh/h	10	0	35	5	0	5	30	560	0	5	790	10
Conflicting Peds, #/hr	29	0	29	26	0	26	29	0	26	26	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	11	0	39	6	0	6	33	622	0	6	878	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1331	1639	503	1194	1644	366	918	0	0	648	0	0
Stage 1	925	925	-	714	714	-	-	-	-	-	-	-
Stage 2	406	714	-	480	930	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	115	101	519	145	101	637	745	-	-	941	-	-
Stage 1	294	351	-	393	438	-	-	-	-	-	-	-
Stage 2	598	438	-	541	349	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	104	91	491	122	91	604	724	-	-	918	-	-
Mov Cap-2 Maneuver	104	91	-	122	91	-	-	-	-	-	-	-
Stage 1	273	339	-	366	407	-	-	-	-	-	-	-
Stage 2	550	407	-	481	337	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.4	23.8	0.5	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	724	-	-	269	203	918	-	-
HCM Lane V/C Ratio	0.046	-	-	0.186	0.055	0.006	-	-
HCM Control Delay (s)	10.2	-	-	21.4	23.8	8.9	-	-
HCM Lane LOS	B	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.2	0	-	-



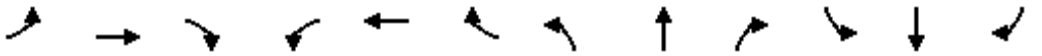
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	240	10	395	15	25	25	350	415	30	20	560	310
Future Volume (veh/h)	240	10	395	15	25	25	350	415	30	20	560	310
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	0.99		0.94	0.97		0.91
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	1900	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	247	10	407	15	26	26	361	428	31	21	577	320
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	0	0	0
Cap, veh/h	384	13	545	96	163	129	492	1437	104	397	1009	411
Arrive On Green	0.36	0.36	0.36	0.36	0.36	0.36	0.17	0.43	0.43	0.03	0.28	0.28
Sat Flow, veh/h	1352	37	1524	115	455	362	1795	3370	243	1810	3610	1470
Grp Volume(v), veh/h	247	0	417	67	0	0	361	226	233	21	577	320
Grp Sat Flow(s),veh/h/ln	1352	0	1562	932	0	0	1795	1791	1822	1810	1805	1470
Q Serve(g_s), s	5.9	0.0	18.7	0.6	0.0	0.0	10.4	6.6	6.7	0.6	10.9	16.0
Cycle Q Clear(g_c), s	25.1	0.0	18.7	19.2	0.0	0.0	10.4	6.6	6.7	0.6	10.9	16.0
Prop In Lane	1.00		0.98	0.22		0.39	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	384	0	558	389	0	0	492	763	777	397	1009	411
V/C Ratio(X)	0.64	0.00	0.75	0.17	0.00	0.00	0.73	0.30	0.30	0.05	0.57	0.78
Avail Cap(c_a), veh/h	426	0	607	389	0	0	1079	763	777	596	1132	461
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	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.8	0.0	22.4	18.0	0.0	0.0	15.8	15.0	15.0	19.3	24.6	26.5
Incr Delay (d2), s/veh	2.8	0.0	4.6	0.2	0.0	0.0	2.6	0.2	0.2	0.1	0.5	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	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	0.0	7.2	0.8	0.0	0.0	4.3	2.6	2.7	0.3	4.6	6.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	0.0	27.1	18.2	0.0	0.0	18.4	15.2	15.3	19.4	25.2	33.9
LnGrp LOS	C	A	C	B	A	A	B	B	B	B	C	C
Approach Vol, veh/h		664			67			820			918	
Approach Delay, s/veh		28.0			18.2			16.6			28.1	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	39.0		33.5	18.9	27.3		33.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	11.0	30.0		31.0	40.0	25.0		15.0				
Max Q Clear Time (g_c+I1), s	2.6	8.7		27.1	12.4	18.0		21.2				
Green Ext Time (p_c), s	0.0	2.7		1.4	1.5	2.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		24.0	
HCM 6th LOS		C	

Notes

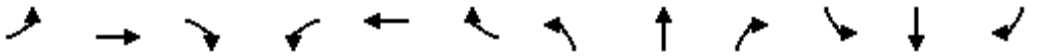
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	0	510	185	190	235	270	450	0	0	690	280
Future Volume (vph)	110	0	510	185	190	235	270	450	0	0	690	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	1745		1561	1728	1818	1546	1727	3455			3421	1487
Flt Permitted	0.95		1.00	0.95	1.00	1.00	0.20	1.00			1.00	1.00
Satd. Flow (perm)	1745		1561	1728	1818	1546	371	3455			3421	1487
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	111	0	515	187	192	237	273	455	0	0	697	283
RTOR Reduction (vph)	0	0	457	0	0	193	0	0	0	0	0	177
Lane Group Flow (vph)	111	0	58	187	192	44	273	455	0	0	697	106
Confl. Peds. (#/hr)							2		1	1		2
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot		Perm	Split	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases	4			3	3		5	2			6	
Permitted Phases			4			3	2					6
Actuated Green, G (s)	10.2		10.2	16.8	16.8	16.8	48.9	48.9			28.7	28.7
Effective Green, g (s)	10.2		10.2	16.8	16.8	16.8	48.9	48.9			28.7	28.7
Actuated g/C Ratio	0.11		0.11	0.18	0.18	0.18	0.54	0.54			0.32	0.32
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	4.0			4.0	4.0
Lane Grp Cap (vph)	195		175	319	336	285	426	1858			1080	469
v/s Ratio Prot	c0.06			c0.11	0.11		c0.11	0.13			0.20	
v/s Ratio Perm			0.04			0.03	c0.24					0.07
v/c Ratio	0.57		0.33	0.59	0.57	0.15	0.64	0.24			0.65	0.23
Uniform Delay, d1	38.3		37.2	33.9	33.8	31.1	13.8	11.2			26.7	22.9
Progression Factor	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	3.8		1.1	2.7	2.3	0.3	3.3	0.1			1.5	0.3
Delay (s)	42.0		38.3	36.6	36.1	31.3	17.1	11.3			28.2	23.2
Level of Service	D		D	D	D	C	B	B			C	C
Approach Delay (s)		39.0			34.4			13.5			26.8	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.9	Sum of lost time (s)	25.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	975	80	330	5	50	20	300	370	5	10	110	370
Future Volume (veh/h)	975	80	330	5	50	20	300	370	5	10	110	370
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		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	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	1054	0	337	5	51	20	306	378	5	10	112	378
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	1309	0	794	96	69	27	515	725	10	324	494	411
Arrive On Green	0.36	0.00	0.36	0.05	0.05	0.05	0.14	0.39	0.39	0.01	0.26	0.26
Sat Flow, veh/h	3591	0	1559	1781	1276	501	1795	1856	25	1781	1870	1559
Grp Volume(v), veh/h	1054	0	337	5	0	71	306	0	383	10	112	378
Grp Sat Flow(s),veh/h/ln	1795	0	1559	1781	0	1777	1795	0	1881	1781	1870	1559
Q Serve(g_s), s	29.9	0.0	15.5	0.3	0.0	4.5	13.4	0.0	17.7	0.5	5.3	26.7
Cycle Q Clear(g_c), s	29.9	0.0	15.5	0.3	0.0	4.5	13.4	0.0	17.7	0.5	5.3	26.7
Prop In Lane	1.00		1.00	1.00		0.28	1.00		0.01	1.00		1.00
Lane Grp Cap(c), veh/h	1309	0	794	96	0	96	515	0	735	324	494	411
V/C Ratio(X)	0.81	0.00	0.42	0.05	0.00	0.74	0.59	0.00	0.52	0.03	0.23	0.92
Avail Cap(c_a), veh/h	2534	0	1325	267	0	267	705	0	735	691	743	619
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	0.0	17.7	50.9	0.0	52.8	23.1	0.0	26.4	29.7	32.7	40.5
Incr Delay (d2), s/veh	1.2	0.0	0.4	0.1	0.0	4.1	0.4	0.0	0.3	0.0	0.1	10.9
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	13.0	0.0	5.5	0.1	0.0	2.1	5.6	0.0	7.8	0.2	2.4	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	0.0	18.0	50.9	0.0	57.0	23.5	0.0	26.7	29.8	32.7	51.4
LnGrp LOS	C	A	B	D	A	E	C	A	C	C	C	D
Approach Vol, veh/h		1391			76			689			500	
Approach Delay, s/veh		29.8			56.6			25.3			46.8	
Approach LOS		C			E			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	49.3		46.3	21.0	34.9		11.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	25.0	38.0		80.0	28.0	45.0		17.0				
Max Q Clear Time (g_c+I1), s	2.5	19.7		31.9	15.4	28.7		6.5				
Green Ext Time (p_c), s	0.0	0.8		9.4	0.5	1.2		0.1				

Intersection Summary			
HCM 6th Ctrl Delay		32.6	
HCM 6th LOS		C	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

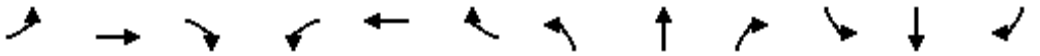
Intersection	
Int Delay, s/veh	9.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	285	10	0	240	385	0
Future Vol, veh/h	285	10	0	240	385	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	1	1	0	0
Mvmt Flow	300	11	0	253	405	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	658	406	-	0	-	0
Stage 1	405	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	429	645	0	-	-	0
Stage 1	673	-	0	-	-	0
Stage 2	789	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	429	644	-	-	-	-
Mov Cap-2 Maneuver	429	-	-	-	-	-
Stage 1	673	-	-	-	-	-
Stage 2	789	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	30	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	429	644	-
HCM Lane V/C Ratio	-	0.699	0.016	-
HCM Control Delay (s)	-	30.7	10.7	-
HCM Lane LOS	-	D	B	-
HCM 95th %tile Q(veh)	-	5.3	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	860	100	225	630	80	200	250	455	125	230	45
Future Volume (vph)	40	860	100	225	630	80	200	250	455	125	230	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	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	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3383		1726	3455	1497	1728	1818	1523	1728	1767	
Flt Permitted	0.95	1.00		0.18	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1728	3383		330	3455	1497	1728	1818	1523	1728	1767	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	41	887	103	232	649	82	206	258	469	129	237	46
RTOR Reduction (vph)	0	6	0	0	0	54	0	0	310	0	5	0
Lane Group Flow (vph)	41	984	0	232	649	28	206	258	159	129	278	0
Confl. Peds. (#/hr)	4		12	12		4	8					8
Confl. Bikes (#/hr)			5			2			2			3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases				6		6			4			
Actuated Green, G (s)	25.3	52.6		58.7	43.0	43.0	19.1	20.3	20.3	19.1	20.3	
Effective Green, g (s)	25.3	52.6		58.7	43.0	43.0	19.1	20.3	20.3	19.1	20.3	
Actuated g/C Ratio	0.20	0.41		0.46	0.34	0.34	0.15	0.16	0.16	0.15	0.16	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	342	1393		323	1163	504	258	289	242	258	280	
v/s Ratio Prot	0.02	c0.29		c0.09	0.19		c0.12	0.14		0.07	c0.16	
v/s Ratio Perm				0.24		0.02			0.10			
v/c Ratio	0.12	0.71		0.72	0.56	0.05	0.80	0.89	0.66	0.50	0.99	
Uniform Delay, d1	42.1	31.1		23.3	34.6	28.6	52.4	52.6	50.4	49.9	53.6	
Progression Factor	1.69	0.35		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	1.3		7.4	0.6	0.0	16.5	27.8	6.9	2.1	51.6	
Delay (s)	71.3	12.1		30.8	35.2	28.7	68.9	80.5	57.3	52.0	105.2	
Level of Service	E	B		C	D	C	E	F	E	D	F	
Approach Delay (s)		14.4			33.6			66.3			88.6	
Approach LOS		B			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	43.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	5	5	30	0	75	5	775	75	95	450	5
Future Vol, veh/h	0	5	5	30	0	75	5	775	75	95	450	5
Conflicting Peds, #/hr	1	0	1	2	0	2	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	0	6	6	33	0	83	6	861	83	106	500	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1674	1674	506	1640	1636	907	507	0	0	946	0	0
Stage 1	716	716	-	917	917	-	-	-	-	-	-	-
Stage 2	958	958	-	723	719	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	77	97	570	81	102	337	1058	-	-	725	-	-
Stage 1	424	437	-	329	354	-	-	-	-	-	-	-
Stage 2	312	338	-	421	436	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	51	82	569	67	86	336	1057	-	-	724	-	-
Mov Cap-2 Maneuver	51	82	-	67	86	-	-	-	-	-	-	-
Stage 1	421	373	-	327	351	-	-	-	-	-	-	-
Stage 2	233	335	-	350	372	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	32.3	76.2	0	1.9
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1057	-	-	143	156	724	-	-
HCM Lane V/C Ratio	0.005	-	-	0.078	0.748	0.146	-	-
HCM Control Delay (s)	8.4	-	-	32.3	76.2	10.8	-	-
HCM Lane LOS	A	-	-	D	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	4.6	0.5	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	15	790	60	15	490
Future Vol, veh/h	60	15	790	60	15	490
Conflicting Peds, #/hr	18	18	0	18	18	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	63	16	832	63	16	516

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1448	900	0	0	913	0
Stage 1	882	-	-	-	-	-
Stage 2	566	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	145	339	-	-	751	-
Stage 1	406	-	-	-	-	-
Stage 2	570	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	137	327	-	-	738	-
Mov Cap-2 Maneuver	137	-	-	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	50.2	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	155	738	-
HCM Lane V/C Ratio	-	-	0.509	0.021	-
HCM Control Delay (s)	-	-	50.2	10	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	2.5	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	515	850	490	60
Future Vol, veh/h	0	0	515	850	490	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	0	0	531	876	505	62

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2474	536	567	0	-	0
Stage 1	536	-	-	-	-	-
Stage 2	1938	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	33	549	1010	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	125	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	16	549	1010	-	-	-
Mov Cap-2 Maneuver	16	-	-	-	-	-
Stage 1	280	-	-	-	-	-
Stage 2	125	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	4.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1010	-	-	-	-
HCM Lane V/C Ratio	0.526	-	-	-	-
HCM Control Delay (s)	12.4	-	0	-	-
HCM Lane LOS	B	-	A	-	-
HCM 95th %tile Q(veh)	3.2	-	-	-	-

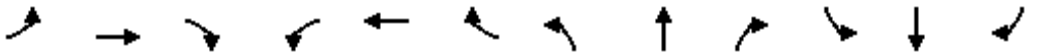
Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	60	5	5	60	5	5	15	15	10	20	10
Future Vol, veh/h	10	60	5	5	60	5	5	15	15	10	20	10
Conflicting Peds, #/hr	5	0	4	6	0	7	4	0	6	7	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	70	6	6	70	6	6	17	17	12	23	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	141	111	40	142	109	40	40	0	0	41	0	0
Stage 1	58	58	-	45	45	-	-	-	-	-	-	-
Stage 2	83	53	-	97	64	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	833	783	1037	832	785	1037	1583	-	-	1581	-	-
Stage 1	959	851	-	974	861	-	-	-	-	-	-	-
Stage 2	930	855	-	914	846	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	755	764	1026	753	766	1023	1575	-	-	1570	-	-
Mov Cap-2 Maneuver	755	764	-	753	766	-	-	-	-	-	-	-
Stage 1	950	840	-	963	852	-	-	-	-	-	-	-
Stage 2	840	846	-	822	835	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	10.2	1	1.8
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1575	-	-	776	779	1570	-	-
HCM Lane V/C Ratio	0.004	-	-	0.112	0.104	0.007	-	-
HCM Control Delay (s)	7.3	0	-	10.2	10.2	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0	-	-



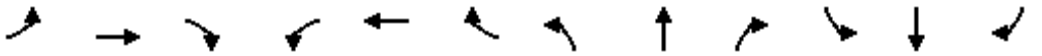
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	980	150	190	800	0	0	0	0	525	0	345
Future Volume (veh/h)	0	980	150	190	800	0	0	0	0	525	0	345
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		1.00				1.00		1.00
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	0	1885	1885	1885	1885	0				1885	1885	1885
Adj Flow Rate, veh/h	0	1000	153	194	816	0				536	0	352
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	1	1	0				1	1	1
Cap, veh/h	0	1136	174	227	1972	0				588	0	521
Arrive On Green	0.00	0.37	0.37	0.13	0.55	0.00				0.33	0.00	0.33
Sat Flow, veh/h	0	3172	470	1795	3676	0				1795	0	1593
Grp Volume(v), veh/h	0	581	572	194	816	0				536	0	352
Grp Sat Flow(s),veh/h/ln	0	1791	1757	1795	1791	0				1795	0	1593
Q Serve(g_s), s	0.0	30.3	30.4	10.6	13.2	0.0				28.6	0.0	19.1
Cycle Q Clear(g_c), s	0.0	30.3	30.4	10.6	13.2	0.0				28.6	0.0	19.1
Prop In Lane	0.00		0.27	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	661	648	227	1972	0				588	0	521
V/C Ratio(X)	0.00	0.88	0.88	0.85	0.41	0.00				0.91	0.00	0.68
Avail Cap(c_a), veh/h	0	694	681	261	1972	0				613	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	29.4	29.5	42.7	13.1	0.0				32.2	0.0	29.0
Incr Delay (d2), s/veh	0.0	12.5	13.0	21.7	0.2	0.0				18.0	0.0	3.6
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	0.0	14.9	14.7	6.0	5.0	0.0				15.0	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	42.0	42.4	64.4	13.3	0.0				50.3	0.0	32.6
LnGrp LOS	A	D	D	E	B	A				D	A	C
Approach Vol, veh/h		1153			1010						888	
Approach Delay, s/veh		42.2			23.1						43.3	
Approach LOS		D			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	18.1	43.2		38.6		61.3
Change Period (Y+Rc), s	5.5	6.3		5.9		6.3
Max Green Setting (Gmax), s	14.5	38.7		34.1		38.7
Max Q Clear Time (g_c+I1), s	12.6	32.4		30.6		15.2
Green Ext Time (p_c), s	0.1	4.5		2.0		8.0

Intersection Summary		
HCM 6th Ctrl Delay		36.2
HCM 6th LOS		D

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	845	185	25	610	240	155	100	85	70	45	255
Future Volume (vph)	355	845	185	25	610	240	155	100	85	70	45	255
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	4.0
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	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.97		1.00	0.96		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3325		1711	3234		1745	1690		1728	1818	1546
Flt Permitted	0.12	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	217	3325		1711	3234		1745	1690		1728	1818	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	889	195	26	642	253	163	105	89	74	47	268
RTOR Reduction (vph)	0	13	0	0	31	0	0	20	0	0	0	0
Lane Group Flow (vph)	374	1071	0	26	864	0	163	174	0	74	47	268
Confl. Peds. (#/hr)	11		17	17		11			11	11		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		Prot	NA	Free
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases	2											Free
Actuated Green, G (s)	73.3	52.6		15.7	43.0		19.1	20.3		19.1	20.3	127.7
Effective Green, g (s)	73.3	52.6		15.7	43.0		19.1	20.3		19.1	20.3	127.7
Actuated g/C Ratio	0.57	0.41		0.12	0.34		0.15	0.16		0.15	0.16	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	423	1369		210	1088		260	268		258	289	1546
v/s Ratio Prot	c0.17	0.32		0.02	0.27		c0.09	c0.10		0.04	0.03	
v/s Ratio Perm	c0.33											0.17
v/c Ratio	0.88	0.78		0.12	0.79		0.63	0.65		0.29	0.16	0.17
Uniform Delay, d1	33.3	32.6		49.9	38.4		51.0	50.4		48.2	46.4	0.0
Progression Factor	1.00	1.00		1.25	0.52		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	19.6	3.0		0.2	3.5		5.3	5.9		0.8	0.4	0.2
Delay (s)	52.9	35.6		62.8	23.5		56.2	56.3		49.1	46.7	0.2
Level of Service	D	D		E	C		E	E		D	D	A
Approach Delay (s)		40.0			24.6			56.3			15.2	
Approach LOS		D			C			E			B	

Intersection Summary			
HCM 2000 Control Delay	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	127.7	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBU	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	1375	65	5	50	920	15	55
Future Vol, veh/h	1375	65	5	50	920	15	55
Conflicting Peds, #/hr	0	20	0	20	0	20	20
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	-	-	-	50	-	0	200
Veh in Median Storage, #	0	-	-	-	0	1	-
Grade, %	0	-	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	0	0
Mvmt Flow	1418	67	5	52	948	15	57

Major/Minor	Major1		Major2			Minor1	
Conflicting Flow All	0	0	1485	1505	0	2080	783
Stage 1	-	-	-	-	-	1472	-
Stage 2	-	-	-	-	-	608	-
Critical Hdwy	-	-	6.42	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.51	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	163	446	-	47	341
Stage 1	-	-	-	-	-	181	-
Stage 2	-	-	-	-	-	512	-
Platoon blocked, %	-	-			-		
Mov Cap-1 Maneuver	-	-	364	364	-	38	329
Mov Cap-2 Maneuver	-	-	-	-	-	128	-
Stage 1	-	-	-	-	-	178	-
Stage 2	-	-	-	-	-	424	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	22.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	128	329	-	-	364	-
HCM Lane V/C Ratio	0.121	0.172	-	-	0.156	-
HCM Control Delay (s)	37	18.2	-	-	16.7	-
HCM Lane LOS	E	C	-	-	C	-
HCM 95th %tile Q(veh)	0.4	0.6	-	-	0.5	-

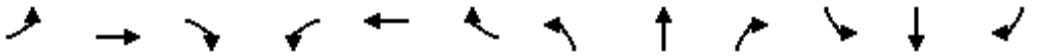
Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1365	30	0	900	30	10	5	5	5	0	65
Future Vol, veh/h	40	1365	30	0	900	30	10	5	5	5	0	65
Conflicting Peds, #/hr	9	0	17	40	0	32	17	0	40	32	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	42	1437	32	0	947	32	11	5	5	5	0	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1011	0	0	-	-	0	2045	2565	792	1840	2565	539
Stage 1	-	-	-	-	-	-	1554	1554	-	995	995	-
Stage 2	-	-	-	-	-	-	491	1011	-	845	1570	-
Critical Hdwy	4.12	-	-	-	-	-	7.5	6.5	6.9	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	-	-	-	3.5	4	3.3	3.51	4.01	3.31
Pot Cap-1 Maneuver	687	-	-	0	-	-	33	27	336	47	26	489
Stage 1	-	-	-	0	-	-	121	176	-	264	323	-
Stage 2	-	-	-	0	-	-	533	320	-	326	171	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	666	-	-	-	-	-	26	24	318	39	23	466
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	102	-	136	105	-
Stage 1	-	-	-	-	-	-	112	162	-	240	313	-
Stage 2	-	-	-	-	-	-	447	310	-	280	158	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	44.4	16.1
HCM LOS			E	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	112	666	-	-	-	-	397
HCM Lane V/C Ratio	0.188	0.063	-	-	-	-	0.186
HCM Control Delay (s)	44.4	10.8	-	-	-	-	16.1
HCM Lane LOS	E	B	-	-	-	-	C
HCM 95th %tile Q(veh)	0.7	0.2	-	-	-	-	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1125	75	10	830	15	80	15	10	140	45	65
Future Volume (veh/h)	40	1125	75	10	830	15	80	15	10	140	45	65
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	42	1184	79	11	874	16	84	16	11	147	47	68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	371	1617	108	233	1591	29	134	80	55	194	76	110
Arrive On Green	0.05	0.48	0.48	0.02	0.44	0.44	0.07	0.08	0.08	0.11	0.11	0.11
Sat Flow, veh/h	1795	3400	227	1795	3596	66	1810	1033	711	1810	688	996
Grp Volume(v), veh/h	42	623	640	11	435	455	84	0	27	147	0	115
Grp Sat Flow(s),veh/h/ln	1795	1791	1836	1795	1791	1871	1810	0	1744	1810	0	1684
Q Serve(g_s), s	0.8	17.3	17.4	0.2	11.1	11.1	2.8	0.0	0.9	4.9	0.0	4.0
Cycle Q Clear(g_c), s	0.8	17.3	17.4	0.2	11.1	11.1	2.8	0.0	0.9	4.9	0.0	4.0
Prop In Lane	1.00		0.12	1.00		0.04	1.00		0.41	1.00		0.59
Lane Grp Cap(c), veh/h	371	852	873	233	793	828	134	0	134	194	0	186
V/C Ratio(X)	0.11	0.73	0.73	0.05	0.55	0.55	0.63	0.00	0.20	0.76	0.00	0.62
Avail Cap(c_a), veh/h	572	1302	1335	493	1302	1360	731	0	705	731	0	681
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.2	13.0	13.1	11.0	12.7	12.7	27.8	0.0	26.8	26.8	0.0	26.3
Incr Delay (d2), s/veh	0.1	1.2	1.2	0.1	0.6	0.6	4.7	0.0	1.0	5.9	0.0	4.7
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	0.3	6.1	6.3	0.1	4.0	4.1	1.3	0.0	0.4	2.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.4	14.3	14.3	11.1	13.3	13.3	32.6	0.0	27.8	32.7	0.0	31.0
LnGrp LOS	A	B	B	B	B	B	C	A	C	C	A	C
Approach Vol, veh/h		1305			901			111			262	
Approach Delay, s/veh		14.1			13.3			31.4			32.0	
Approach LOS		B			B			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	34.4	9.6	11.8	8.1	32.4	11.6	9.8
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	10.0	45.0	25.0	25.0	10.0	45.0	25.0	25.0
Max Q Clear Time (g_c+I1), s	2.2	19.4	4.8	6.0	2.8	13.1	6.9	2.9
Green Ext Time (p_c), s	0.0	10.1	0.2	0.7	0.0	6.6	0.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	16.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

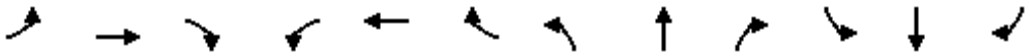
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBR	NWL	NWR
Lane Configurations										
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None	-	-
Storage Length	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	0	-	16965	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor2	
Conflicting Flow All	-	0	-	-	-	0	-	1
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	3.318
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	1084
Stage 1	0	-	0	0	-	-	0	-
Stage 2	0	-	0	0	-	-	0	-
Platoon blocked, %		-			-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	1084
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-



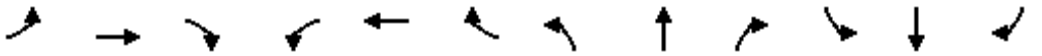
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	625	415	260	485	25	160	45	260	57	35	20
Future Volume (veh/h)	25	625	415	260	485	25	160	45	260	57	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	27	665	0	277	516	27	170	48	277	61	37	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	2	2	2
Cap, veh/h	439	1783		381	1721	90	236	67	313	246	144	70
Arrive On Green	0.50	0.50	0.00	0.50	0.50	0.50	0.36	0.36	0.36	0.36	0.36	0.36
Sat Flow, veh/h	868	3676	0	776	3457	181	498	186	869	506	399	194
Grp Volume(v), veh/h	27	665	0	277	267	276	495	0	0	119	0	0
Grp Sat Flow(s),veh/h/ln	868	1791	0	776	1791	1847	1554	0	0	1099	0	0
Q Serve(g_s), s	1.6	9.8	0.0	29.4	7.5	7.6	19.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.2	9.8	0.0	39.2	7.5	7.6	25.4	0.0	0.0	5.7	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.10	0.34		0.56	0.51		0.18
Lane Grp Cap(c), veh/h	439	1783		381	891	919	616	0	0	459	0	0
V/C Ratio(X)	0.06	0.37		0.73	0.30	0.30	0.80	0.00	0.00	0.26	0.00	0.00
Avail Cap(c_a), veh/h	449	1824		390	912	940	759	0	0	459	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.5	13.3	0.0	25.4	12.7	12.7	25.3	0.0	0.0	19.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	7.1	0.3	0.3	5.8	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.8	0.0	5.8	2.9	3.0	9.9	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	13.5	0.0	32.5	13.0	13.0	31.2	0.0	0.0	19.5	0.0	0.0
LnGrp LOS	B	B		C	B	B	C	A	A	B	A	A
Approach Vol, veh/h		692	A		820			495			119	
Approach Delay, s/veh		13.6			19.6			31.2			19.5	
Approach LOS		B			B			C			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		49.0		36.8		49.0		36.8				
Change Period (Y+Rc), s		6.3		5.9		6.3		5.9				
Max Green Setting (Gmax), s		43.7		29.1		43.7		39.1				
Max Q Clear Time (g_c+I1), s		11.8		7.7		41.2		27.4				
Green Ext Time (p_c), s		7.5		0.9		1.5		3.5				

Intersection Summary												
HCM 6th Ctrl Delay			20.3									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	623	88	31	587	15	52	73	36	5	67	31
Future Volume (vph)	21	623	88	31	587	15	52	73	36	5	67	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.95			0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1787	3508		1787	3561		1805	1805			1819	
Flt Permitted	0.34	1.00		0.27	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	647	3508		515	3561		1805	1805			1819	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	23	670	95	33	631	16	56	78	39	5	72	33
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	23	765	0	33	647	0	56	117	0	0	110	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	23.4	21.7		23.4	21.7		7.3	7.3			7.2	
Effective Green, g (s)	23.4	21.7		23.4	21.7		7.3	7.3			7.2	
Actuated g/C Ratio	0.41	0.38		0.41	0.38		0.13	0.13			0.13	
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	297	1326		247	1346		229	229			228	
v/s Ratio Prot	0.00	c0.22		c0.00	0.18		0.03	c0.06			c0.06	
v/s Ratio Perm	0.03			0.05								
v/c Ratio	0.08	0.58		0.13	0.48		0.24	0.51			0.48	
Uniform Delay, d1	10.3	14.2		10.5	13.6		22.6	23.4			23.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	0.1	0.6		0.2	0.3		0.6	1.9			1.6	
Delay (s)	10.4	14.8		10.8	13.8		23.1	25.3			25.0	
Level of Service	B	B		B	B		C	C			C	
Approach Delay (s)		14.7			13.7			24.6			25.0	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	19.5
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	15.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	280	5	10	150	125	5	5	20	301	20	50
Future Vol, veh/h	20	280	5	10	150	125	5	5	20	301	20	50
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	22	308	5	11	165	137	5	5	22	331	22	55
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	15.9	11.3	9.7	19.5
HCM LOS	C	B	A	C

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	17%	7%	6%	0%	81%
Vol Thru, %	17%	92%	94%	0%	5%
Vol Right, %	67%	2%	0%	100%	13%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	305	160	125	371
LT Vol	5	20	10	0	301
Through Vol	5	280	150	0	20
RT Vol	20	5	0	125	50
Lane Flow Rate	33	335	176	137	408
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.058	0.548	0.315	0.218	0.659
Departure Headway (Hd)	6.33	5.888	6.447	5.702	5.821
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	569	610	554	625	620
Service Time	4.33	3.959	4.224	3.479	3.884
HCM Lane V/C Ratio	0.058	0.549	0.318	0.219	0.658
HCM Control Delay	9.7	15.9	12.2	10.1	19.5
HCM Lane LOS	A	C	B	B	C
HCM 95th-tile Q	0.2	3.3	1.3	0.8	4.9

Intersection	
Int Delay, s/veh	10.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	105	150	135	50	296	305
Future Vol, veh/h	105	150	135	50	296	305
Conflicting Peds, #/hr	6	6	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	100	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	113	161	145	54	318	328

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1148	184	0	0	205	0
Stage 1	178	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	221	861	-	-	1372	-
Stage 1	855	-	-	-	-	-
Stage 2	369	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	168	851	-	-	1364	-
Mov Cap-2 Maneuver	168	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	282	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	31.4	0	4.2
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	168	851	1364	-
HCM Lane V/C Ratio	-	-	0.672	0.19	0.233	-
HCM Control Delay (s)	-	-	61.8	10.2	8.4	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	3.9	0.7	0.9	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	195	60	175	30	50
Future Vol, veh/h	125	195	60	175	30	50
Conflicting Peds, #/hr	0	13	12	0	13	12
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	0	0	3	3
Mvmt Flow	137	214	66	192	33	55

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	364	0	594	269
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	337	-
Critical Hdwy	-	-	4.1	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1206	-	466	767
Stage 1	-	-	-	-	784	-
Stage 2	-	-	-	-	721	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1191	-	427	749
Mov Cap-2 Maneuver	-	-	-	-	427	-
Stage 1	-	-	-	-	775	-
Stage 2	-	-	-	-	668	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	12.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1191	-
HCM Lane V/C Ratio	0.151	-	-	0.055	-
HCM Control Delay (s)	12.3	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

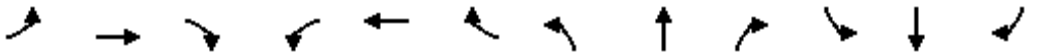
Intersection	
Int Delay, s/veh	6.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	60	25	30	35	30	15	90	145	55	25	265	90
Future Vol, veh/h	60	25	30	35	30	15	90	145	55	25	265	90
Conflicting Peds, #/hr	6	0	11	15	0	10	11	0	15	10	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	1	1
Mvmt Flow	65	27	33	38	33	16	98	158	60	27	288	98

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	821	831	363	835	850	213	397	0	0	233	0	0
Stage 1	402	402	-	399	399	-	-	-	-	-	-	-
Stage 2	419	429	-	436	451	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	296	307	686	289	300	832	1173	-	-	1340	-	-
Stage 1	629	604	-	631	606	-	-	-	-	-	-	-
Stage 2	616	587	-	603	574	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	234	264	669	224	258	812	1161	-	-	1321	-	-
Mov Cap-2 Maneuver	234	264	-	224	258	-	-	-	-	-	-	-
Stage 1	562	582	-	562	539	-	-	-	-	-	-	-
Stage 2	507	522	-	525	553	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.5	24	2.6	0.5
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1161	-	-	290	275	1321	-	-
HCM Lane V/C Ratio	0.084	-	-	0.431	0.316	0.021	-	-
HCM Control Delay (s)	8.4	0	-	26.5	24	7.8	0	-
HCM Lane LOS	A	A	-	D	C	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	2.1	1.3	0.1	-	-



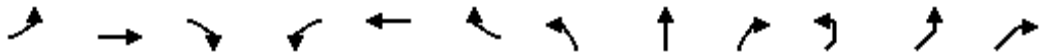
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	205	70	30	130	15	0	0	0	125	500	65
Future Volume (veh/h)	165	205	70	30	130	15	0	0	0	125	500	65
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.95	0.97		0.89				1.00		0.97
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	1885	1885	1885	1900	1900	1900				1885	1885	1885
Adj Flow Rate, veh/h	183	228	78	33	144	17				139	556	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	0	0	0				1	1	1
Cap, veh/h	523	625	206	416	529	61				264	1117	589
Arrive On Green	0.12	0.24	0.24	0.05	0.16	0.16				0.38	0.38	0.38
Sat Flow, veh/h	1795	2607	860	1810	3216	370				696	2946	1552
Grp Volume(v), veh/h	183	154	152	33	79	82				370	325	72
Grp Sat Flow(s),veh/h/ln	1795	1791	1675	1810	1805	1781				1850	1791	1552
Q Serve(g_s), s	3.6	3.2	3.4	0.7	1.7	1.8				6.9	6.2	1.3
Cycle Q Clear(g_c), s	3.6	3.2	3.4	0.7	1.7	1.8				6.9	6.2	1.3
Prop In Lane	1.00		0.51	1.00		0.21				0.38		1.00
Lane Grp Cap(c), veh/h	523	430	402	416	297	293				702	679	589
V/C Ratio(X)	0.35	0.36	0.38	0.08	0.27	0.28				0.53	0.48	0.12
Avail Cap(c_a), veh/h	910	802	750	942	808	797				1449	1403	1215
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	1.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	12.5	14.1	14.2	14.2	16.3	16.3				10.8	10.5	9.0
Incr Delay (d2), s/veh	0.4	0.5	0.6	0.1	0.5	0.5				0.9	0.7	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
%ile BackOfQ(50%),veh/ln	1.2	1.2	1.2	0.2	0.7	0.7				2.4	2.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.9	14.6	14.8	14.3	16.8	16.9				11.6	11.3	9.2
LnGrp LOS	B	B	B	B	B	B				B	B	A
Approach Vol, veh/h		489			194						767	
Approach Delay, s/veh		14.0			16.4						11.2	
Approach LOS		B			B						B	

Timer - Assigned Phs		3	4		6	7	8					
Phs Duration (G+Y+Rc), s		7.0	15.7		22.0	10.4	12.4					
Change Period (Y+Rc), s		5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s		15.0	20.0		35.0	15.0	20.0					
Max Q Clear Time (g_c+I1), s		2.7	5.4		8.9	5.6	3.8					
Green Ext Time (p_c), s		0.0	1.5		7.1	0.3	0.7					

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations												
Traffic Volume (vph)	5	62	260	36	42	36	83	166	31	47	384	47
Future Volume (vph)	5	62	260	36	42	36	83	166	31	47	384	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	5.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			1.00	1.00
Frpb, ped/bikes	1.00	0.97		1.00	0.98			1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.98	1.00
Frt	1.00	0.88		1.00	0.93			0.98			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (prot)	1787	3043		1787	1722			3447			1746	1599
Flt Permitted	0.95	1.00		0.95	1.00			0.99			0.95	1.00
Satd. Flow (perm)	1787	3043		1787	1722			3447			1746	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	67	283	39	46	39	90	180	34	51	417	51
RTOR Reduction (vph)	0	0	0	0	0	0	0	7	0	0	0	46
Lane Group Flow (vph)	5	350	0	39	85	0	0	297	0	0	468	22
Confl. Peds. (#/hr)	22		23	23		22	2		22	2	22	23
Confl. Bikes (#/hr)			2			1			1			1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Perm	Perm	Prot
Protected Phases	4	4		1	1		5	6				2
Permitted Phases										2	2	
Actuated Green, G (s)	10.1	10.1		5.6	5.6			15.1			25.1	25.1
Effective Green, g (s)	10.1	10.1		5.6	5.6			15.1			25.1	25.1
Actuated g/C Ratio	0.13	0.13		0.07	0.07			0.20			0.33	0.33
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0
Vehicle Extension (s)	2.5	2.5		0.2	0.2			2.5			3.0	3.0
Lane Grp Cap (vph)	237	404		131	127			685			577	528
v/s Ratio Prot	0.00	c0.12		0.02	c0.05							0.01
v/s Ratio Perm								0.09			c0.27	
v/c Ratio	0.02	1.38dr		0.30	0.67			10.00dl			0.81	0.04
Uniform Delay, d1	28.6	32.2		33.3	34.2			26.6			23.2	17.2
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.0	17.2		0.5	9.9			0.3			8.5	0.0
Delay (s)	28.6	49.5		33.8	44.1			27.0			31.7	17.3
Level of Service	C	D		C	D			C			C	B
Approach Delay (s)		49.2			40.9			27.0			29.9	
Approach LOS		D			D			C			C	

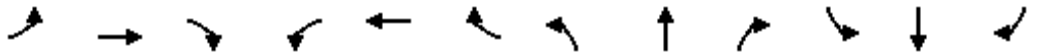
Intersection Summary			
HCM 2000 Control Delay	35.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	75.9	Sum of lost time (s)	29.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	NER2
Lane Configurations	
Traffic Volume (vph)	16
Future Volume (vph)	16
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	17
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	22
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

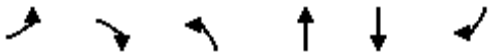
HCM 6th Edition methodology does not support more than 4 approaches.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type			Perm	Prot		Prot						
Protected Phases		4		8		8		2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	3.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



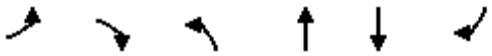
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	635	360	0	540	355	0
Future Volume (veh/h)	635	360	0	540	355	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	0	1885	1885	0
Adj Flow Rate, veh/h	706	400	0	600	394	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	0	1	1	0
Cap, veh/h	1159	532	0	1750	1750	0
Arrive On Green	0.33	0.33	0.00	0.49	0.49	0.00
Sat Flow, veh/h	3483	1598	0	3770	3770	0
Grp Volume(v), veh/h	706	400	0	600	394	0
Grp Sat Flow(s),veh/h/ln	1742	1598	0	1791	1791	0
Q Serve(g_s), s	9.5	12.5	0.0	5.8	3.5	0.0
Cycle Q Clear(g_c), s	9.5	12.5	0.0	5.8	3.5	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1159	532	0	1750	1750	0
V/C Ratio(X)	0.61	0.75	0.00	0.34	0.23	0.00
Avail Cap(c_a), veh/h	1431	656	0	1750	1750	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	0.83	0.00
Uniform Delay (d), s/veh	15.6	16.6	0.0	8.8	8.2	0.0
Incr Delay (d2), s/veh	0.7	4.5	0.0	0.5	0.2	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	3.4	4.7	0.0	2.0	1.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.4	21.2	0.0	9.3	8.5	0.0
LnGrp LOS	B	C	A	A	A	A
Approach Vol, veh/h	1106			600	394	
Approach Delay, s/veh	18.1			9.3	8.5	
Approach LOS	B			A	A	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		32.4		23.6		32.4
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		23.0		23.0		23.0
Max Q Clear Time (g_c+I1), s		7.8		14.5		5.5
Green Ext Time (p_c), s		3.6		4.2		2.4

Intersection Summary		
HCM 6th Ctrl Delay	13.8	
HCM 6th LOS	B	

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	315	25	0	0	215	370
Future Volume (Veh/h)	315	25	0	0	215	370
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	321	26	0	0	219	378
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						7
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		764	655	642	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		764	655	642	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	80		100	100	31	65
cM capacity (veh/h)	1623		80	311	316	1088

Direction, Lane #	EB 1	SB 1
Volume Total	347	597
Volume Left	321	0
Volume Right	26	378
cSH	1623	861
Volume to Capacity	0.20	0.69
Queue Length 95th (ft)	18	144
Control Delay (s)	7.3	20.5
Lane LOS	A	C
Approach Delay (s)	7.3	20.5
Approach LOS		C

Intersection Summary				
Average Delay	15.7			
Intersection Capacity Utilization	37.0%	ICU Level of Service		A
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0	0	0	0	0	0	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1	1	1	1	1	0	1	0	0	0	0	0
Stage 1	1	1	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	1	1	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1022	895	1084	1022	895	-	1622	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	895	1084	1022	895	-	1622	-	-	-	-	-
Mov Cap-2 Maneuver	-	895	-	1022	895	-	-	-	-	-	-	-
Stage 1	1022	895	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1022	895	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1622	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

Movement	WBL2	WBL	WBR	WBR2	NBL2	NBL	NBT	NBR	SBL	SBT	SBR	SBR2
Lane Configurations												
Traffic Volume (vph)	95	20	1010	85	5	465	275	685	475	405	5	20
Future Volume (vph)	95	20	1010	85	5	465	275	685	475	405	5	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	5.0			5.0	5.0	5.0	5.0	5.0		
Lane Util. Factor		1.00	0.91			0.95	0.95	1.00	0.91	0.91		
Frpb, ped/bikes		0.97	0.92			1.00	1.00	0.97	1.00	1.00		
Flpb, ped/bikes		1.00	1.00			0.99	1.00	1.00	0.99	1.00		
Frt		0.89	0.85			1.00	1.00	0.85	1.00	0.99		
Flt Protected		0.99	1.00			0.95	0.98	1.00	0.95	0.98		
Satd. Flow (prot)		1610	2699			1687	1752	1550	1598	3303		
Flt Permitted		0.99	1.00			0.33	0.50	1.00	0.36	0.61		
Satd. Flow (perm)		1610	2699			579	895	1550	603	2051		
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	101	21	1074	90	5	495	293	729	505	431	5	21
RTOR Reduction (vph)	0	0	21	0	0	0	0	384	0	3	0	0
Lane Group Flow (vph)	0	433	832	0	0	322	471	345	268	691	0	0
Confl. Peds. (#/hr)	2	10	42		10	11		22	22		11	
Confl. Bikes (#/hr)			6	6				5			5	5
Heavy Vehicles (%)	0%	0%	0%	0%	1%	1%	1%	1%	2%	2%	2%	2%
Turn Type	Perm	Prot	Perm		Perm	Perm	NA	Perm	Perm	NA		
Protected Phases		8					2			6		
Permitted Phases	8		8		2	2		2	6			
Actuated Green, G (s)		23.5	23.5			30.1	30.1	30.1	30.1	30.1		
Effective Green, g (s)		23.5	23.5			30.1	30.1	30.1	30.1	30.1		
Actuated g/C Ratio		0.37	0.37			0.47	0.47	0.47	0.47	0.47		
Clearance Time (s)		5.0	5.0			5.0	5.0	5.0	5.0	5.0		
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)		594	997			274	423	733	285	970		
v/s Ratio Prot												
v/s Ratio Perm		0.27	c0.31			c0.56	0.53	0.22	0.44	0.34		
v/c Ratio		0.73	0.83			1.18	1.11	0.47	0.94	0.71		
Uniform Delay, d1		17.3	18.3			16.8	16.8	11.4	15.9	13.3		
Progression Factor		1.00	1.00			1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2		4.5	6.1			110.3	78.3	0.5	37.5	2.5		
Delay (s)		21.8	24.4			127.1	95.0	11.8	53.4	15.8		
Level of Service		C	C			F	F	B	D	B		
Approach Delay (s)		23.5					62.0			26.3		
Approach LOS		C					E			C		

Intersection Summary			
HCM 2000 Control Delay	39.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	10.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	30	5	0	5	35	655	5	5	955	20
Future Vol, veh/h	20	0	30	5	0	5	35	655	5	5	955	20
Conflicting Peds, #/hr	18	0	18	29	0	29	18	0	29	29	0	18
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	5	5	5	0	0	0	1	1	1	1	1	1
Mvmt Flow	23	0	34	6	0	6	40	753	6	6	1098	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1626	2008	608	1455	2016	438	1139	0	0	788	0	0
Stage 1	1140	1140	-	865	865	-	-	-	-	-	-	-
Stage 2	486	868	-	590	1151	-	-	-	-	-	-	-
Critical Hdwy	7.6	6.6	7	7.5	6.5	6.9	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.6	5.6	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	5.6	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.55	4.05	3.35	3.5	4	3.3	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	66	56	431	93	59	572	615	-	-	834	-	-
Stage 1	209	268	-	319	374	-	-	-	-	-	-	-
Stage 2	524	361	-	466	275	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	59	50	412	76	52	541	604	-	-	811	-	-
Mov Cap-2 Maneuver	59	50	-	76	52	-	-	-	-	-	-	-
Stage 1	192	262	-	290	340	-	-	-	-	-	-	-
Stage 2	471	328	-	412	268	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	59.1	34.6	0.6	0
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	604	-	-	121	133	811	-	-
HCM Lane V/C Ratio	0.067	-	-	0.475	0.086	0.007	-	-
HCM Control Delay (s)	11.4	-	-	59.1	34.6	9.5	-	-
HCM Lane LOS	B	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	2.1	0.3	0	-	-

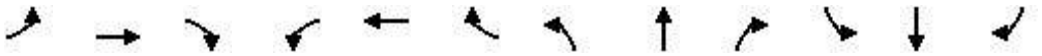
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	0	35	5	0	5	30	645	0	5	930	10
Future Vol, veh/h	10	0	35	5	0	5	30	645	0	5	930	10
Conflicting Peds, #/hr	29	0	29	26	0	26	29	0	26	26	0	29
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	50	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	1	1	1	1	1	1
Mvmt Flow	11	0	39	6	0	6	33	717	0	6	1033	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1534	1889	580	1367	1894	414	1073	0	0	743	0	0
Stage 1	1080	1080	-	809	809	-	-	-	-	-	-	-
Stage 2	454	809	-	558	1085	-	-	-	-	-	-	-
Critical Hdwy	7.5	6.5	6.9	7.5	6.5	6.9	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.5	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.21	-	-	2.21	-	-
Pot Cap-1 Maneuver	81	71	463	108	71	593	651	-	-	867	-	-
Stage 1	236	297	-	345	396	-	-	-	-	-	-	-
Stage 2	560	396	-	487	295	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	72	63	438	89	63	562	633	-	-	846	-	-
Mov Cap-2 Maneuver	72	63	-	89	63	-	-	-	-	-	-	-
Stage 1	218	287	-	319	366	-	-	-	-	-	-	-
Stage 2	511	366	-	428	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	28	30.2	0.5	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	633	-	-	206	154	846	-	-
HCM Lane V/C Ratio	0.053	-	-	0.243	0.072	0.007	-	-
HCM Control Delay (s)	11	-	-	28	30.2	9.3	-	-
HCM Lane LOS	B	-	-	D	D	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.9	0.2	0	-	-



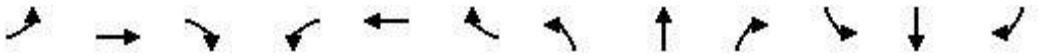
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	310	90	400	20	80	30	350	515	35	25	655	435
Future Volume (veh/h)	310	90	400	20	80	30	350	515	35	25	655	435
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		0.94	0.97		0.92
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	1900	1900	1900	1885	1885	1885	1900	1900	1900
Adj Flow Rate, veh/h	320	93	412	21	82	31	361	531	36	26	675	448
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	0	0	0	1	1	1	0	0	0
Cap, veh/h	276	111	492	62	225	74	431	1523	103	397	1178	485
Arrive On Green	0.38	0.38	0.38	0.38	0.38	0.38	0.15	0.45	0.45	0.03	0.33	0.33
Sat Flow, veh/h	1280	296	1310	58	600	198	1795	3389	229	1810	3610	1486
Grp Volume(v), veh/h	320	0	505	134	0	0	361	280	287	26	675	448
Grp Sat Flow(s),veh/h/ln	1280	0	1606	856	0	0	1795	1791	1827	1810	1805	1486
Q Serve(g_s), s	7.4	0.0	29.7	1.8	0.0	0.0	13.1	10.6	10.7	1.0	16.1	30.2
Cycle Q Clear(g_c), s	39.0	0.0	29.7	31.6	0.0	0.0	13.1	10.6	10.7	1.0	16.1	30.2
Prop In Lane	1.00		0.82	0.16		0.23	1.00		0.13	1.00		1.00
Lane Grp Cap(c), veh/h	276	0	603	362	0	0	431	805	821	397	1178	485
V/C Ratio(X)	1.16	0.00	0.84	0.37	0.00	0.00	0.84	0.35	0.35	0.07	0.57	0.92
Avail Cap(c_a), veh/h	276	0	603	362	0	0	536	880	897	447	1217	501
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	0.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.0	0.0	29.5	23.8	0.0	0.0	20.4	18.7	18.7	21.8	29.0	33.7
Incr Delay (d2), s/veh	104.3	0.0	10.1	0.6	0.0	0.0	9.8	0.3	0.3	0.1	0.6	22.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.2	0.0	12.8	2.3	0.0	0.0	6.4	4.4	4.5	0.4	7.0	13.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.3	0.0	39.6	24.4	0.0	0.0	30.2	18.9	18.9	21.9	29.6	56.4
LnGrp LOS	F	A	D	C	A	A	C	B	B	C	C	E
Approach Vol, veh/h		825			134			928			1149	
Approach Delay, s/veh		80.6			24.4			23.3			39.9	
Approach LOS		F			C			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.2	51.6		44.0	20.9	38.9		44.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	51.0		39.0	22.0	35.0		39.0				
Max Q Clear Time (g_c+I1), s	3.0	12.7		41.0	15.1	32.2		33.6				
Green Ext Time (p_c), s	0.0	3.8		0.0	0.8	1.7		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		45.2
HCM 6th LOS		D

Notes

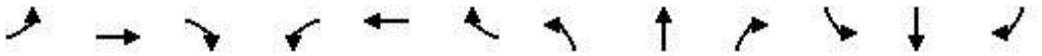
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	125	0	560	250	170	225	300	550	0	0	755	320
Future Volume (vph)	125	0	560	250	170	225	300	550	0	0	755	320
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Lane Util. Factor	1.00		1.00	1.00	1.00	1.00	1.00	0.95			0.95	1.00
Frpb, ped/bikes	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	0.97
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Frt	1.00		0.85	1.00	1.00	0.85	1.00	1.00			1.00	0.85
Flt Protected	0.95		1.00	0.95	1.00	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)	1745		1561	1728	1818	1546	1727	3455			3421	1485
Flt Permitted	0.95		1.00	0.95	1.00	1.00	0.15	1.00			1.00	1.00
Satd. Flow (perm)	1745		1561	1728	1818	1546	281	3455			3421	1485
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	126	0	566	253	172	227	303	556	0	0	763	323
RTOR Reduction (vph)	0	0	473	0	0	180	0	0	0	0	0	179
Lane Group Flow (vph)	126	0	93	253	172	47	303	556	0	0	763	144
Confl. Peds. (#/hr)							2		1	1		2
Confl. Bikes (#/hr)									1			5
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	Prot		Perm	Split	NA	Perm	pm+pt	NA			NA	Perm
Protected Phases	4			3	3		5	2			6	
Permitted Phases			4			3	2					6
Actuated Green, G (s)	14.5		14.5	24.1	24.1	24.1	64.0	64.0			35.9	35.9
Effective Green, g (s)	14.5		14.5	24.1	24.1	24.1	64.0	64.0			35.9	35.9
Actuated g/C Ratio	0.12		0.12	0.20	0.20	0.20	0.54	0.54			0.31	0.31
Clearance Time (s)	5.0		5.0	5.0	5.0	5.0	5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0	3.0	4.0			4.0	4.0
Lane Grp Cap (vph)	215		192	354	372	316	436	1880			1044	453
v/s Ratio Prot	c0.07			c0.15	0.09		c0.14	0.16			0.22	
v/s Ratio Perm			0.06			0.03	c0.24					0.10
v/c Ratio	0.59		0.48	0.71	0.46	0.15	0.69	0.30			0.73	0.32
Uniform Delay, d1	48.7		48.1	43.5	41.1	38.3	20.8	14.6			36.5	31.4
Progression Factor	1.00		1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2	4.0		1.9	6.7	0.9	0.2	4.8	0.1			2.8	0.6
Delay (s)	52.8		50.0	50.3	42.0	38.5	25.5	14.7			39.4	32.0
Level of Service	D		D	D	D	D	C	B			D	C
Approach Delay (s)		50.5			44.0			18.5			37.2	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	117.6	Sum of lost time (s)	25.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1090	130	345	15	85	50	355	395	20	65	135	410
Future Volume (veh/h)	1090	130	345	15	85	50	355	395	20	65	135	410
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		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	1870	1870	1870	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	1207	0	352	15	87	51	362	403	20	66	138	418
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	1	1	2	2	2	1	1	1	2	2	2
Cap, veh/h	1433	0	739	172	106	62	380	566	28	239	533	444
Arrive On Green	0.40	0.00	0.40	0.10	0.10	0.10	0.07	0.32	0.32	0.04	0.28	0.28
Sat Flow, veh/h	3591	0	1559	1781	1104	647	1795	1781	88	1781	1870	1559
Grp Volume(v), veh/h	1207	0	352	15	0	138	362	0	423	66	138	418
Grp Sat Flow(s),veh/h/ln	1795	0	1559	1781	0	1751	1795	0	1869	1781	1870	1559
Q Serve(g_s), s	41.5	0.0	21.0	1.0	0.0	10.5	10.0	0.0	27.2	3.5	7.8	35.7
Cycle Q Clear(g_c), s	41.5	0.0	21.0	1.0	0.0	10.5	10.0	0.0	27.2	3.5	7.8	35.7
Prop In Lane	1.00		1.00	1.00		0.37	1.00		0.05	1.00		1.00
Lane Grp Cap(c), veh/h	1433	0	739	172	0	169	380	0	594	239	533	444
V/C Ratio(X)	0.84	0.00	0.48	0.09	0.00	0.82	0.95	0.00	0.71	0.28	0.26	0.94
Avail Cap(c_a), veh/h	2159	0	1054	405	0	398	380	0	699	245	644	537
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	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	24.5	56.2	0.0	60.5	43.3	0.0	41.0	34.3	37.7	47.7
Incr Delay (d2), s/veh	2.0	0.0	0.5	0.1	0.0	3.7	33.6	0.0	2.0	0.2	0.1	21.3
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	18.5	0.0	7.9	0.5	0.0	4.9	11.2	0.0	12.8	1.6	3.6	16.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.1	0.0	25.0	56.3	0.0	64.1	77.0	0.0	43.1	34.5	37.8	69.0
LnGrp LOS	D	A	C	E	A	E	E	A	D	C	D	E
Approach Vol, veh/h		1559			153			785			622	
Approach Delay, s/veh		35.9			63.4			58.7			58.4	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	48.3		59.4	15.0	43.8		18.1				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	6.0	51.0		82.0	10.0	47.0		31.0				
Max Q Clear Time (g_c+I1), s	5.5	29.2		43.5	12.0	37.7		12.5				
Green Ext Time (p_c), s	0.0	0.9		10.9	0.0	1.1		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		47.5	
HCM 6th LOS		D	

Notes

User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

Intersection	
Int Delay, s/veh	34

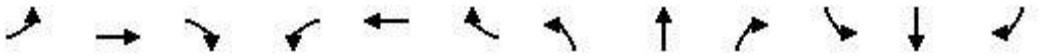
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	400	15	0	255	420	0
Future Vol, veh/h	400	15	0	255	420	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	1	1	0	0
Mvmt Flow	421	16	0	268	442	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	710	443	-	0	-	0
Stage 1	442	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	-	-
Pot Cap-1 Maneuver	~ 400	615	0	-	-	0
Stage 1	648	-	0	-	-	0
Stage 2	777	-	0	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	~ 400	614	-	-	-	-
Mov Cap-2 Maneuver	~ 400	-	-	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	777	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	89.3	0	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	-	400	614	-
HCM Lane V/C Ratio	-	1.053	0.026	-
HCM Control Delay (s)	-	92.2	11	-
HCM Lane LOS	-	F	B	-
HCM 95th %tile Q(veh)	-	13.9	0.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	935	195	240	690	105	255	320	525	130	300	60
Future Volume (vph)	45	935	195	240	690	105	255	320	525	130	300	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	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	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3333		1728	3455	1495	1728	1818	1524	1728	1765	
Flt Permitted	0.95	1.00		0.09	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1728	3333		156	3455	1495	1728	1818	1524	1728	1765	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	964	201	247	711	108	263	330	541	134	309	62
RTOR Reduction (vph)	0	12	0	0	0	73	0	0	238	0	5	0
Lane Group Flow (vph)	46	1153	0	247	711	35	263	330	303	134	366	0
Confl. Peds. (#/hr)	4		12	12		4	8					8
Confl. Bikes (#/hr)			5			2			2			3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases				6		6			4			
Actuated Green, G (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	
Effective Green, g (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	
Actuated g/C Ratio	0.18	0.39		0.43	0.32	0.32	0.15	0.21	0.21	0.15	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	309	1310		241	1119	484	262	376	315	262	365	
v/s Ratio Prot	0.03	c0.35		c0.11	0.21		c0.15	0.18		0.08	c0.21	
v/s Ratio Perm				c0.33		0.02			0.20			
v/c Ratio	0.15	0.88		1.02	0.64	0.07	1.00	0.88	0.96	0.51	1.00	
Uniform Delay, d1	50.2	40.8		43.9	41.7	33.9	61.5	55.7	56.9	56.6	57.5	
Progression Factor	1.68	0.36		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	3.5		64.6	1.2	0.1	56.6	20.5	40.6	2.2	48.0	
Delay (s)	84.5	18.2		108.5	42.9	34.0	118.1	76.2	97.5	58.8	105.5	
Level of Service	F	B		F	D	C	F	E	F	E	F	
Approach Delay (s)		20.7			57.2			96.1			93.1	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	35.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	0	5	5	50	0	75	5	935	105	100	560	5
Future Vol, veh/h	0	5	5	50	0	75	5	935	105	100	560	5
Conflicting Peds, #/hr	1	0	1	2	0	2	1	0	2	2	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	75	-	-	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	2	2	2	2	2	2
Mvmt Flow	0	6	6	56	0	83	6	1039	117	111	622	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2001	2018	628	1967	1963	1102	629	0	0	1158	0	0
Stage 1	848	848	-	1112	1112	-	-	-	-	-	-	-
Stage 2	1153	1170	-	855	851	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	45	59	487	~ 48	64	260	953	-	-	603	-	-
Stage 1	359	380	-	256	287	-	-	-	-	-	-	-
Stage 2	242	269	-	356	379	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	26	48	486	~ 37	52	259	952	-	-	602	-	-
Mov Cap-2 Maneuver	26	48	-	~ 37	52	-	-	-	-	-	-	-
Stage 1	356	310	-	254	285	-	-	-	-	-	-	-
Stage 2	163	267	-	281	309	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	52.3	$ 509.9	0	1.9
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	952	-	-	87	76	602	-	-
HCM Lane V/C Ratio	0.006	-	-	0.128	1.827	0.185	-	-
HCM Control Delay (s)	8.8	-	-	52.3	$ 509.9	12.3	-	-
HCM Lane LOS	A	-	-	F	F	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	12.1	0.7	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	6.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	60	25	980	60	25	630
Future Vol, veh/h	60	25	980	60	25	630
Conflicting Peds, #/hr	18	18	0	18	18	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	50	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	0	0	1	1
Mvmt Flow	63	26	1032	63	26	663

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1815	1100	0	0	1113	0
Stage 1	1082	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	86	259	-	-	631	-
Stage 1	327	-	-	-	-	-
Stage 2	477	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	80	250	-	-	620	-
Mov Cap-2 Maneuver	80	-	-	-	-	-
Stage 1	321	-	-	-	-	-
Stage 2	449	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	140	0	0.4
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	100	620	-
HCM Lane V/C Ratio	-	-	0.895	0.042	-
HCM Control Delay (s)	-	-	140	11.1	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	5.2	0.1	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	495	1040	610	80
Future Vol, veh/h	0	0	495	1040	610	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	0	1	1	2	2
Mvmt Flow	0	0	510	1072	629	82

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2762	670	711	0	-	0
Stage 1	670	-	-	-	-	-
Stage 2	2092	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	22	460	893	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	460	893	-	-	-
Mov Cap-2 Maneuver	9	-	-	-	-	-
Stage 1	220	-	-	-	-	-
Stage 2	104	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	4.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	893	-	-	-	-
HCM Lane V/C Ratio	0.571	-	-	-	-
HCM Control Delay (s)	14.3	-	0	-	-
HCM Lane LOS	B	-	A	-	-
HCM 95th %tile Q(veh)	3.7	-	-	-	-

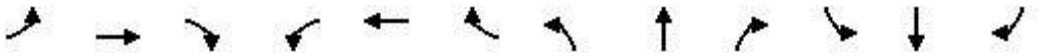
Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	70	5	5	70	5	5	20	15	10	25	10
Future Vol, veh/h	10	70	5	5	70	5	5	20	15	10	25	10
Conflicting Peds, #/hr	5	0	4	6	0	7	4	0	6	7	0	5
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	12	81	6	6	81	6	6	23	17	12	29	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	158	123	46	160	121	46	46	0	0	47	0	0
Stage 1	64	64	-	51	51	-	-	-	-	-	-	-
Stage 2	94	59	-	109	70	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	813	771	1029	810	773	1029	1575	-	-	1573	-	-
Stage 1	952	846	-	967	856	-	-	-	-	-	-	-
Stage 2	918	850	-	901	841	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	752	1018	723	754	1015	1568	-	-	1563	-	-
Mov Cap-2 Maneuver	727	752	-	723	754	-	-	-	-	-	-	-
Stage 1	943	835	-	956	847	-	-	-	-	-	-	-
Stage 2	816	841	-	797	830	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	10.4	0.9	1.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1568	-	-	761	764	1563	-	-
HCM Lane V/C Ratio	0.004	-	-	0.13	0.122	0.007	-	-
HCM Control Delay (s)	7.3	0	-	10.4	10.4	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0	-	-



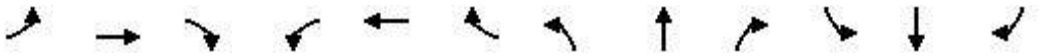
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1060	255	190	1005	0	0	0	0	605	0	480
Future Volume (veh/h)	0	1060	255	190	1005	0	0	0	0	605	0	480
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.93	1.00		1.00				1.00		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	0	1885	1885	1885	1885	0				1885	1885	1885
Adj Flow Rate, veh/h	0	1082	260	194	1026	0				617	0	490
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	1	1	1	1	0				1	1	1
Cap, veh/h	0	1027	244	198	1887	0				641	0	569
Arrive On Green	0.00	0.36	0.36	0.11	0.53	0.00				0.36	0.00	0.36
Sat Flow, veh/h	0	2915	672	1795	3676	0				1795	0	1594
Grp Volume(v), veh/h	0	683	659	194	1026	0				617	0	490
Grp Sat Flow(s),veh/h/ln	0	1791	1701	1795	1791	0				1795	0	1594
Q Serve(g_s), s	0.0	38.2	38.2	11.3	19.9	0.0				35.3	0.0	30.0
Cycle Q Clear(g_c), s	0.0	38.2	38.2	11.3	19.9	0.0				35.3	0.0	30.0
Prop In Lane	0.00		0.39	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	652	619	198	1887	0				641	0	569
V/C Ratio(X)	0.00	1.05	1.06	0.98	0.54	0.00				0.96	0.00	0.86
Avail Cap(c_a), veh/h	0	652	619	198	1887	0				641	0	569
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	33.4	33.4	46.6	16.5	0.0				33.1	0.0	31.3
Incr Delay (d2), s/veh	0.0	48.6	54.2	57.3	0.4	0.0				26.6	0.0	13.1
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	0.0	24.8	24.6	8.1	7.8	0.0				19.6	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	82.0	87.6	103.9	16.9	0.0				59.7	0.0	44.5
LnGrp LOS	A	F	F	F	B	A				E	A	D
Approach Vol, veh/h		1342			1220						1107	
Approach Delay, s/veh		84.8			30.7						52.9	
Approach LOS		F			C						D	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	17.1	44.5		43.4		61.6
Change Period (Y+Rc), s	5.5	6.3		5.9		6.3
Max Green Setting (Gmax), s	11.6	38.2		37.5		55.3
Max Q Clear Time (g_c+I1), s	13.3	40.2		37.3		21.9
Green Ext Time (p_c), s	0.0	0.0		0.1		12.2

Intersection Summary		
HCM 6th Ctrl Delay		57.2
HCM 6th LOS		E

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1005	185	25	720	260	155	100	100	70	45	350
Future Volume (vph)	355	1005	185	25	720	260	155	100	100	70	45	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	4.0
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	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3340		1711	3242		1745	1675		1728	1818	1546
Flt Permitted	0.08	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	140	3340		1711	3242		1745	1675		1728	1818	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	1058	195	26	758	274	163	105	105	74	47	368
RTOR Reduction (vph)	0	10	0	0	25	0	0	25	0	0	0	0
Lane Group Flow (vph)	374	1243	0	26	1007	0	163	185	0	74	47	368
Confl. Peds. (#/hr)	11		17	17		11			11	11		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		Prot	NA	Free
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases	2											Free
Actuated Green, G (s)	78.0	57.0		16.0	47.0		22.0	30.0		22.0	30.0	145.0
Effective Green, g (s)	78.0	57.0		16.0	47.0		22.0	30.0		22.0	30.0	145.0
Actuated g/C Ratio	0.54	0.39		0.11	0.32		0.15	0.21		0.15	0.21	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	360	1312		188	1050		264	346		262	376	1546
v/s Ratio Prot	c0.19	0.37		0.02	0.31		c0.09	c0.11		0.04	0.03	
v/s Ratio Perm	c0.37											0.24
v/c Ratio	1.04	0.95		0.14	0.96		0.62	0.54		0.28	0.12	0.24
Uniform Delay, d1	47.7	42.5		58.3	48.1		57.6	51.3		54.5	46.8	0.0
Progression Factor	1.00	1.00		1.19	0.53		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	57.9	14.0		0.2	13.9		4.9	2.0		0.8	0.2	0.4
Delay (s)	105.6	56.5		69.6	39.6		62.4	53.3		55.3	47.0	0.4
Level of Service	F	E		E	D		E	D		E	D	A
Approach Delay (s)		67.8			40.3			57.3			13.2	
Approach LOS		E			D			E			B	

Intersection Summary			
HCM 2000 Control Delay	51.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1525	65	50	1020	15	55
Future Vol, veh/h	1525	65	50	1020	15	55
Conflicting Peds, #/hr	0	20	20	0	20	20
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	200
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	0	0
Mvmt Flow	1572	67	52	1052	15	57

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1659	0	2276	860
Stage 1	-	-	-	-	1626	-
Stage 2	-	-	-	-	650	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	389	-	35	303
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	487	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	382	-	29	293
Mov Cap-2 Maneuver	-	-	-	-	108	-
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	413	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	25.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	108	293	-	-	382	-
HCM Lane V/C Ratio	0.143	0.194	-	-	0.135	-
HCM Control Delay (s)	43.8	20.2	-	-	15.9	-
HCM Lane LOS	E	C	-	-	C	-
HCM 95th %tile Q(veh)	0.5	0.7	-	-	0.5	-

Intersection	
Int Delay, s/veh	5.5

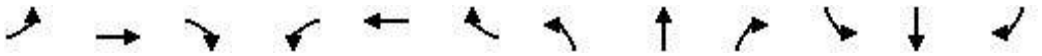
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	90	1460	30	0	945	80	10	5	5	55	0	115
Future Vol, veh/h	90	1460	30	0	945	80	10	5	5	55	0	115
Conflicting Peds, #/hr	9	0	17	40	0	32	17	0	40	32	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	95	1537	32	0	995	84	11	5	5	58	0	121

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1111	0	0	-	-	0	2275	2871	842	2070	2845	589
Stage 1	-	-	-	-	-	-	1760	1760	-	1069	1069	-
Stage 2	-	-	-	-	-	-	515	1111	-	1001	1776	-
Critical Hdwy	4.12	-	-	-	-	-	7.5	6.5	6.9	7.52	6.52	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.52	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.52	5.52	-
Follow-up Hdwy	2.21	-	-	-	-	-	3.5	4	3.3	3.51	4.01	3.31
Pot Cap-1 Maneuver	630	-	-	0	-	-	22	17	312	~ 32	17	454
Stage 1	-	-	-	0	-	-	90	139	-	238	298	-
Stage 2	-	-	-	0	-	-	516	287	-	262	135	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	611	-	-	-	-	-	14	14	295	~ 24	14	433
Mov Cap-2 Maneuver	-	-	-	-	-	-	58	71	-	101	79	-
Stage 1	-	-	-	-	-	-	75	116	-	195	289	-
Stage 2	-	-	-	-	-	-	366	278	-	200	112	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	68.5	76.5
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBT	WBR	SBLn1
Capacity (veh/h)	77	611	-	-	-	-	210
HCM Lane V/C Ratio	0.273	0.155	-	-	-	-	0.852
HCM Control Delay (s)	68.5	12	-	-	-	-	76.5
HCM Lane LOS	F	B	-	-	-	-	F
HCM 95th %tile Q(veh)	1	0.5	-	-	-	-	6.5

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



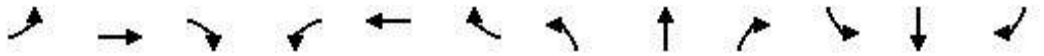
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	1130	200	20	830	20	185	35	5	180	85	90
Future Volume (veh/h)	70	1130	200	20	830	20	185	35	5	180	85	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.97	1.00		0.97
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	1900	1900	1900	1900	1900	1900
Adj Flow Rate, veh/h	74	1189	211	21	874	21	195	37	5	189	89	95
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	1	1	1	1	0	0	0	0	0	0
Cap, veh/h	349	1452	256	181	1612	39	233	246	33	227	122	130
Arrive On Green	0.06	0.48	0.48	0.03	0.45	0.45	0.13	0.15	0.15	0.13	0.15	0.15
Sat Flow, veh/h	1795	3027	533	1795	3571	86	1810	1633	221	1810	829	885
Grp Volume(v), veh/h	74	700	700	21	438	457	195	0	42	189	0	184
Grp Sat Flow(s),veh/h/ln	1795	1791	1769	1795	1791	1866	1810	0	1854	1810	0	1713
Q Serve(g_s), s	2.0	30.7	31.3	0.6	16.4	16.4	9.7	0.0	1.8	9.4	0.0	9.4
Cycle Q Clear(g_c), s	2.0	30.7	31.3	0.6	16.4	16.4	9.7	0.0	1.8	9.4	0.0	9.4
Prop In Lane	1.00		0.30	1.00		0.05	1.00		0.12	1.00		0.52
Lane Grp Cap(c), veh/h	349	859	849	181	808	842	233	0	279	227	0	252
V/C Ratio(X)	0.21	0.82	0.82	0.12	0.54	0.54	0.84	0.00	0.15	0.83	0.00	0.73
Avail Cap(c_a), veh/h	367	1070	1057	249	1070	1115	334	0	544	334	0	503
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	20.5	20.6	17.4	18.3	18.3	39.2	0.0	34.0	39.3	0.0	37.5
Incr Delay (d2), s/veh	0.3	4.0	4.4	0.3	0.6	0.5	11.9	0.0	0.4	11.0	0.0	5.7
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	0.8	12.9	13.1	0.2	6.6	6.9	5.0	0.0	0.8	4.8	0.0	4.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.6	24.5	25.1	17.7	18.9	18.9	51.0	0.0	34.3	50.3	0.0	43.1
LnGrp LOS	B	C	C	B	B	B	D	A	C	D	A	D
Approach Vol, veh/h		1474			916			237			373	
Approach Delay, s/veh		24.2			18.9			48.1			46.8	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	49.1	16.8	18.6	10.1	46.5	16.5	18.9
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	6.0	55.0	17.0	27.0	6.0	55.0	17.0	27.0
Max Q Clear Time (g_c+I1), s	2.6	33.3	11.7	11.4	4.0	18.4	11.4	3.8
Green Ext Time (p_c), s	0.0	10.8	0.2	1.2	0.0	6.8	0.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.3
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.



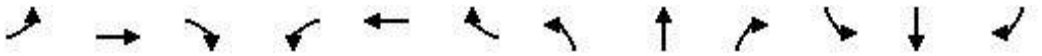
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	685	425	230	605	25	155	45	275	55	35	20
Future Volume (veh/h)	25	685	425	230	605	25	155	45	275	55	35	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1856	1856	1856	1870	1870	1870
Adj Flow Rate, veh/h	27	729	0	245	644	27	165	48	293	59	37	21
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	3	3	3	2	2	2
Cap, veh/h	406	1883		379	1840	77	214	60	301	215	129	62
Arrive On Green	0.53	0.53	0.00	0.53	0.53	0.53	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	772	3676	0	731	3498	147	475	180	902	458	388	185
Grp Volume(v), veh/h	27	729	0	245	329	342	506	0	0	117	0	0
Grp Sat Flow(s),veh/h/ln	772	1791	0	731	1791	1854	1558	0	0	1030	0	0
Q Serve(g_s), s	1.8	10.5	0.0	26.1	9.3	9.3	21.7	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.1	10.5	0.0	36.6	9.3	9.3	27.8	0.0	0.0	6.1	0.0	0.0
Prop In Lane	1.00		0.00	1.00		0.08	0.33		0.58	0.50		0.18
Lane Grp Cap(c), veh/h	406	1883		379	942	975	575	0	0	406	0	0
V/C Ratio(X)	0.07	0.39		0.65	0.35	0.35	0.88	0.00	0.00	0.29	0.00	0.00
Avail Cap(c_a), veh/h	478	2218		447	1109	1148	575	0	0	406	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.2	12.3	0.0	23.2	12.0	12.0	28.2	0.0	0.0	21.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	3.2	0.3	0.3	15.0	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.0	0.0	4.6	3.5	3.7	12.2	0.0	0.0	1.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.3	12.5	0.0	26.4	12.3	12.3	43.2	0.0	0.0	21.5	0.0	0.0
LnGrp LOS	B	B		C	B	B	D	A	A	C	A	A
Approach Vol, veh/h		756	A		916			506			117	
Approach Delay, s/veh		12.6			16.0			43.2			21.5	
Approach LOS		B			B			D			C	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		52.0		34.9		52.0		34.9				
Change Period (Y+Rc), s		6.3		5.9		6.3		5.9				
Max Green Setting (Gmax), s		53.8		29.0		53.8		29.0				
Max Q Clear Time (g_c+I1), s		13.1		8.1		38.6		29.8				
Green Ext Time (p_c), s		9.0		0.9		7.1		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	21.2	
HCM 6th LOS	C	

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	735	85	40	750	5	55	190	40	5	110	35
Future Volume (vph)	130	735	85	40	750	5	55	190	40	5	110	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		4.5	4.5			5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00			1.00	
Frt	1.00	0.98		1.00	1.00		1.00	0.97			0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1787	3519		1787	3571		1805	1850			1837	
Flt Permitted	0.18	1.00		0.21	1.00		0.95	1.00			1.00	
Satd. Flow (perm)	338	3519		393	3571		1805	1850			1837	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	140	790	91	43	806	5	59	204	43	5	118	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	140	881	0	43	811	0	59	247	0	0	161	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	36.2	30.1		30.4	27.2		15.3	15.3			12.4	
Effective Green, g (s)	36.2	30.1		30.4	27.2		15.3	15.3			12.4	
Actuated g/C Ratio	0.45	0.37		0.38	0.34		0.19	0.19			0.15	
Clearance Time (s)	5.0	5.0		5.0	5.0		4.5	4.5			5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	261	1315		203	1206		343	351			282	
v/s Ratio Prot	c0.04	c0.25		0.01	0.23		0.03	c0.13			c0.09	
v/s Ratio Perm	0.20			0.07								
v/c Ratio	0.54	0.67		0.21	0.67		0.17	0.70			0.57	
Uniform Delay, d1	14.9	21.1		16.6	22.8		27.3	30.5			31.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	2.1	1.3		0.5	1.5		0.2	6.3			2.8	
Delay (s)	17.0	22.4		17.1	24.3		27.5	36.8			34.4	
Level of Service	B	C		B	C		C	D			C	
Approach Delay (s)		21.6			24.0			35.0			34.4	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	19.5
Intersection Capacity Utilization	65.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Intersection Delay, s/veh	39.8
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	280	10	15	265	150	5	15	90	390	30	50
Future Vol, veh/h	25	280	10	15	265	150	5	15	90	390	30	50
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	1	1	1
Mvmt Flow	27	308	11	16	291	165	5	16	99	429	33	55
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	1
HCM Control Delay	27.8	21	13.8	71
HCM LOS	D	C	B	F

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1
Vol Left, %	5%	8%	5%	0%	83%
Vol Thru, %	14%	89%	95%	0%	6%
Vol Right, %	82%	3%	0%	100%	11%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	110	315	280	150	470
LT Vol	5	25	15	0	390
Through Vol	15	280	265	0	30
RT Vol	90	10	0	150	50
Lane Flow Rate	121	346	308	165	516
Geometry Grp	2	5	7	7	2
Degree of Util (X)	0.262	0.718	0.667	0.323	1.017
Departure Headway (Hd)	7.997	7.636	7.976	7.226	7.086
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	452	478	455	501	516
Service Time	5.997	5.636	5.676	4.926	5.086
HCM Lane V/C Ratio	0.268	0.724	0.677	0.329	1
HCM Control Delay	13.8	27.8	25.2	13.3	71
HCM Lane LOS	B	D	D	B	F
HCM 95th-tile Q	1	5.7	4.8	1.4	14.5

Intersection	
Int Delay, s/veh	60.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	205	225	50	395	365
Future Vol, veh/h	150	205	225	50	395	365
Conflicting Peds, #/hr	6	6	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	150	0	-	-	75	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	161	220	242	54	425	392

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1523	281	0	0	302	0
Stage 1	275	-	-	-	-	-
Stage 2	1248	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	~ 131	760	-	-	1265	-
Stage 1	774	-	-	-	-	-
Stage 2	272	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	~ 86	751	-	-	1258	-
Mov Cap-2 Maneuver	~ 86	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	179	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	224.9	0	4.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	86	751	1258	-
HCM Lane V/C Ratio	-	-	1.875	0.294	0.338	-
HCM Control Delay (s)	-	-	$ 516.1	11.8	9.3	-
HCM Lane LOS	-	-	F	B	A	-
HCM 95th %tile Q(veh)	-	-	13.8	1.2	1.5	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

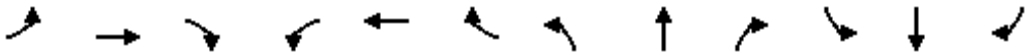
Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	275	85	250	40	105
Future Vol, veh/h	110	275	85	250	40	105
Conflicting Peds, #/hr	0	13	12	0	13	12
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	0	0	3	3
Mvmt Flow	121	302	93	275	44	115

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	759	297
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	474	-
Critical Hdwy	-	-	4.1	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.2	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1134	-	373	740
Stage 1	-	-	-	-	761	-
Stage 2	-	-	-	-	624	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1120	-	328	722
Mov Cap-2 Maneuver	-	-	-	-	328	-
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	556	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.2	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	542	-	-	1120	-
HCM Lane V/C Ratio	0.294	-	-	0.083	-
HCM Control Delay (s)	14.4	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Yield			Stop	
Traffic Volume (vph)	5	130	355	25	290	5	640	10	65	5	5	5
Future Volume (vph)	5	130	355	25	290	5	640	10	65	5	5	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	135	370	26	302	5	667	10	68	5	5	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	510	333	745	15
Volume Left (vph)	5	26	667	5
Volume Right (vph)	370	5	68	5
Hadj (s)	-0.43	0.01	0.12	-0.13
Departure Headway (s)	6.2	6.9	6.7	8.2
Degree Utilization, x	0.88	0.64	1.38	0.03
Capacity (veh/h)	573	503	541	382
Control Delay (s)	37.9	21.4	201.0	11.5
Approach Delay (s)	37.9	21.4	201.0	11.5
Approach LOS	E	C	F	B

Intersection Summary				
Delay	110.0			
Level of Service	F			
Intersection Capacity Utilization	85.0%	ICU Level of Service	E	
Analysis Period (min)	15			

Intersection	
Int Delay, s/veh	71.3

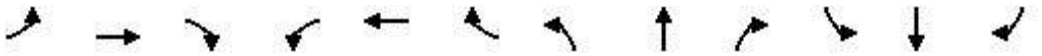
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	150	25	25	35	30	15	200	140	55	25	340	90
Future Vol, veh/h	150	25	25	35	30	15	200	140	55	25	340	90
Conflicting Peds, #/hr	6	0	11	15	0	10	11	0	15	10	0	6
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	1	1	1
Mvmt Flow	163	27	27	38	33	16	217	152	60	27	370	98

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1135	1145	445	1146	1164	207	479	0	0	227	0	0
Stage 1	484	484	-	631	631	-	-	-	-	-	-	-
Stage 2	651	661	-	515	533	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	181	201	617	178	196	839	1094	-	-	1347	-	-
Stage 1	568	555	-	472	477	-	-	-	-	-	-	-
Stage 2	461	463	-	546	528	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 117	147	602	115	143	819	1083	-	-	1328	-	-
Mov Cap-2 Maneuver	~ 117	147	-	115	143	-	-	-	-	-	-	-
Stage 1	433	534	-	359	363	-	-	-	-	-	-	-
Stage 2	314	352	-	474	508	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 369.9	57.7	4.6	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1083	-	-	134	150	1328	-	-
HCM Lane V/C Ratio	0.201	-	-	1.622	0.58	0.02	-	-
HCM Control Delay (s)	9.2	0	-	$ 369.9	57.7	7.8	0	-
HCM Lane LOS	A	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	15.6	3	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



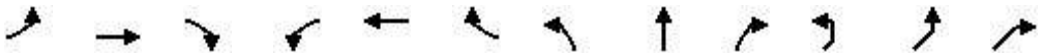
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	295	70	30	330	100	0	0	0	180	690	65
Future Volume (veh/h)	165	295	70	30	330	100	0	0	0	180	690	65
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.92				1.00		0.97
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	1885	1885	1885	1900	1900	1900				1885	1885	1885
Adj Flow Rate, veh/h	183	328	78	33	367	111				200	767	72
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90				0.90	0.90	0.90
Percent Heavy Veh, %	1	1	1	0	0	0				1	1	1
Cap, veh/h	412	868	203	402	654	194				293	1190	633
Arrive On Green	0.10	0.30	0.30	0.04	0.24	0.24				0.41	0.41	0.41
Sat Flow, veh/h	1795	2854	667	1810	2686	796				720	2921	1553
Grp Volume(v), veh/h	183	204	202	33	244	234				514	453	72
Grp Sat Flow(s),veh/h/ln	1795	1791	1730	1810	1805	1676				1849	1791	1553
Q Serve(g_s), s	4.4	5.4	5.6	0.8	7.2	7.5				13.9	12.2	1.8
Cycle Q Clear(g_c), s	4.4	5.4	5.6	0.8	7.2	7.5				13.9	12.2	1.8
Prop In Lane	1.00		0.39	1.00		0.47				0.39		1.00
Lane Grp Cap(c), veh/h	412	545	526	402	440	408				753	729	633
V/C Ratio(X)	0.44	0.37	0.38	0.08	0.56	0.57				0.68	0.62	0.11
Avail Cap(c_a), veh/h	493	853	824	504	771	716				1063	1029	893
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	1.00				1.00	1.00	1.00
Uniform Delay (d), s/veh	14.7	16.6	16.7	15.9	20.1	20.2				14.8	14.3	11.2
Incr Delay (d2), s/veh	0.7	0.4	0.5	0.1	1.1	1.3				1.6	1.2	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
%ile BackOfQ(50%),veh/ln	1.7	2.1	2.1	0.3	2.9	2.8				5.4	4.6	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.4	17.1	17.2	15.9	21.2	21.5				16.4	15.6	11.3
LnGrp LOS	B	B	B	B	C	C				B	B	B
Approach Vol, veh/h		589			511						1039	
Approach Delay, s/veh		16.6			21.0						15.7	
Approach LOS		B			C						B	

Timer - Assigned Phs		3	4		6	7	8					
Phs Duration (G+Y+Rc), s		7.6	23.5		29.8	11.3	19.8					
Change Period (Y+Rc), s		5.0	5.0		5.0	5.0	5.0					
Max Green Setting (Gmax), s		6.0	29.0		35.0	9.0	26.0					
Max Q Clear Time (g_c+I1), s		2.8	7.6		15.9	6.4	9.5					
Green Ext Time (p_c), s		0.0	2.4		8.9	0.1	2.7					

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL2	WBT	WBR	NBL	NBT	NBR	NEL2	NEL	NER
Lane Configurations												
Traffic Volume (vph)	5	110	360	45	45	35	265	190	30	145	440	65
Future Volume (vph)	5	110	360	45	45	35	265	190	30	145	440	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0
Lane Util. Factor	1.00	0.95		1.00	1.00			0.95			1.00	1.00
Frpb, ped/bikes	1.00	0.96		1.00	0.98			1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			0.96	1.00
Frt	1.00	0.89		1.00	0.93			0.99			1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (prot)	1787	3029		1787	1716			3429			1715	1599
Flt Permitted	0.95	1.00		0.95	1.00			0.97			0.95	1.00
Satd. Flow (perm)	1787	3029		1787	1716			3429			1715	1599
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	120	391	49	49	38	288	207	33	158	478	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	65
Lane Group Flow (vph)	5	511	0	49	87	0	0	526	0	0	636	22
Confl. Peds. (#/hr)	22		23	23		22	2		22	2	22	23
Confl. Bikes (#/hr)			2			1			1			1
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Split	NA		Split	NA		Prot	NA		Perm	Perm	Prot
Protected Phases	4	4		1	1		5	6				2
Permitted Phases										2	2	
Actuated Green, G (s)	20.0	20.0		9.5	9.5			50.4			34.0	34.0
Effective Green, g (s)	20.0	20.0		9.5	9.5			50.4			34.0	34.0
Actuated g/C Ratio	0.15	0.15		0.07	0.07			0.38			0.25	0.25
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	5.0
Vehicle Extension (s)	2.5	2.5		0.2	0.2			2.5			3.0	3.0
Lane Grp Cap (vph)	266	452		126	121			1290			435	406
v/s Ratio Prot	0.00	c0.17		0.03	c0.05							0.01
v/s Ratio Perm								0.15			c0.37	
v/c Ratio	0.02	1.73dr		0.39	0.72			72.00dl			1.46	0.05
Uniform Delay, d1	48.6	57.0		59.4	60.9			30.8			50.0	37.8
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	1.00
Incremental Delay, d2	0.0	83.1		0.7	15.6			0.2			220.3	0.1
Delay (s)	48.6	140.1		60.2	76.5			30.9			270.2	37.8
Level of Service	D	F		E	E			C			F	D
Approach Delay (s)		139.2			70.6			30.9			242.3	
Approach LOS		F			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	143.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	133.9	Sum of lost time (s)	29.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

dl Defacto Left Lane. Recode with 1 though lane as a left lane.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	NER2
Lane Configurations	
Traffic Volume (vph)	15
Future Volume (vph)	15
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	16
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	22
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)												
Lane Util. Factor												
Frt												
Flt Protected												
Satd. Flow (prot)												
Flt Permitted												
Satd. Flow (perm)												
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Turn Type			Perm	Prot		Prot						
Protected Phases		4		8		8		2			6	
Permitted Phases	4		4							6		
Actuated Green, G (s)												
Effective Green, g (s)												
Actuated g/C Ratio												
Clearance Time (s)												
Vehicle Extension (s)												
Lane Grp Cap (vph)												
v/s Ratio Prot												
v/s Ratio Perm												
v/c Ratio												
Uniform Delay, d1												
Progression Factor												
Incremental Delay, d2												
Delay (s)												
Level of Service												
Approach Delay (s)		0.0			0.0			0.0			0.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	0.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.00		
Actuated Cycle Length (s)	3.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	0.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

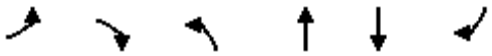
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	670	550	0	790	355	0
Future Volume (veh/h)	670	550	0	790	355	0
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1885	1885	0	1885	1885	0
Adj Flow Rate, veh/h	744	611	0	878	394	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	1	1	0	1	1	0
Cap, veh/h	1423	653	0	1479	1479	0
Arrive On Green	0.41	0.41	0.00	0.41	0.41	0.00
Sat Flow, veh/h	3483	1598	0	3770	3770	0
Grp Volume(v), veh/h	744	611	0	878	394	0
Grp Sat Flow(s),veh/h/ln	1742	1598	0	1791	1791	0
Q Serve(g_s), s	9.0	20.5	0.0	10.7	4.1	0.0
Cycle Q Clear(g_c), s	9.0	20.5	0.0	10.7	4.1	0.0
Prop In Lane	1.00	1.00	0.00			0.00
Lane Grp Cap(c), veh/h	1423	653	0	1479	1479	0
V/C Ratio(X)	0.52	0.94	0.00	0.59	0.27	0.00
Avail Cap(c_a), veh/h	1431	656	0	1479	1479	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	0.63	0.00
Uniform Delay (d), s/veh	12.5	15.9	0.0	12.8	10.8	0.0
Incr Delay (d2), s/veh	0.5	21.1	0.0	1.8	0.3	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	3.1	10.1	0.0	4.0	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.9	36.9	0.0	14.6	11.1	0.0
LnGrp LOS	B	D	A	B	B	A
Approach Vol, veh/h	1355			878	394	
Approach Delay, s/veh	23.7			14.6	11.1	
Approach LOS	C			B	B	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		28.1		27.9		28.1
Change Period (Y+Rc), s		5.0		5.0		5.0
Max Green Setting (Gmax), s		23.0		23.0		23.0
Max Q Clear Time (g_c+I1), s		12.7		22.5		6.1
Green Ext Time (p_c), s		4.4		0.4		2.3

Intersection Summary		
HCM 6th Ctrl Delay		18.8
HCM 6th LOS		B

Notes

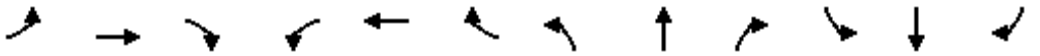
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	380	55	0	0	245	380
Future Volume (Veh/h)	380	55	0	0	245	380
Sign Control	Free			Stop	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	388	56	0	0	250	388
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						7
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	0		929	804	776	0
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	0		929	804	776	0
tC, single (s)	4.1		7.1	6.5	6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2		3.5	4.0	4.0	3.3
p0 queue free %	76		100	100	0	64
cM capacity (veh/h)	1623		5	243	251	1088

Direction, Lane #	EB 1	SB 1
Volume Total	444	638
Volume Left	388	0
Volume Right	56	388
cSH	1623	619
Volume to Capacity	0.24	1.03
Queue Length 95th (ft)	23	417
Control Delay (s)	7.2	70.1
Lane LOS	A	F
Approach Delay (s)	7.2	70.1
Approach LOS		F

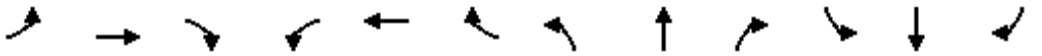
Intersection Summary			
Average Delay	44.3		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	935	210	240	735	60	385	190	525	125	290	190
Future Volume (vph)	160	935	210	240	735	60	385	190	525	125	290	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	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	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99	1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3326		1728	3455	1495	1728	1818	1524	1728	1693	
Flt Permitted	0.95	1.00		0.09	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1728	3326		155	3455	1495	1728	1818	1524	1728	1693	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	165	964	216	247	758	62	397	196	541	129	299	196
RTOR Reduction (vph)	0	13	0	0	0	42	0	0	241	0	17	0
Lane Group Flow (vph)	165	1167	0	247	758	20	397	196	300	129	478	0
Confl. Peds. (#/hr)	4		12	12		4	8					8
Confl. Bikes (#/hr)			5			2			2			3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases				6		6			4			
Actuated Green, G (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	
Effective Green, g (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	
Actuated g/C Ratio	0.18	0.39		0.43	0.32	0.32	0.15	0.21	0.21	0.15	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	309	1307		240	1119	484	262	376	315	262	350	
v/s Ratio Prot	0.10	c0.35		c0.11	0.22		c0.23	0.11		0.07	c0.28	
v/s Ratio Perm				c0.33		0.01			0.20			
v/c Ratio	0.53	0.89		1.03	0.68	0.04	1.52	0.52	0.95	0.49	1.37	
Uniform Delay, d1	54.0	41.1		44.0	42.4	33.6	61.5	51.1	56.8	56.4	57.5	
Progression Factor	1.51	0.45		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	3.7		65.9	1.6	0.0	250.6	1.7	38.1	2.0	182.4	
Delay (s)	82.6	22.4		109.9	44.1	33.6	312.1	52.8	94.9	58.4	239.9	
Level of Service	F	C		F	D	C	F	D	F	E	F	
Approach Delay (s)		29.8			58.7			163.7			202.3	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	99.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1005	185	30	735	550	155	100	100	205	45	350
Future Volume (vph)	355	1005	185	30	735	550	155	100	100	205	45	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	4.0
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	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.94		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3340		1711	3161		1745	1675		1728	1818	1546
Flt Permitted	0.08	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	140	3340		1711	3161		1745	1675		1728	1818	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	1058	195	32	774	579	163	105	105	216	47	368
RTOR Reduction (vph)	0	10	0	0	93	0	0	25	0	0	0	0
Lane Group Flow (vph)	374	1243	0	32	1260	0	163	185	0	216	47	368
Confl. Peds. (#/hr)	11		17	17		11			11	11		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		Prot	NA	Free
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases	2											Free
Actuated Green, G (s)	78.0	57.0		16.0	47.0		22.0	30.0		22.0	30.0	145.0
Effective Green, g (s)	78.0	57.0		16.0	47.0		22.0	30.0		22.0	30.0	145.0
Actuated g/C Ratio	0.54	0.39		0.11	0.32		0.15	0.21		0.15	0.21	1.00
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	
Lane Grp Cap (vph)	360	1312		188	1024		264	346		262	376	1546
v/s Ratio Prot	c0.19	0.37		0.02	c0.40		0.09	c0.11		c0.13	0.03	
v/s Ratio Perm	0.37											0.24
v/c Ratio	1.04	0.95		0.17	1.23		0.62	0.54		0.82	0.12	0.24
Uniform Delay, d1	48.1	42.5		58.5	49.0		57.6	51.3		59.6	46.8	0.0
Progression Factor	1.00	1.00		1.05	0.71		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	57.9	14.0		0.1	105.7		4.9	2.0		19.4	0.2	0.4
Delay (s)	106.0	56.5		61.8	140.5		62.4	53.3		79.0	47.0	0.4
Level of Service	F	E		E	F		E	D		E	D	A
Approach Delay (s)		67.9			138.7			57.3			30.8	
Approach LOS		E			F			E			C	

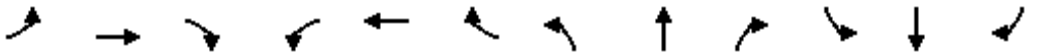
Intersection Summary			
HCM 2000 Control Delay	85.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	10	20	65	0	15	25	240	70	25	435	0
Future Volume (veh/h)	50	10	20	65	0	15	25	240	70	25	435	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.97		0.94	0.98		0.94	1.00		0.96	0.99		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1900	1900	1900	1900	1885	1885	1885
Adj Flow Rate, veh/h	54	11	22	71	0	16	27	261	76	27	473	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	1	1	1
Cap, veh/h	375	82	74	471	27	52	181	590	162	173	799	0
Arrive On Green	0.19	0.19	0.19	0.19	0.00	0.19	0.44	0.44	0.44	0.44	0.44	0.00
Sat Flow, veh/h	717	426	387	1068	138	272	55	1335	367	43	1807	0
Grp Volume(v), veh/h	87	0	0	87	0	0	364	0	0	500	0	0
Grp Sat Flow(s),veh/h/ln	1529	0	0	1478	0	0	1757	0	0	1850	0	0
Q Serve(g_s), 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
Cycle Q Clear(g_c), s	1.0	0.0	0.0	1.0	0.0	0.0	3.5	0.0	0.0	5.0	0.0	0.0
Prop In Lane	0.62		0.25	0.82		0.18	0.07		0.21	0.05		0.00
Lane Grp Cap(c), veh/h	531	0	0	550	0	0	934	0	0	972	0	0
V/C Ratio(X)	0.16	0.00	0.00	0.16	0.00	0.00	0.39	0.00	0.00	0.51	0.00	0.00
Avail Cap(c_a), veh/h	1346	0	0	1326	0	0	2414	0	0	2557	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	8.4	0.0	0.0	4.8	0.0	0.0	5.2	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.6	0.0	0.0	8.6	0.0	0.0	5.1	0.0	0.0	5.6	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		87			87			364			500	
Approach Delay, s/veh		8.6			8.6			5.1			5.6	
Approach LOS		A			A			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	15.4	9.2	15.4	9.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	32.5	18.5	32.5	18.5
Max Q Clear Time (g_c+I1), s	5.5	3.0	7.0	3.0
Green Ext Time (p_c), s	2.4	0.3	3.3	0.3

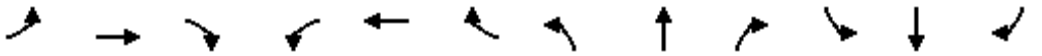
Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	680	885	185	240	500	120	185	360	525	215	530	130
Future Volume (vph)	680	885	185	240	500	120	185	360	525	215	530	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	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	0.95	0.95
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3333		1725	3455	1494	1728	1818	1525	1728	1720	1430
Flt Permitted	0.95	1.00		0.24	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3333		441	3455	1494	1728	1818	1525	1728	1720	1430
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	701	912	191	247	515	124	191	371	541	222	546	134
RTOR Reduction (vph)	0	12	0	0	0	95	0	0	129	0	1	89
Lane Group Flow (vph)	701	1091	0	247	515	29	191	371	412	222	558	32
Confl. Peds. (#/hr)	4		12	12		4	8					8
Confl. Bikes (#/hr)			5			2			2			3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases				6		6			4			4
Actuated Green, G (s)	40.0	65.0		43.0	34.0	34.0	13.0	38.0	38.0	13.0	38.0	38.0
Effective Green, g (s)	40.0	65.0		43.0	34.0	34.0	13.0	38.0	38.0	13.0	38.0	38.0
Actuated g/C Ratio	0.28	0.45		0.30	0.23	0.23	0.09	0.26	0.26	0.09	0.26	0.26
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	476	1494		210	810	350	154	476	399	154	450	374
v/s Ratio Prot	c0.41	0.33		0.07	0.15		0.11	0.20		c0.13	c0.32	
v/s Ratio Perm				c0.28		0.02			0.27			0.02
v/c Ratio	1.47	0.73		1.18	0.64	0.08	1.24	0.78	1.03	1.44	1.24	0.08
Uniform Delay, d1	52.5	32.8		45.0	49.9	43.3	66.0	49.6	53.5	66.0	53.5	40.4
Progression Factor	1.24	0.28		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	213.8	0.2		117.8	1.6	0.1	151.2	8.4	53.6	231.5	126.0	0.1
Delay (s)	279.0	9.2		162.8	51.6	43.4	217.2	58.0	107.1	297.5	179.5	40.5
Level of Service	F	A		F	D	D	F	E	F	F	F	D
Approach Delay (s)		114.1			81.4			109.6			189.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	121.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	110.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1560	185	25	750	40	155	0	145	50	10	60
Future Volume (vph)	0	1560	185	25	750	40	155	0	145	50	10	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		0.95		1.00	0.95		1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		0.99		1.00	1.00		1.00	0.97		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
Frt		0.98		1.00	0.99		1.00	0.85		1.00	1.00	0.85
Flt Protected		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		3376		1711	3387		1745	1518		1728	1818	1546
Flt Permitted		1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)		3376		1711	3387		1745	1518		1728	1818	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	1642	195	26	789	42	163	0	153	53	11	63
RTOR Reduction (vph)	0	6	0	0	2	0	0	109	0	0	0	45
Lane Group Flow (vph)	0	1831	0	26	829	0	163	44	0	53	11	18
Confl. Peds. (#/hr)	11		17	17		11			11	11		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases	2											4
Actuated Green, G (s)		61.0		9.0	32.0		13.0	42.0		13.0	42.0	42.0
Effective Green, g (s)		61.0		9.0	32.0		13.0	42.0		13.0	42.0	42.0
Actuated g/C Ratio		0.42		0.06	0.22		0.09	0.29		0.09	0.29	0.29
Clearance Time (s)		5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)		3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)		1420		106	747		156	439		154	526	447
v/s Ratio Prot		c0.54		c0.02	0.24		c0.09	c0.03		0.03	0.01	
v/s Ratio Perm												0.01
v/c Ratio		1.29		0.25	1.11		1.04	0.10		0.34	0.02	0.04
Uniform Delay, d1		42.0		64.8	56.5		66.0	37.7		62.0	36.8	37.0
Progression Factor		1.00		0.93	0.59		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		135.6		0.5	58.2		84.4	0.1		1.8	0.0	0.1
Delay (s)		177.6		61.1	91.8		150.4	37.8		63.8	36.8	37.1
Level of Service		F		E	F		F	D		E	D	D
Approach Delay (s)		177.6			90.9			95.9			48.2	
Approach LOS		F			F			F			D	

Intersection Summary			
HCM 2000 Control Delay	140.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	485	925	15	10	5
Future Vol, veh/h	5	485	925	15	10	5
Conflicting Peds, #/hr	2	0	0	2	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	5	505	964	16	10	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	982	0	-	0	1491	976
Stage 1	-	-	-	-	974	-
Stage 2	-	-	-	-	517	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	711	-	-	-	138	307
Stage 1	-	-	-	-	369	-
Stage 2	-	-	-	-	603	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	710	-	-	-	136	306
Mov Cap-2 Maneuver	-	-	-	-	265	-
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	602	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	710	-	-	-	277
HCM Lane V/C Ratio	0.007	-	-	-	0.056
HCM Control Delay (s)	10.1	-	-	-	18.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

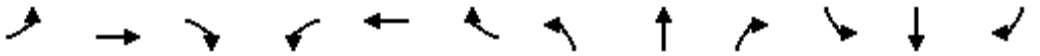
MOVEMENT SUMMARY

Site: 101 [Lincoln & Potter - Option 2]

Future (2040) Weekday PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Lincoln Street												
3	L2	962	0.0	0.618	10.6	LOS B	5.9	147.4	0.51	0.62	0.51	33.8
8	T1	201	0.0	0.244	4.6	LOS A	1.4	34.7	0.37	0.47	0.37	36.9
18	R2	71	0.0	0.244	4.9	LOS A	1.4	34.7	0.37	0.47	0.37	35.7
Approach		1234	0.0	0.618	9.3	LOS A	5.9	147.4	0.48	0.59	0.48	34.4
East: Potter Street												
1	L2	38	0.0	0.137	13.9	LOS B	0.6	15.6	0.69	0.85	0.69	34.5
6	T1	33	0.0	0.137	7.9	LOS A	0.6	15.6	0.69	0.85	0.69	34.4
16	R2	16	0.0	0.137	8.0	LOS A	0.6	15.6	0.69	0.85	0.69	33.4
Approach		87	0.0	0.137	10.5	LOS B	0.6	15.6	0.69	0.85	0.69	34.2
North: Lincoln Street												
7	L2	27	1.0	0.985	58.9	LOS E	22.3	561.9	1.00	1.75	3.12	20.9
4	T1	408	1.0	0.985	53.0	LOS E	22.3	561.9	1.00	1.75	3.12	20.9
14	R2	92	1.0	0.985	53.0	LOS E	22.3	561.9	1.00	1.75	3.12	20.5
Approach		527	1.0	0.985	53.3	LOS D	22.3	561.9	1.00	1.75	3.12	20.8
West: Potter Street												
5	L2	109	0.0	0.551	13.1	LOS B	4.9	122.1	0.80	0.82	0.87	35.5
2	T1	16	0.0	0.551	7.2	LOS A	4.9	122.1	0.80	0.82	0.87	35.4
12	R2	413	0.0	0.551	7.2	LOS A	4.9	122.1	0.80	0.82	0.87	34.3
Approach		538	0.0	0.551	8.4	LOS A	4.9	122.1	0.80	0.82	0.87	34.6
All Vehicles		2386	0.2	0.985	18.8	LOS B	22.3	561.9	0.67	0.91	1.16	30.1

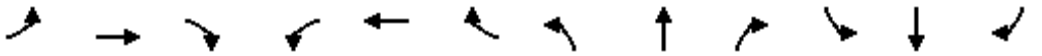
Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	935	195	240	690	105	255	320	525	130	300	60
Future Volume (vph)	45	935	195	240	690	105	255	320	525	130	300	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	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	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1728	3333		1728	3455	1495	1728	1818	1524	1728	1765	
Flt Permitted	0.95	1.00		0.09	1.00	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1728	3333		156	3455	1495	1728	1818	1524	1728	1765	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	964	201	247	711	108	263	330	541	134	309	62
RTOR Reduction (vph)	0	12	0	0	0	73	0	0	238	0	5	0
Lane Group Flow (vph)	46	1153	0	247	711	35	263	330	303	134	366	0
Confl. Peds. (#/hr)	4		12	12		4	8					8
Confl. Bikes (#/hr)			5			2			2			3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases				6		6			4			
Actuated Green, G (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	
Effective Green, g (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	
Actuated g/C Ratio	0.18	0.39		0.43	0.32	0.32	0.15	0.21	0.21	0.15	0.21	
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	
Lane Grp Cap (vph)	309	1310		241	1119	484	262	376	315	262	365	
v/s Ratio Prot	0.03	c0.35		c0.11	0.21		c0.15	0.18		0.08	c0.21	
v/s Ratio Perm				c0.33		0.02			0.20			
v/c Ratio	0.15	0.88		1.02	0.64	0.07	1.00	0.88	0.96	0.51	1.00	
Uniform Delay, d1	50.2	40.8		43.9	41.7	33.9	61.5	55.7	56.9	56.6	57.5	
Progression Factor	1.68	0.36		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	3.5		64.6	1.2	0.1	56.6	20.5	40.6	2.2	48.0	
Delay (s)	84.5	18.2		108.5	42.9	34.0	118.1	76.2	97.5	58.8	105.5	
Level of Service	F	B		F	D	C	F	E	F	E	F	
Approach Delay (s)		20.7			57.2			96.1			93.1	
Approach LOS		C			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1005	185	25	720	260	155	100	100	70	45	350
Future Volume (vph)	355	1005	185	25	720	260	155	100	100	70	45	350
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	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	0.99		1.00	0.99		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.96		1.00	0.93		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1728	3340		1711	3242		1745	1675		1728	1818	1546
Flt Permitted	0.08	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	140	3340		1711	3242		1745	1675		1728	1818	1546
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	1058	195	26	758	274	163	105	105	74	47	368
RTOR Reduction (vph)	0	10	0	0	25	0	0	25	0	0	0	272
Lane Group Flow (vph)	374	1243	0	26	1007	0	163	185	0	74	47	96
Confl. Peds. (#/hr)	11		17	17		11			11	11		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases	2											4
Actuated Green, G (s)	78.0	57.0		16.0	47.0		22.0	30.0		22.0	30.0	30.0
Effective Green, g (s)	78.0	57.0		16.0	47.0		22.0	30.0		22.0	30.0	30.0
Actuated g/C Ratio	0.54	0.39		0.11	0.32		0.15	0.21		0.15	0.21	0.21
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	4.0	3.0		3.0	3.0		4.0	4.0		4.0	4.0	4.0
Lane Grp Cap (vph)	360	1312		188	1050		264	346		262	376	319
v/s Ratio Prot	c0.19	0.37		0.02	0.31		c0.09	c0.11		0.04	0.03	
v/s Ratio Perm	c0.37											0.06
v/c Ratio	1.04	0.95		0.14	0.96		0.62	0.54		0.28	0.12	0.30
Uniform Delay, d1	47.7	42.5		58.3	48.1		57.6	51.3		54.5	46.8	48.6
Progression Factor	1.00	1.00		1.19	0.53		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	57.9	14.0		0.2	13.9		4.9	2.0		0.8	0.2	0.7
Delay (s)	105.6	56.5		69.6	39.6		62.4	53.3		55.3	47.0	49.4
Level of Service	F	E		E	D		E	D		E	D	D
Approach Delay (s)		67.8			40.3			57.3			50.0	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	56.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

MOVEMENT SUMMARY

Site: 101 [King & Potter & I-5 NB Ramps - Option 3]

Future (2040) Weekday PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: King Street												
3a	L1	667	0.0	0.562	9.5	LOS A	4.3	106.8	0.44	0.62	0.44	34.4
8	T1	10	0.0	0.562	4.8	LOS A	4.3	106.8	0.44	0.62	0.44	34.7
18	R2	68	0.0	0.562	4.8	LOS A	4.3	106.8	0.44	0.62	0.44	33.7
Approach		745	0.0	0.562	9.0	LOS A	4.3	106.8	0.44	0.62	0.44	34.3
East: Potter Street												
1	L2	26	0.0	0.377	13.5	LOS B	2.6	64.1	0.76	0.78	0.76	35.8
16a	R1	302	0.0	0.377	7.2	LOS A	2.6	64.1	0.76	0.78	0.76	35.3
16	R2	5	0.0	0.377	7.6	LOS A	2.6	64.1	0.76	0.78	0.76	34.6
Approach		333	0.0	0.377	7.7	LOS A	2.6	64.1	0.76	0.78	0.76	35.4
North: King Street												
7	L2	5	0.0	0.023	15.5	LOS B	0.1	3.6	0.78	0.69	0.78	33.9
4	T1	5	0.0	0.023	9.6	LOS A	0.1	3.6	0.78	0.69	0.78	33.8
14b	R3	5	0.0	0.023	9.8	LOS A	0.1	3.6	0.78	0.69	0.78	32.5
Approach		16	0.0	0.023	11.6	LOS B	0.1	3.6	0.78	0.69	0.78	33.4
SouthWest: I-5 NB Off Ramp												
5x	L2	1	0.0	0.360	10.0	LOS A	2.7	68.6	0.21	0.46	0.21	37.7
5ax	L1	5	0.0	0.360	8.7	LOS A	2.7	68.6	0.21	0.46	0.21	37.3
12ax	R1	135	0.0	0.360	3.7	LOS A	2.7	68.6	0.21	0.46	0.21	37.2
12bx	R3	370	0.0	0.360	4.2	LOS A	2.7	68.6	0.21	0.46	0.21	36.0
Approach		511	0.0	0.360	4.1	LOS A	2.7	68.6	0.21	0.46	0.21	36.3
All Vehicles		1605	0.0	0.562	7.2	LOS A	4.3	106.8	0.44	0.60	0.44	35.1

Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

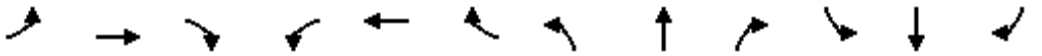
Site: 101 [Lincoln & Potter - Option 3]

Future (2040) Weekday PM Peak Hour
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Lincoln Street												
3	L2	217	0.0	0.343	10.7	LOS B	2.1	53.1	0.44	0.60	0.44	35.5
8	T1	152	0.0	0.343	4.8	LOS A	2.1	53.1	0.44	0.60	0.44	35.3
18	R2	60	0.0	0.343	4.9	LOS A	2.1	53.1	0.44	0.60	0.44	34.3
Approach		429	0.0	0.343	7.8	LOS A	2.1	53.1	0.44	0.60	0.44	35.3
East: Potter Street												
1	L2	38	0.0	0.085	11.8	LOS B	0.4	11.2	0.55	0.65	0.55	35.3
6	T1	33	0.0	0.085	5.9	LOS A	0.4	11.2	0.55	0.65	0.55	35.2
16	R2	16	0.0	0.085	6.0	LOS A	0.4	11.2	0.55	0.65	0.55	34.2
Approach		87	0.0	0.085	8.5	LOS A	0.4	11.2	0.55	0.65	0.55	35.0
North: Lincoln Street												
7	L2	27	1.0	0.416	11.2	LOS B	2.7	67.0	0.52	0.55	0.52	36.3
4	T1	370	1.0	0.416	5.3	LOS A	2.7	67.0	0.52	0.55	0.52	36.2
14	R2	98	1.0	0.416	5.4	LOS A	2.7	67.0	0.52	0.55	0.52	35.1
Approach		495	1.0	0.416	5.6	LOS A	2.7	67.0	0.52	0.55	0.52	36.0
West: Potter Street												
5	L2	163	0.0	0.202	11.6	LOS B	1.2	28.9	0.55	0.70	0.55	34.5
2	T1	27	0.0	0.202	5.6	LOS A	1.2	28.9	0.55	0.70	0.55	34.4
12	R2	27	0.0	0.202	5.7	LOS A	1.2	28.9	0.55	0.70	0.55	33.4
Approach		217	0.0	0.202	10.1	LOS B	1.2	28.9	0.55	0.70	0.55	34.3
All Vehicles		1228	0.4	0.416	7.4	LOS A	2.7	67.0	0.50	0.60	0.50	35.4

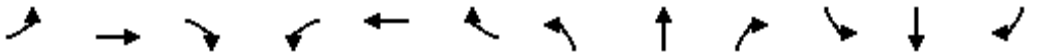
Site Level of Service (LOS) Method: Delay & Degree of Saturation (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
Intersection and Approach LOS values are based on average delay for all movements (v/c not used).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	875	185	240	840	55	390	170	525	130	300	535
Future Volume (vph)	45	875	185	240	840	55	390	170	525	130	300	535
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	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	0.95	0.95
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00	0.99	1.00	0.99	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.97		1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1728	3332		1727	3455	1495	1728	1818	1524	1728	1631	1429
Flt Permitted	0.95	1.00		0.11	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1728	3332		209	3455	1495	1728	1818	1524	1728	1631	1429
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	46	902	191	247	866	57	402	175	541	134	309	552
RTOR Reduction (vph)	0	12	0	0	0	39	0	0	242	0	12	220
Lane Group Flow (vph)	46	1081	0	247	866	18	402	175	299	134	441	188
Confl. Peds. (#/hr)	4		12	12		4	8					8
Confl. Bikes (#/hr)			5			2			2			3
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	4		3	4	
Permitted Phases				6		6			4			4
Actuated Green, G (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	30.0
Effective Green, g (s)	26.0	57.0		63.0	47.0	47.0	22.0	30.0	30.0	22.0	30.0	30.0
Actuated g/C Ratio	0.18	0.39		0.43	0.32	0.32	0.15	0.21	0.21	0.15	0.21	0.21
Clearance Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	4.0	3.0		3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	309	1309		258	1119	484	262	376	315	262	337	295
v/s Ratio Prot	0.03	c0.32		c0.11	0.25		c0.23	0.10		0.08	c0.27	
v/s Ratio Perm				c0.31		0.01			0.20			0.13
v/c Ratio	0.15	0.83		0.96	0.77	0.04	1.53	0.47	0.95	0.51	1.31	0.64
Uniform Delay, d1	50.2	39.5		36.7	44.2	33.5	61.5	50.5	56.8	56.6	57.5	52.5
Progression Factor	1.76	0.30		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1	1.8		43.9	3.4	0.0	258.8	1.2	37.3	2.2	158.8	5.0
Delay (s)	88.6	13.6		80.5	47.6	33.6	320.3	51.7	94.0	58.8	216.3	57.6
Level of Service	F	B		F	D	C	F	D	F	E	F	E
Approach Delay (s)		16.6			53.9			168.8			130.0	
Approach LOS		B			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	90.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	108.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	1005	185	25	1070	630	155	100	100	0	0	0
Future Volume (vph)	355	1005	185	25	1070	630	155	100	100	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	11	11	11	11
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	1.00				
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00				
Frt	1.00	0.98		1.00	0.94		1.00	0.93				
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (prot)	1728	3340		1711	3196		1745	1675				
Flt Permitted	0.08	1.00		0.95	1.00		0.95	1.00				
Satd. Flow (perm)	140	3340		1711	3196		1745	1675				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	374	1058	195	26	1126	663	163	105	105	0	0	0
RTOR Reduction (vph)	0	10	0	0	59	0	0	25	0	0	0	0
Lane Group Flow (vph)	374	1243	0	26	1730	0	163	185	0	0	0	0
Confl. Peds. (#/hr)	11		17	17		11			11	11		
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	0%	0%	0%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA		Prot	NA				
Protected Phases	5	2		1	6		3	4				
Permitted Phases	2											
Actuated Green, G (s)	78.0	57.0		16.0	47.0		22.0	30.0				
Effective Green, g (s)	78.0	57.0		16.0	47.0		22.0	30.0				
Actuated g/C Ratio	0.54	0.39		0.11	0.32		0.15	0.21				
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0				
Vehicle Extension (s)	4.0	3.0		3.0	3.0		4.0	4.0				
Lane Grp Cap (vph)	360	1312		188	1035		264	346				
v/s Ratio Prot	c0.19	0.37		0.02	c0.54		c0.09	c0.11				
v/s Ratio Perm	0.37											
v/c Ratio	1.04	0.95		0.14	1.67		0.62	0.54				
Uniform Delay, d1	48.1	42.5		58.3	49.0		57.6	51.3				
Progression Factor	1.00	1.00		1.05	0.77		1.00	1.00				
Incremental Delay, d2	57.9	14.0		0.1	303.3		4.9	2.0				
Delay (s)	106.0	56.5		61.5	341.0		62.4	53.3				
Level of Service	F	E		E	F		E	D				
Approach Delay (s)		67.9			337.0			57.3			0.0	
Approach LOS		E			F			E			A	

Intersection Summary			
HCM 2000 Control Delay	194.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	98.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	305

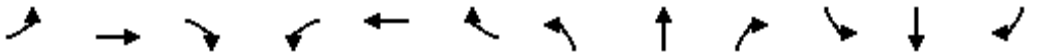
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑					↰		↱	↰		
Traffic Vol, veh/h	0	490	0	0	0	0	925	0	65	15	0	0
Future Vol, veh/h	0	490	0	0	0	0	925	0	65	15	0	0
Conflicting Peds, #/hr	2	0	3	3	0	2	3	0	3	2	0	2
Sign Control	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	0	-	-
Veh in Median Storage, #	-	0	-	-	16983	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	510	0	0	0	0	964	0	68	16	0	0

Major/Minor	Major1			Minor1			Minor2		
Conflicting Flow All	-	0	-	513	-	513	547	-	-
Stage 1	-	-	-	510	-	-	0	-	-
Stage 2	-	-	-	3	-	-	547	-	-
Critical Hdwy	-	-	-	7.1	-	6.2	7.1	-	-
Critical Hdwy Stg 1	-	-	-	6.1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	-
Follow-up Hdwy	-	-	-	3.5	-	3.3	3.5	-	-
Pot Cap-1 Maneuver	0	-	0	~ 475	0	565	451	0	0
Stage 1	0	-	0	~ 550	0	-	-	0	0
Stage 2	0	-	0	-	0	-	525	0	0
Platoon blocked, %		-							
Mov Cap-1 Maneuver	-	-	-	~ 474	-	565	397	-	-
Mov Cap-2 Maneuver	-	-	-	~ 474	-	-	397	-	-
Stage 1	-	-	-	~ 550	-	-	-	-	-
Stage 2	-	-	-	-	-	-	462	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	$ 460.3	14.4
HCM LOS		F	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	SBLn1
Capacity (veh/h)	474	565	-	397
HCM Lane V/C Ratio	2.033	0.12	-	0.039
HCM Control Delay (s)	$ 491.8	12.2	-	14.4
HCM Lane LOS	F	B	-	B
HCM 95th %tile Q(veh)	66.6	0.4	-	0.1

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	25	380	65	0	15	0	140	55	25	435	0
Future Volume (veh/h)	155	25	380	65	0	15	0	140	55	25	435	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.95	1.00		0.90	1.00		0.92	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	1900	1900	1900	1900	1900	1900	0	1900	1900	1885	1885	0
Adj Flow Rate, veh/h	168	27	413	71	0	16	0	152	60	27	473	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0	0	0	0	0	0	0	1	1	0
Cap, veh/h	448	24	360	130	0	29	0	208	82	25	441	0
Arrive On Green	0.25	0.25	0.25	0.09	0.00	0.09	0.00	0.16	0.16	0.25	0.25	0.00
Sat Flow, veh/h	1810	95	1455	1411	0	318	0	1260	497	102	1779	0
Grp Volume(v), veh/h	168	0	440	87	0	0	0	0	212	500	0	0
Grp Sat Flow(s),veh/h/ln	1810	0	1550	1729	0	0	0	0	1757	1880	0	0
Q Serve(g_s), s	5.6	0.0	18.0	3.5	0.0	0.0	0.0	0.0	8.3	18.0	0.0	0.0
Cycle Q Clear(g_c), s	5.6	0.0	18.0	3.5	0.0	0.0	0.0	0.0	8.3	18.0	0.0	0.0
Prop In Lane	1.00		0.94	0.82		0.18	0.00		0.28	0.05		0.00
Lane Grp Cap(c), veh/h	448	0	384	159	0	0	0	0	290	466	0	0
V/C Ratio(X)	0.37	0.00	1.15	0.55	0.00	0.00	0.00	0.00	0.73	1.07	0.00	0.00
Avail Cap(c_a), veh/h	448	0	384	428	0	0	0	0	435	466	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	22.7	0.0	27.3	31.5	0.0	0.0	0.0	0.0	28.8	27.3	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	92.0	2.9	0.0	0.0	0.0	0.0	3.6	62.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	0.0	16.1	1.5	0.0	0.0	0.0	0.0	3.6	15.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.2	0.0	119.3	34.5	0.0	0.0	0.0	0.0	32.4	90.1	0.0	0.0
LnGrp LOS	C	A	F	C	A	A	A	A	C	F	A	A
Approach Vol, veh/h		608			87			212			500	
Approach Delay, s/veh		92.7			34.5			32.4			90.1	
Approach LOS		F			C			C			F	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.5		22.5		22.5		11.2				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		18.0		18.0		18.0		18.0				
Max Q Clear Time (g_c+I1), s		10.3		20.0		20.0		5.5				
Green Ext Time (p_c), s		0.6		0.0		0.0		0.3				

Intersection Summary		
HCM 6th Ctrl Delay	79.1	
HCM 6th LOS	E	

Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.

Appendix D: List of Potential Projects

ID	Group	Project Name	Project Limits	Project Description	Screening Conclusions	Analysis Conclusions	Timing (Short, Mid, Long) and Priority (High, Med, Low)
5	A. Lincoln/Lakeway	Lincoln St / Lakeway Dr Bike Facilities	Intersection	Add bike facilities (bike lanes and bike boxes) to support bike system improvements to Lakeway Dr and Lincoln St.	**ANALYZE**; determine what it looks like and cost; assume 10-12' sidewalk on north side	CONSOLIDATE; combine with Project 37a	NA
6	A. Lincoln/Lakeway	Lincoln St / Lakeway Dr Rechannelization	Intersection	Add separate SBR turn lane by removing parking on east side of Lincoln St.	**NOT ADVANCED**; SBR not high volume; may get SBR with Lincoln road diet		
7	A. Lincoln/Lakeway	Lincoln St / Lakeway Dr Signal Improvements	Intersection	Modify signal and install Leading Pedestrian Intervals (LPIs).	**ANALYZE**; determine what it looks like and cost	CONSOLIDATE; combine with Project 37a	NA
35	A. Lincoln/Lakeway	Lincoln St / Lakeway Dr Protected Intersection	Intersection	Rechannelize/expand intersection to provide protected bicycle lanes at the intersection; requires removal of WB transit queue jump	**ANALYZE**; determine what it looks like and cost; assume 10-12' sidewalk on north side	INCLUDE; project description updated	Mid-High
13	B. Lakeway Corridor	Lakeway Dr Rechannelization (Opt1)	Lakeway Dr, between Ellis St to Puget St	Construct two-way raised multiuse pathway (10-foot shared sidewalk) on north side of street. Includes driveway consolidation to improve safety.	**ANALYZE**; determine overall footprint and operations; related to access management projects	CONSOLIDATE; combine with Project 37a	NA
14	B. Lakeway Corridor	Lakeway Dr Rechannelization (Opt2)	Lakeway Dr, between Ellis St to Puget St	Road diet to 3 lanes, add buffered bike lanes on each side of street	**NOT ADVANCED**; not feasible given daily vehicle volumes		
15	B. Lakeway Corridor	Lakeway Dr Rechannelization (Opt3)	Lakeway Dr, between Ellis St to Puget St	Rechannelize to reduce lane widths, add 5-foot bike lane on each side of street	**NOT ADVANCED**; not feasible given daily vehicle volumes		
16	B. Lakeway Corridor	Lakeway Dr Signal Upgrades	Lakeway Dr, between Ellis St to Puget St	Upgrade signal equipment to add signal coordination with WSDOT (I-5 SB Ramp) and HAWK signals for better progression through corridor.	**FORWARD**; project scope and benefit straighforward	INCLUDE	Short-High
19	B. Lakeway Corridor	I-5 SB Ramp / Lakeway Dr Intersection Improvements	Intersection	Rechannelize to improve E-W ped/bike movements and add 10-ft sidewalk on north side. Provide two left-turn lanes. Crosswalk on west leg adjusted to create center refuge island.	**ANALYZE**; determine what it looks like and cost; assume 10-12' sidewalk on north side	INCLUDE; project description updated	Mid-High
30	B. Lakeway Corridor	Orleans St / Lakeway Dr Signal or Nevada St / Lakeway Dr Signal	Intersection	Depending on future development plans in the area, provide a signal at either Nevada St or Orleans St to facilitate better access from local neighborhoods. May require remove of HAWK near Orleans St	**ANALYZE**; determine what it looks like and cost; assume YMCA relocate to Civic Field	INCLUDE; project description updated	Mid-High
37a	B. Lakeway Corridor	Lakeway Dr Multiuse Path and Access Management, Phase 1	Lakeway Dr, between James St to Lincoln St	Add multiuse path on north side. Add c-curb and/or consolidate driveways to restrict left-turn movements to/from mid-block locations.	**ANALYZE**; determine what it looks like and cost; assume 10-12' sidewalk on north side	INCLUDE; project description updated	Mid-High
37b	B. Lakeway Corridor	Lakeway Dr Multiuse Path and Access Management, Phase 2	Lakeway Dr, between Lincoln St to Orleans St	Add multiuse path on north side. Add c-curb and/or consolidate driveways to restrict left-turn movements to/from mid-block locations.	**ANALYZE**; determine what it looks like and cost; assume 10-12' sidewalk on north side	INCLUDE; project description updated	Mid-High
37c	B. Lakeway Corridor	Lakeway Dr Multiuse Path and Access Management, Phase 3	Lakeway Dr, between I-5 and Ellis St	Add multiuse path on north side. Requires utility relocation and street tree removals to avoid additional right-of-way and impacts to adjoining residential properties.	Revised from Project 13	INCLUDE	Long-Med

ID	Group	Project Name	Project Limits	Project Description	Screening Conclusions	Analysis Conclusions	Timing (Short, Mid, Long) and Priority (High, Med, Low)
40	B. Lakeway Corridor	Lakeway Dr / King St Rechannelization and Signal Improvements	Intersection	Remove underutilized traffic movements (SBT, SBL, and WBL) to add green time to critical movements, reduce queueing, and provide safer pedestrian crossing on north leg. Combine with access management project.	**ANALYZE**; determine what it looks like and cost; assume 10-12' sidewalk on north side	REMOVE	NA
42	B. Lakeway Corridor	Lakeway St / Nevada St Improvement	Intersection	Address future LOS issue	**ANALYZE**; consider possibilities related to access management	CONSOLIDATE; combine with Project 30	Mid-Med
24b	B. Lakeway Corridor	I-5 Ramp Metering: SB Ramps at Lakeway Dr	I-5 SB Ramp from Lakeway Dr	Add ramp meeting signals at this ramp. Requires additional storage through construction.	**FORWARD**; WSDOT priority, but outside scope of this study	INCLUDE	Long-Low
24	C. I-5/King/Potter IC	I-5 Ramp Metering: NB Ramps at King St	I-5 NB Ramp from King St	Add ramp meeting signals at this ramp. Requires additional storage through construction.	**FORWARD**; WSDOT priority, but outside scope of this study	INCLUDE	Long-Low
34	C. I-5/King/Potter IC	Lincoln St / Potter St Signal	Intersection	Install signal or roundabout	**ANALYZE**; determine what it looks like and cost; assume YMCA relocate to Civic Field	INCLUDE; project description updated	Mid-Med
36	C. I-5/King/Potter IC	I-5 NB Ramps / King St / Potter St Intersection Improvement	Intersection	Construct compact roundabout	**ANALYZE**; determine feasibility, cost, and safety benefits	INCLUDE; project description updated	Mid-Med
4	D. Lincoln Corridor	Byron Ave / Lincoln St Green Bike Markings	Intersection	Install dashed green box bike markings in northbound Lincoln St bike lane across Byron Ave	**FORWARD**; straightforward project; incorporate into Lincoln Rechannelization project	INCLUDE	Short-High
47	D. Lincoln Corridor	Byron Ave Sidewalk Improvement	Bryon Ave, Lincoln St to Ashley Ave	Construct missing sidewalk on north side of road.	**FORWARD**; WWU responsibility with future development of Lincoln Creek Site; Reprioritize in 2021-2022 PMP update	INCLUDE	Short-high
8	D. Lincoln Corridor	Lincoln St / Viking Cir HAWK Signal	Near intersection	Install HAWK signal with center island refuge near Lincoln St / Viking Cir to facilitate safe pedestrian crossing to WTA bus stops.	**FORWARD**; straightforward project; incorporate into Lincoln Rechannelization project	CONSOLIDATE; with Project 10a	Short-High
9	D. Lincoln Corridor	Lincoln St / Maple St Traffic Signal and Maple Street Sidewalk	Intersection	Install traffic signal	**FORWARD**; Required; incorporate into Lincoln project	INCLUDE or CONSOLIDATE with Project 10a	Short-High
11	D. Lincoln Corridor	Lincoln St Sidewalk	Lincoln St, between Elwood Ave and Maple St	Install sidewalk on west side of Lincoln St (requires road widening to 3-lanes)	**FORWARD**; Pvt Development; possibly incorporate into Lincoln Street project	CONSOLIDATE; with Project 10a	Mid-High
25	D. Lincoln Corridor	Lincoln Creek Park and Ride Access Improvements	Lincoln Creek Park and Ride Frontage	Relocate access or add traffic controls to improve safety of access	**FORWARD**; WWU project; Not part of Lincoln Street project	INCLUDE	Long-Med
41	D. Lincoln Corridor	Lincoln St / Byron Ave Improvement	Intersection	Address future LOS issue	**NOT ADVANCED**; to be reevaluated in future		
10a	D. Lincoln Corridor	Lincoln St Road Diet, Phase 1	Lincoln St, between Maple St and south Fred Meyer Driveway	Implement road diet to convert 5-lane road to 2/3-lane road. Install buffered bike lanes on both sides of roadway.	ANALYZE; determine what it looks like and cost;	INCLUDE	Short-High
10c	D. Lincoln Corridor	Lincoln St Road Diet, Phase 3	Lincoln St, between south Fred Meyer Driveway and Lakeway Dr	Implement road diet to convert 5-lane road to 2/3-lane road. Install bike lanes on both sides. Likely requires driveway relocation at Fred Meyer gas station, and may require shifting other Fred Meyer driveways for improved ped/bike safety and improved traffic flows.	**ANALYZE**; determine what it looks like and cost; needs to coordinate with Lincoln-Lakeway intersection improvements	INCLUDE	Med-High

ID	Group	Project Name	Project Limits	Project Description	Screening Conclusions	Analysis Conclusions	Timing (Short, Mid, Long) and Priority (High, Med, Low)
31	E. Meador Crossing	Enhanced Bike Facility on Meador Ave	Meador Ave/Lincoln St corridor, between James St and Potter St	Provide 12-ft multiuse path along curve section near I-5 undercrossing. Green bike markings at other conflict areas.	**ANALYZE**; determine feasibility, design, and cost;	INCLUDE; project description updated	Med-High
33	E. Meador Crossing	James St / Meador Ave Improvement	Intersection	Install signal or roundabout	**ANALYZE**; determine feasibility, design, and cost;	INCLUDE; project description updated	Med-High
44	E. Meador Crossing	Lincoln St / Fraser St Improvement	Intersection	Install signal or roundabout	**ANALYZE**; determine feasibility, design, and cost;	INCLUDE; project description updated	Med-High
27a	F. I-5 Corridor Ped Crossing	I-5 Ped/Bike Overpass Crossing	I-5 Corridor, between Lakeway Dr and Samish Way	Construct pedestrian/bike overpass as safe and comfortable crossing of I-5 corridor away from interchanges. Consolidation Avenue ROW alignment.	**ANALYZE**; determine feasibility and cost estimate; Very low probability of funding sources.	INCLUDE; confirm with PMP and BMP Updates	Long-Low
27b	F. I-5 Corridor Ped Crossing	I-5 Ped/Bike Tunnel Crossing	I-5 Corridor, between Lakeway Dr and Samish Way	Bore a pedestrian/bike tunnel beneath I-5 as safe and comfortable crossing away from interchanges. Maple or Abbott Sts.	**NOT ADVANCED**; not considered feasible or fundable		
20	G. I-5 Samish IC	I-5 SB On-Ramp / 36th St / Fielding Ave Intersection Improvement	Intersection	Install compact roundabout to improve operations and safety	**ANALYZE**; determine feasibility, design, and cost;	INCLUDE	Mid-Med
21	G. I-5 Samish IC	I-5 NB Off-Ramp / Samish Way Intersection Improvement	Intersection	Install compact roundabout to improve operations and safety	**ANALYZE**; determine feasibility, design, and cost;	INCLUDE	Mid-High
45	G. I-5 Samish IC	36th St / Fielding Ave Bike Corridor Facility	36th St, between Samish Way and Fielding Ave; Fielding Ave, between 32nd St and 36th St	Add bike facility per BMP *(Eliminate from BMP in 2022 update as infeasible)*	**NOT ADVANCED**; WSDOT ROW; Road widening required; not considered feasible		
17	H. Iowa/Ohio IC	I-5 NB Ramp / Iowa St Rechannelization	Intersection	Add separate NBR lane to improve overall intersection capacity (more green time for east-west movements).	**FORWARD**; straightforward WSDOT project;	INCLUDE	Mid-Med
18	H. Iowa/Ohio IC	I-5 SB Ramp / Ohio St Access Management	Ohio St, between I-5 and James St	Due to safety and congestion concerns, close WBR movement to King Street. Also add c-curb to restrict mid-block left-turn movements along Ohio St.	**FORWARD**; WSDOT priority, but outside scope of this study	INCLUDE	Long-Low
22	H. Iowa/Ohio IC	I-5 Ramp Metering: NB Ramp at Iowa St	I-5 NB Ramp from Iowa St	Add ramp metering signals at this ramp. May require additional storage through construction or rechannelization.	**FORWARD**; WSDOT priority, but outside scope of this study	INCLUDE	Long-Low
23	H. Iowa/Ohio IC	I-5 Ramp Metering: SB Ramp at Ohio St	I-5 SB Ramp from Ohio St	Add ramp meeting signals at this ramp. May require additional storage through construction or rechannelization.	**FORWARD**; WSDOT priority, but outside scope of this study	INCLUDE	Long-Low
2	I. North End	Meador Ave Bridge Reconstruction	Bridge on Meador Ave east of N State St	Reconstruct bridge over Whatcom Creek. Federal BRAC grant funding has been secured and construction scheduled 2022.	**CONSTRUCTION 2022-2023**	**INCLUDE**	Short-High
3	I. North End	James St Bridge Reconstruction	Bridge on James St north of Meador Ave	Reconstruct bridge over Whatcom Creek. Federal BRAC grant funding has been secured and construction scheduled 2022.	**CONSTRUCTION 2022-2023**	**INCLUDE**	Short-High
12	I. North End	Lincoln St Bicycle Boulevard	Lincoln St, between E North St and Iowa	Install bicycle boulevard	**FORWARD**; Requires on-street parking removal; Reconsider in 2022 BMP update	INCLUDE	Long-Low
32	I. North End	James St Bicycle Boulevard	James St, between Meador and Iowa	Install bicycle boulevard	**NOT ADVANCED**; Not feasible; James from Iowa-Ohio is one-way SB; no bikeways on Ohio		
46a	I. North End	N State St Bike Corridor Facility, Phase 1	N. State St, between York St and Meador Ave (Including NB 2-lane slip connection from Forest St to N. State Street)	Add bike facility per BMP	**ANALYZE**; determine feasibility, design, and cost;	INCLUDE; project description updated	Med-High
46b	I. North End	N State St Bike Corridor Facility, Phase 2	State St, between Meador Ave and Ohio St	Add bike facility per BMP	**FORWARD**; requires further study; 2022 BMP update	INCLUDE	Short-High

ID	Group	Project Name	Project Limits	Project Description	Screening Conclusions	Analysis Conclusions	Timing (Short, Mid, Long) and Priority (High, Med, Low)
28	J. Other	ADA Upgrades at Transit Stops	Citywide WTA Routes	Upgrade ADA accessibility at 200 transit stops across the City as identified and prioritized by WTA	**FORWARD**; City-WTA 50/50 Funding Partnership at $75,000/year for 5 years	INCLUDE	Short-High
29a	J. Other	N Samish Way / Abbott St Signal	Intersection	Install traffic signal	**FORWARD**; part of Samish Village Plan	INCLUDE	Short-High
29b	J. Other	N Samish Way / Consolidation Ave Signal	Intersection	Install traffic signal	**FORWARD**; part of Samish Village Plan	INCLUDE	Short-High
43	J. Other	Ellis St / Forest St / York St Improvement	Intersection (Is this a congestion issue?)	Address future LOS issue (Confirm LOS findings)	**NOT ADVANCED**; not a key multimodal location		

Appendix E: Concept Design Graphics

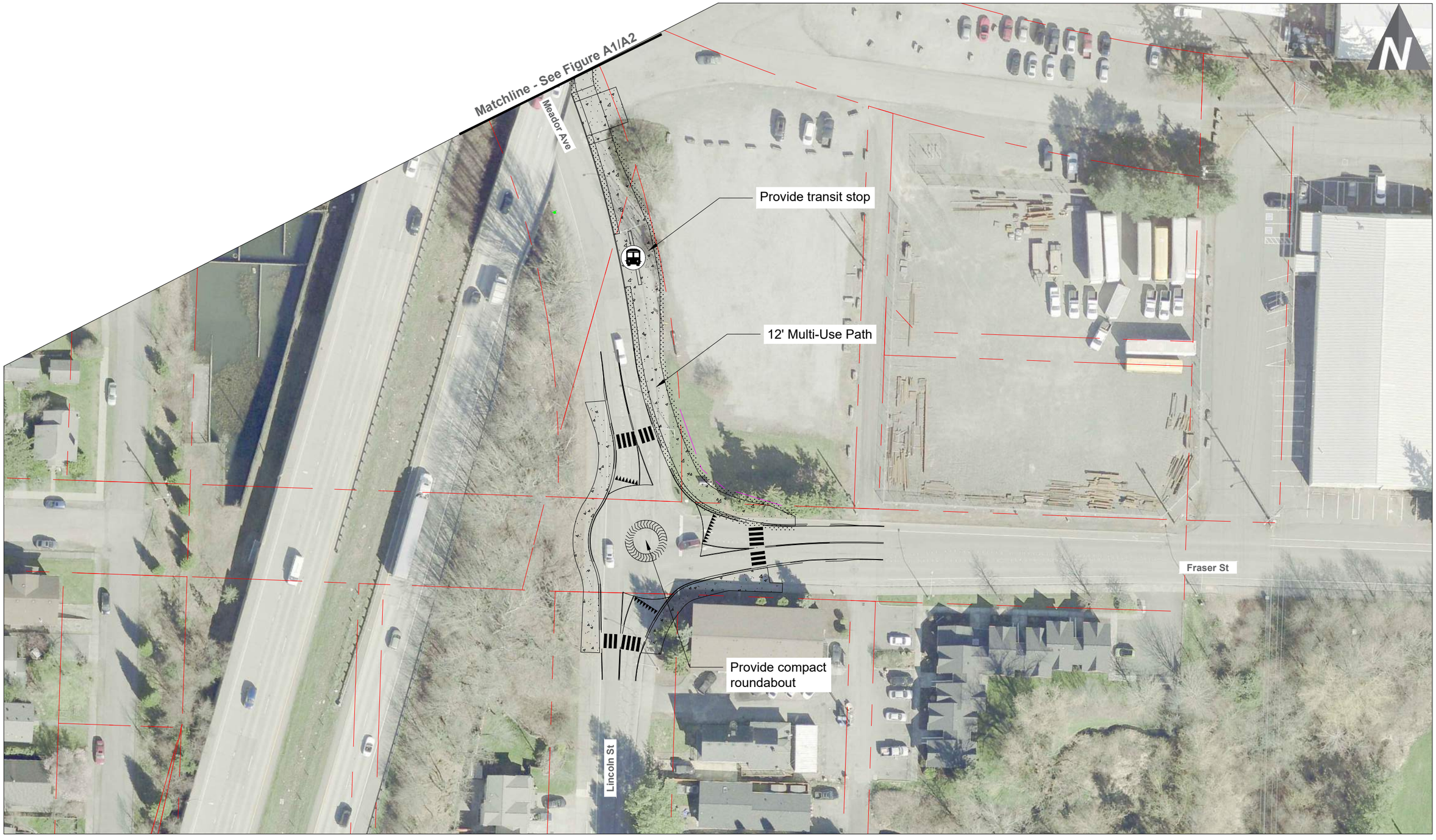
Meador Ave Multi-Use Path

City of Bellingham - Multimodal Improvements Study

Fraser Street Signal

transpogroup

LL Project 44



Meador Ave Multi-Use Path

City of Bellingham - Multimodal Improvements Study

Fraser Street Roundabout

transpogroup

LL Project 44

Jul 27, 2021 - 4:38pm kristenc M:\19\1.19390.00 - Lincoln-Lakeway Multimodal Transportation Study\Engineering\CAD\Conceptual\Meador Concept3.dwg Layout: Meador Ave-2

Meador Ave Multi-Use Path

City of Bellingham - Multimodal Improvements Study

James Street Signal

transpogroup

LL Project 31, 33

Jul 27, 2021 - 4:37pm kristenc M:\19\1.19390.00 - Lincoln-Lakeway Multimodal Transportation Study\Engineering\CAD\Conceptual\Meador Concept2.dwg Layout: Meador Ave-1

Meador Ave Multi-Use Path

City of Bellingham - Multimodal Improvements Study

James Street Roundabout

transpogroup

LL Project 31, 33

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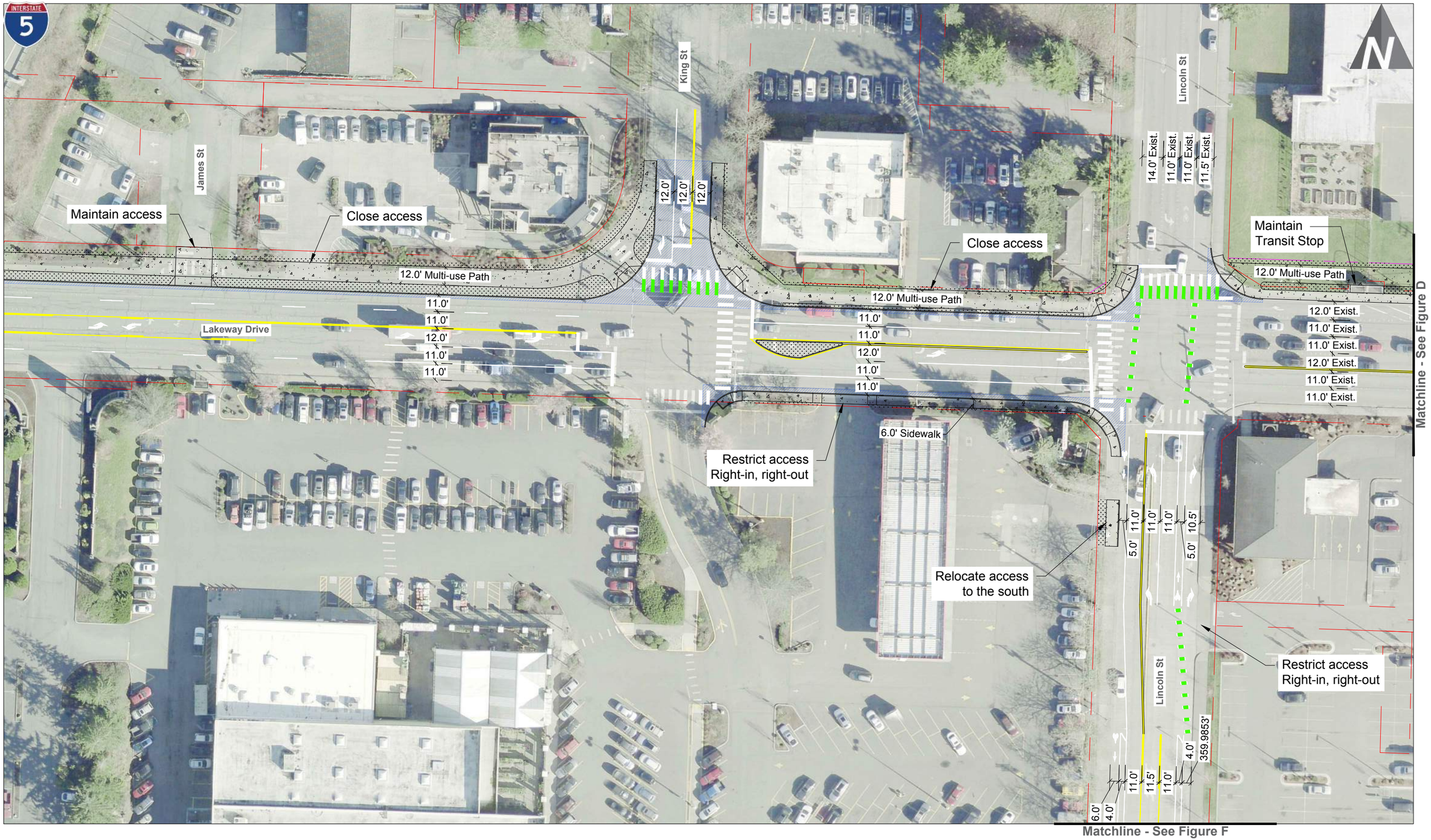


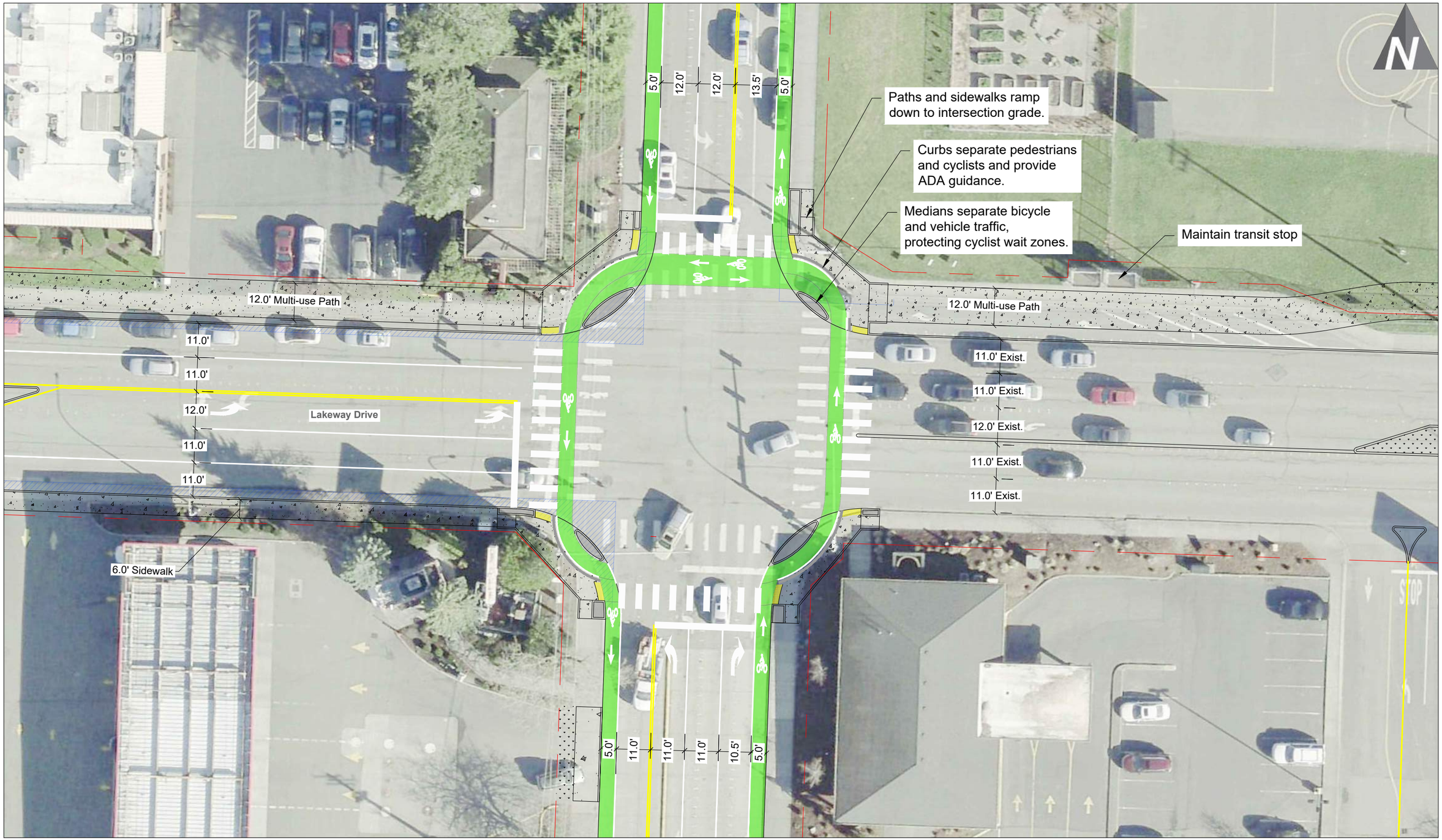
Lakeway Drive Multi-Use Path

City of Bellingham - Multimodal Improvements Study

I-5 to Lincoln Street

transpogroup

LL Project 37a



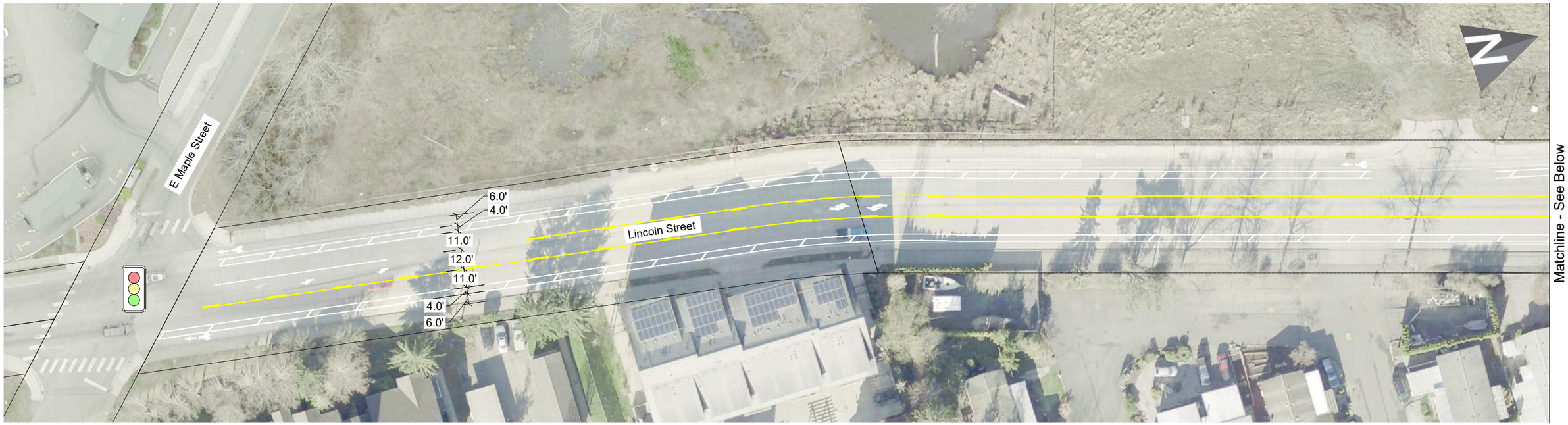
Lakeway Drive Multi-Use Path

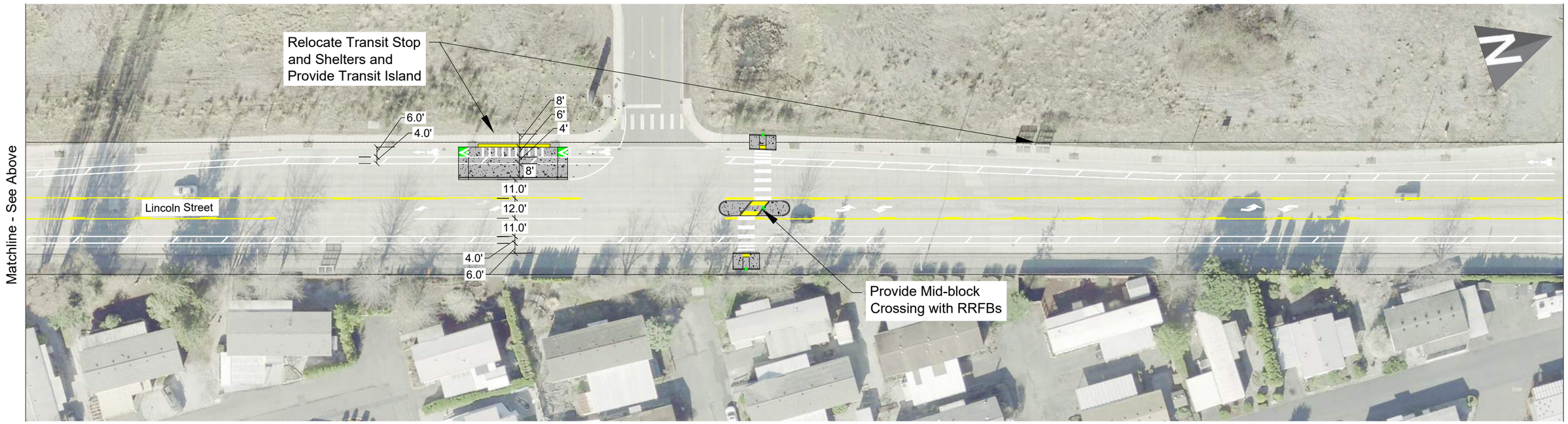
City of Bellingham - Multimodal Improvements Study

Lincoln Street Fully Protected Intersection

transpogroup

LL Project 35





Lincoln Street - Buffered Bike Lanes

Maple Street to Lakeway Drive

City of Bellingham - Multimodal Improvements Study

transpogroup

LL Project 10a

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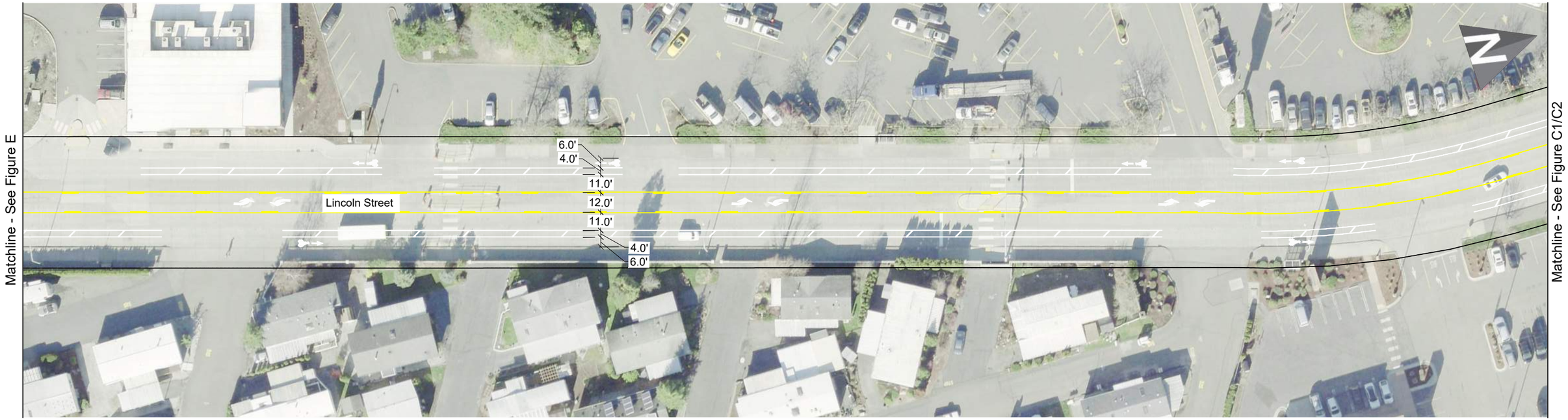

Lincoln Street - Buffered Bike Lanes

Maple Street to Lakeway Drive

City of Bellingham - Multimodal Improvements Study

transpogroup

LL Project 10a

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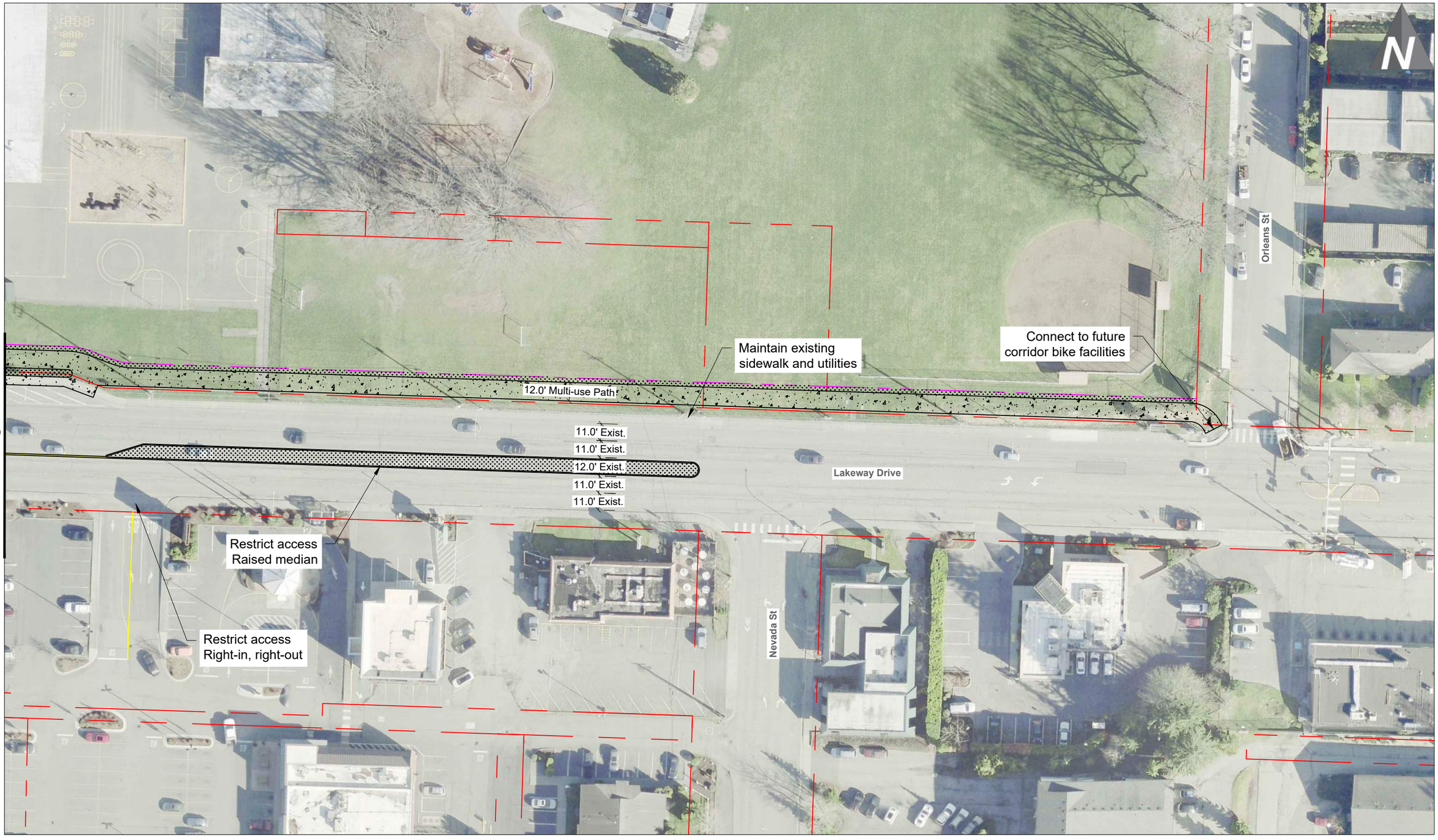


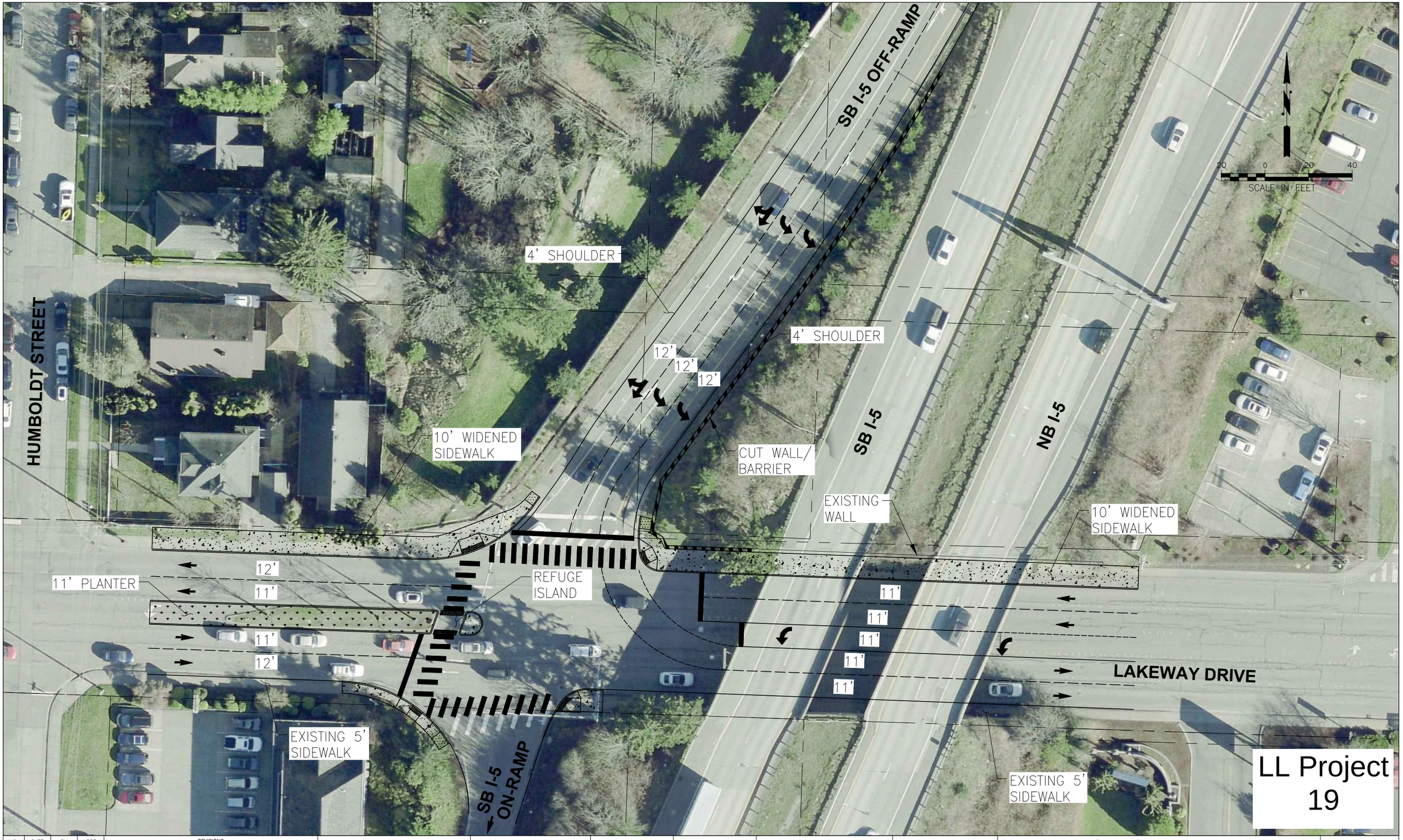
Lakeway Drive Multi-Use Path

Lincoln Street to Orleans Street

City of Bellingham - Multimodal Improvements Study

transpogroup

LL Project 37b



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NO.	DATE	BY	APPR.	REVISIONS

APPROVED FOR CONSTRUCTION

ENGINEERING MANAGER DATE

PROJECT MANAGER DATE

PROJECT ENGINEER DATE

MRR
DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE: 06/30/2021

LOCHNER

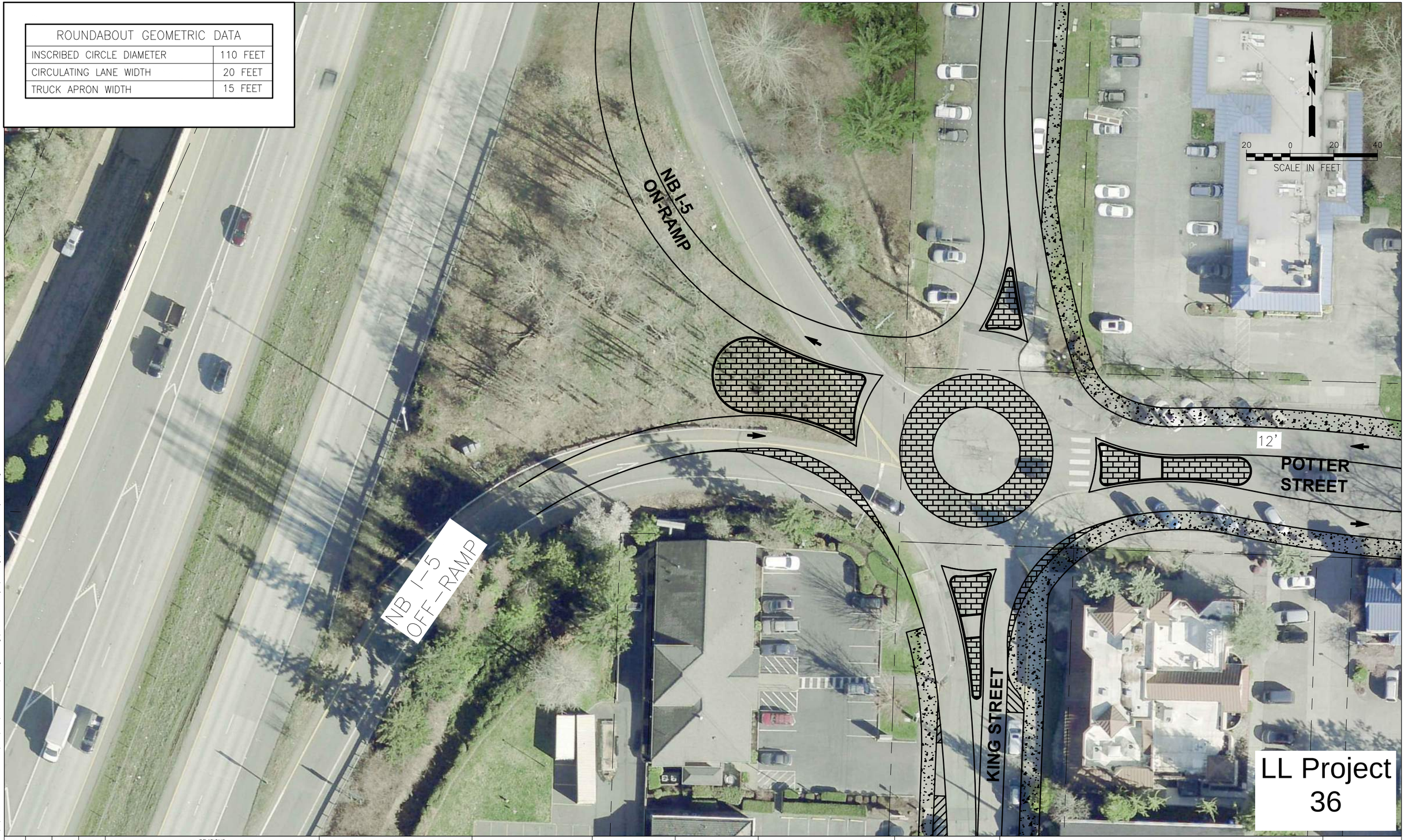
City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITES 13 AND 19
I-5 SB RAMPS / LAKEWAY DRIVE

DRAWING NUMBER

SHT ____ OF ____

ROUNDABOUT GEOMETRIC DATA	
INSCRIBED CIRCLE DIAMETER	110 FEET
CIRCULATING LANE WIDTH	20 FEET
TRUCK APRON WIDTH	15 FEET



LL Project 36

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NO.	DATE	BY	APPR.	REVISIONS

APPROVED FOR CONSTRUCTION

ENGINEERING MANAGER DATE

PROJECT MANAGER DATE

PROJECT ENGINEER DATE

CN
DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE: 06/30/2021

LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITE 36
I-5 NB RAMPS / KING ST. / POTTER ST.

DRAWING NUMBER

SHT ____ OF ____

ROUNDABOUT GEOMETRIC DATA	
INSCRIBED CIRCLE DIAMETER	80 FEET
CIRCULATING LANE WIDTH	18 FEET
TRUCK APRON WIDTH	10 FEET

20 0 20 40
SCALE IN FEET

POTTER STREET

12'

LINCOLN STREET

CARL COZIER ELEMENTARY SCHOOL

LL Project 34

7/6/2021 5:11 PM I:\BLV\PRJ\00001729\7_Engineering\CADD_Roadways\Working\CNeal\17294-Layouts3.dwg

NO.	DATE	BY	APPR.	REVISIONS

APPROVED FOR CONSTRUCTION

ENGINEERING MANAGER DATE

PROJECT MANAGER DATE

PROJECT ENGINEER DATE

CN
DESIGNED BY
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CHECKED BY
APPROVED BY
DATE: 06/30/2021

LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITE 34
POTTER ST. / LINCOLN ST.

DRAWING NUMBER

SHT ____ OF ____

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SCALE IN FEET

LL Project 34

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NO.	DATE	BY	APPR.	REVISIONS

APPROVED FOR CONSTRUCTION

ENGINEERING MANAGER DATE

PROJECT MANAGER DATE

PROJECT ENGINEER DATE

MRR
DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE: 07/07/2021

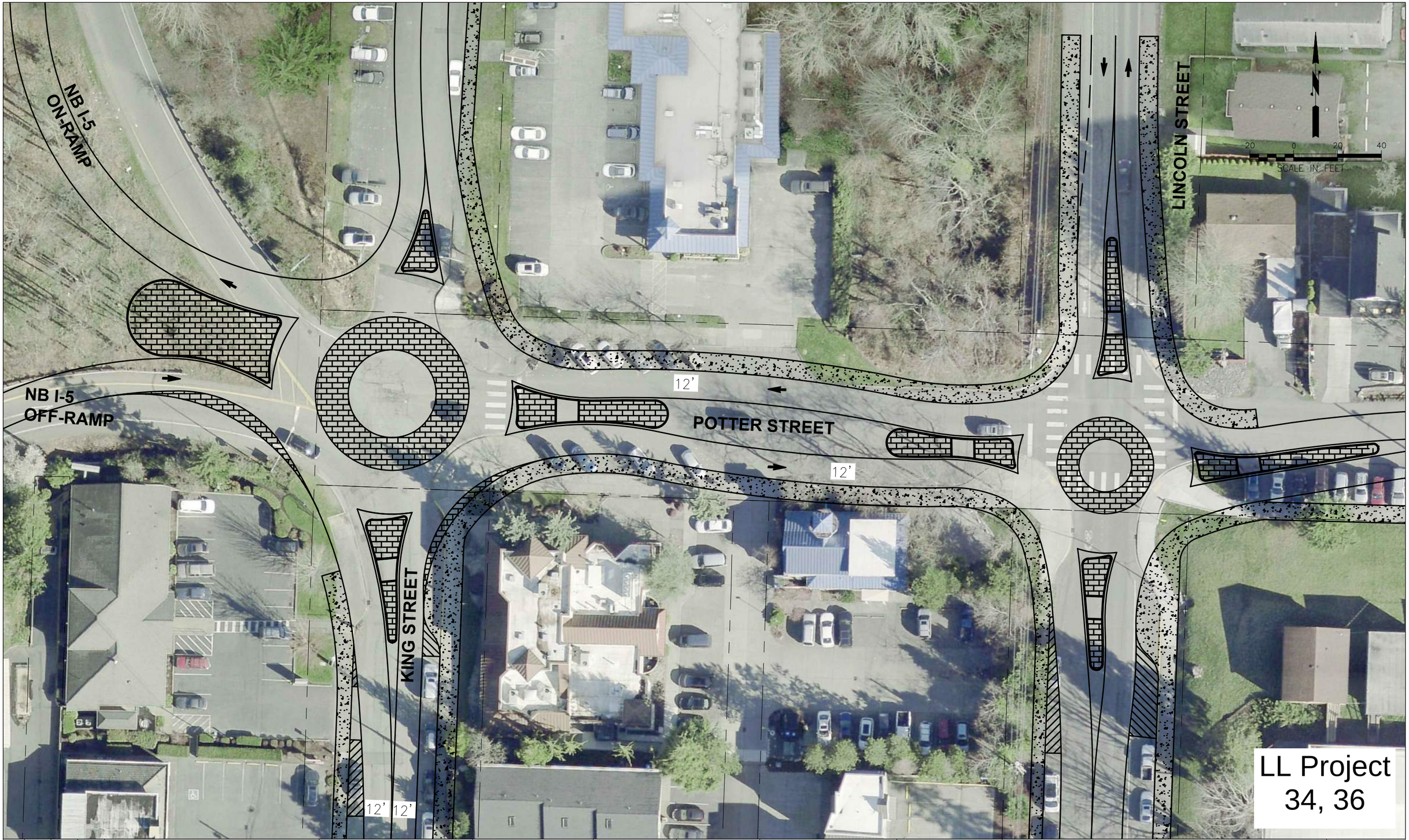
LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITE 34
POTTER ST. / LINCOLN ST.

DRAWING NUMBER

SHT ____ OF ____



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NO.	DATE	BY	APPR.	REVISIONS

APPROVED FOR CONSTRUCTION

ENGINEERING MANAGER DATE

PROJECT MANAGER DATE

PROJECT ENGINEER DATE

MRR
DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE: 06/30/2021

LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITES 34 AND 36
I-5 NB RAMPS / KING ST. / POTTER ST. / LINCOLN ST.

DRAWING NUMBER

SHT ____ OF ____

ROUNDABOUT GEOMETRIC DATA	
INSCRIBED CIRCLE DIAMETER	90 FEET
CIRCULATING LANE WIDTH	18 FEET
TRUCK APRON WIDTH	16 FEET

DESIGN VEHICLES
- EB – WB-67
- SB THRU – WB-67
- SB RIGHT TURN – WB-67D

LL Project 20

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APPROVED BY

DATE: 06/30/2021

LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITE 20
I-5 SB ON-RAMP / 36TH ST / FIELDING AVE

DRAWING NUMBER

SHT ____ OF ____

ROUNDABOUT GEOMETRIC DATA	
INSCRIBED CIRCLE DIAMETER	100 FEET
CIRCULATING LANE WIDTH	18 FEET
TRUCK APRON WIDTH	16 FEET

DESIGN VEHICLES
- NB/SB – WB-67
- EB LEFT TURN – WB-67
- EB RIGHT TURN– WB-40

LL Project 21

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APPROVED BY
DATE: 06/30/2021

LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

SITE 21
I-5 NB OFF-RAMP / S SAMISH WAY

DRAWING NUMBER

SHT ____ OF ____

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SCALE IN FEET

LL Project 27a

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NO.	DATE	BY	APPR.	REVISIONS

APPROVED FOR CONSTRUCTION

ENGINEERING MANAGER DATE

PROJECT MANAGER DATE

PROJECT ENGINEER DATE

DESIGNED BY

DRAWN BY

CHECKED BY

APPROVED BY

DATE:

LOCHNER

City of Bellingham
Lincoln-Lakeway Multimodal Transportation Study

VIEW 27

DRAWING NUMBER

SHT ____ OF XX

Appendix F: Cost Estimate Sheets

City of Bellingham

(LL Project 37a)

Lincoln/Lakeway Multimodal Improvements
Lakeway Drive Multi-Use Path - I-5 to Lincoln

Transpo Job No. 1.19390.00
City Job No.

Engineer's Opinion of Probable Cost for Planning Level Design

Description of Work:

1. Rechannelize Lakeway Dr between I-5 and Lincoln Street with access management
2. Construct multiuse path on the north side of Lakeway Dr

Assumptions and Exclusions:

1. Does not include right of way cost
2. Unit costs are 15% higher than ES-552 & ES-553 bid tabs (10/23 & 6/18/2020)

Date completed: 8/22/2021
Checked by: BAS

	Item Description	Quantity	Unit	Unit Cost	Total	%
	Type A Cement Concrete Curb and Gutter	1180	LF	$ 43.30	$ 51,091	*8.2%*
	4" Cement Concrete Sidewalk	1266	SY	$ 67.85	$ 85,898	*13.7%*
	Cement Concrete Driveway	93	SY	$ 165.14	$ 15,358	*2.5%*
	WMA CL. 1/2IN. PG 64-22"	68	TON	$ 201.25	$ 13,685	*2.2%*
	Cement Concrete Curb Ramp	5	EA	$ 2,392.00	$ 11,960	*1.9%*
	Cement Concrete Curb Ramp (Wide)	3	EA	$ 4,784.00	$ 14,352	*2.3%*
	Detectable warning surface	220	SF	$ 46.00	$ 10,120	*1.6%*
	Longitudinal striping (RPM)	16	HUND	$ 447.00	$ 7,152	*1.1%*
	Solid Green Pavement Marking	18	SY	$ 146.05	$ 2,629	*0.4%*
	Plastic stop bar	129	LF	$ 20.70	$ 2,670	*0.4%*
	Plastic Turn Arrow	6	EA	$ 370.00	$ 2,220	*0.4%*
	Plastic crosswalk	594	SF	$ 10.98	$ 6,524	*1.0%*
	Cement traffic curb	250	LF	$ 57.50	$ 14,375	*114.7%*
	Roadway Excavation incl. haul	450	CY	$ 34.50	$ 15,525	*12.4%*
	Remove Pavement Markings	1	LS	$ 10,000.00	$ 10,000	*1.6%*
	Remove asphalt concrete pavement & obstructions	250	TON	$ 17.25	$ 4,313	*0.7%*
	Clear and Grub	1	LS	$ 10,000.00	$ 10,000	*1.6%*
	Sawcutting	500	IN-FT	$ 0.75	$ 374	*0.1%*
	Lawn installation with sod	474	SY	$ 26.45	$ 12,537	*2.0%*
	Topsoil Type A	474	SY	$ 25.30	$ 11,992	*100.0%*
	Catch Basin Type I (Thru Curb)	2	EA	$ 2,340.25	$ 4,681	*0.7%*
	8" PVC Storm Drain	100	LF	$ 63.25	$ 6,325	*1.0%*
	Connect to Drainage Structure	2	EA	$ 902.75	$ 1,806	*0.3%*
	Adjust Catch Basin (Solid, Slip-Resistant Lid)	4	EA	$ 897.00	$ 3,588	*0.6%*
	Crushed surfacing top course	52	TN	$ 48.30	$ 2,512	*20.9%*
	Gravel base	147	TN	$ 29.90	$ 4,395	*0.7%*
	Utility pole relocations	5	EA	$ 50,000.00	$ 250,000	*39.9%*
	Signal Modifications (King and Lakeway)	1	LS	$ 50,000.00	$ 50,000	*8.0%*
Sub Total					$ 626,081	
	Engineering Design	20%			$ 125,216	
	City Project Management	10%			$ 62,608	
	Mobilization	10%			$ 62,608	
	Construction survey, SPCC and TESC	5%			$ 31,304	
	Temporary Traffic Control	25%			$ 156,520	
	Contingency	25%			$ 156,520	
TOTAL PLANNING LEVEL PROJECT ESTIMATE					**$ 1,221,000**	

City of Bellingham

(LL Project 37b)

Lincoln/Lakeway Multimodal Improvements
Lakeway Drive Multi-Use Path - Lincoln to Orleans

Transpo Job No. 1.19390.00
City Job No.

Engineer's Opinion of Probable Cost for Planning Level Design

Description of Work:

1. Crossing channelization at Lakeway and Lincoln
2. Access management on Lakeway east of Lincoln
3. Shared use path improvements on the north side of Lakeway to Orleans

Assumptions and Exclusions:

1. Does not include right of way cost
2. Unit costs are 15% higher than ES-552 & ES-553 bid tabs (10/23 & 6/18/2020)

Date completed: 8/22/2021
Checked by: BAS

	Item Description	Quantity	Unit	Unit Cost	Total	%
	Type A Cement Concrete Curb and Gutter	57	LF	$ 43.30	$ 2,468	*0.7%*
	4" Cement Concrete Sidewalk	1367	SY	$ 67.85	$ 92,751	*25.8%*
	WMA CL. 1/2IN. PG 64-22"	4	TON	$ 201.25	$ 805	*0.2%*
	Cement Concrete Curb Ramp	1	EA	$ 2,392.00	$ 2,392	*0.7%*
	Cement Concrete Curb Ramp (Wide)	1	EA	$ 4,784.00	$ 4,784	*1.3%*
	Detectable warning surface	60	SF	$ 46.00	$ 2,760	*0.8%*
	Solid Green Pavement Marking	46	SY	$ 146.05	$ 6,718	*1.9%*
	Plastic stop bar	25	LF	$ 20.70	$ 518	*0.1%*
	Plastic crosswalk	198	SF	$ 10.98	$ 2,175	*0.6%*
	Cement traffic curb	952	LF	$ 57.50	$ 54,740	*15.2%*
	Remove Pavement Markings	1	LS	$ 1,000.00	$ 1,000	*0.3%*
	Remove asphalt concrete pavement & obstructions	132	TON	$ 17.25	$ 2,277	*0.6%*
	Clear and Grub	1	LS	$ 5,000.00	$ 5,000	*1.4%*
	Sawcutting	4644	IN-FT	$ 0.75	$ 3,471	*1.0%*
	Lawn installation with sod	749	SY	$ 26.45	$ 19,811	*5.5%*
	Topsoil Type A	749	SY	$ 25.30	$ 18,950	*5.3%*
	Catch Basin Type I (Thru Curb)	1	EA	$ 2,340.25	$ 2,340	*0.7%*
	8" PVC Storm Drain	10	LF	$ 63.25	$ 633	*0.2%*
	Linear Drainage improvements	1	LS	$ 60,000.00	$ 60,000	*16.7%*
	Connect to Drainage Structure	1	EA	$ 902.75	$ 903	*0.3%*
	Crushed surfacing top course	4	TN	$ 48.30	$ 193	*0.1%*
	Utility Conflicts	1	LS	$ 75,000.00	$ 75,000	*20.9%*
Sub Total					$ 359,688	
	Engineering Design	20%			$ 71,938	
	City Project Management	10%			$ 35,969	
	Mobilization	10%			$ 35,969	
	Construction survey, SPCC and TESC	5%			$ 17,984	
	Temporary Traffic Control	25%			$ 89,922	
	Contingency	25%			$ 89,922	
TOTAL PLANNING LEVEL PROJECT ESTIMATE					**$ 701,000**	

City of Bellingham

(LL Projects 31, 33, 44)

Lincoln/Lakeway Multimodal Improvements

Signals

Meador Ave Multi-Use Path - Signals at James and Fraser

Transpo Job No. 1.19390.00
City Job No.

Engineer's Opinion of Probable Cost for Planning Level Design

Description of Work:

1. Install Muli-Use Path between James and Fraser north of Meador
2. Install signalized intersections at James and Fraser with Meador

Assumptions and Exclusions:

1. Does not include right of way cost
2. Unit costs are 15% higher than ES-552 & ES-553 bid tabs (10/23 & 6/18/2020)

Date completed: 8/22/2021
Checked by: BAS

	Item Description	Quantity	Unit	Unit Cost	Total	%
	4" Cement Concrete Sidewalk	1655	SY	$ 67.85	$ 112,292	*9.4%*
	Type A Cement Concrete Curb and Gutter	593	LF	$ 43.30	$ 25,675	*2.2%*
	WMA CL. 1/2IN. PG 64-22"	29	TON	$ 201.25	$ 5,836	*0.5%*
	Cement Concrete Curb Ramp	5	EA	$ 2,392.00	$ 11,960	*1.0%*
	Conrete Driveway	81	SY	$ 165.14	$ 13,376	*5.6%*
	Detectable warning surface	100	SF	$ 46.00	$ 4,600	*0.4%*
	Plastic crosswalk	900	SF	$ 10.98	$ 9,884	*0.8%*
	Plastic Bike Lane Symbol	8	EA	$ 410.00	$ 3,280	*1.1%*
	4" White Plastic Line	108	LF	$ 4.00	$ 432	*0.1%*
	Strucutral Earth Wall	1600	FF	$ 94.30	$ 150,880	*50.6%*
	Roadway Excavation incl. haul	119	CY	$ 34.50	$ 4,106	*1.4%*
	Gravel borrow for wall	30	CY	$ 39.10	$ 1,173	*0.4%*
	Remove Pavement Markings	1	LS	$ 2,500.00	$ 2,500	*0.8%*
	Remove asphalt concrete pavement	100	TON	$ 17.25	$ 1,725	*0.1%*
	Sawcutting	1800	IN-FT	$ 0.75	$ 1,346	*0.1%*
	Lawn installation with sod	500	SY	$ 26.45	$ 13,225	*1.1%*
	Topsoil Type A	500	SY	$ 25.30	$ 12,650	*1.1%*
	Adjust Catch Basin	3	EA	$ 4,500.00	$ 13,500	*1.1%*
	Transit stop relocation	1	LS	$ 10,000.00	$ 10,000	*8.4%*
	Highway support/path interaction	2	EA	$ 5,000.00	$ 10,000	*0.8%*
	Multi-Use Path Mini Roundabout	1	LS	$ 10,000.00	$ 10,000	*0.8%*
	Utility Conflicts	1	LS	$ 25,000.00	$ 25,000	*2.1%*
	Traffic Signal (Complete)	2	EA	$ 375,000.00	$ 750,000	*62.8%*
Sub Total					$ 1,193,440	
	Engineering Design	20%			$ 238,688	
	City Project Management	10%			$ 119,344	
	Mobilization	10%			$ 119,344	
	Construction survey, SPCC and TESC	5%			$ 59,672	
	Temporary Traffic Control	25%			$ 298,360	
	Contingency	25%			$ 298,360	
TOTAL PLANNING LEVEL PROJECT ESTIMATE					**$ 2,327,000**	

City of Bellingham
Lincoln/Lakeway Multimodal Improvements
Meador Ave Multi-Use Path - Signals at James and Fraser

(LL Projects 31, 33, 44)
Roundabouts

Transpo Job No. 1.19390.00
City Job No.

Engineer's Opinion of Probable Cost for Planning Level Design

Description of Work:
1. Install Muli-Use Path between James and Fraser north of Meador
2. Install compact roundabout intersections at James and Fraser with Meador (within ROW)

Assumptions and Exclusions:
1. Does not include right of way cost
2. Unit costs are 15% higher than ES-552 & ES-553 bid tabs (10/23 & 6/18/2020)

Date completed: 8/22/2021
Checked by: BAS

	Item Description	Quantity	Unit	Unit Cost	Total	%
	4" Cement Concrete Sidewalk	2212	SY	$ 67.85	$ 150,084	*16.7%*
	4" Cement Concrete, Stamped	184	SY	$ 172.50	$ 31,740	*3.5%*
	Type A Cement Concrete Curb and Gutter	1208	LF	$ 43.30	$ 52,303	*5.8%*
	Rolled Cement Concrete Curb and Gutter	202	LF	$ 64.69	$ 13,067	*1.5%*
	WMA CL. 1/2IN. PG 64-22"	834	TON	$ 201.25	$ 167,843	*18.7%*
	Cement Concrete Curb Ramp	8	EA	$ 2,392.00	$ 19,136	*2.1%*
	Conrete Driveway	81	SY	$ 165.14	$ 13,376	*1.5%*
	Detectable warning surface	160	SF	$ 46.00	$ 7,360	*0.8%*
	Plastic crosswalk	288	SF	$ 10.98	$ 3,163	*0.4%*
	Plastic Yield Bar	80	LF	$ 23.00	$ 1,840	*0.2%*
	Plastic Bike Lane Symbol	8	EA	$ 410.00	$ 3,280	*0.4%*
	4" Plastic Line	2110	LF	$ 4.00	$ 8,440	*0.9%*
	Strucutral Earth Wall	1600	FF	$ 94.30	$ 150,880	*16.8%*
	Roadway Excavation incl. haul	119	CY	$ 34.50	$ 4,106	*0.5%*
	Gravel borrow for wall	30	CY	$ 39.10	$ 1,173	*0.1%*
	Remove Pavement Markings	1	LS	$ 2,500.00	$ 2,500	*0.3%*
	Remove asphalt concrete pavement	2325	TON	$ 17.25	$ 40,106	*4.5%*
	Sawcutting	3000	IN-FT	$ 0.75	$ 2,243	*0.2%*
	Lawn installation with sod	1500	SY	$ 26.45	$ 39,675	*4.4%*
	Topsoil Type A	1500	SY	$ 25.30	$ 37,950	*4.2%*
	Adjust Catch Basin	3	EA	$ 4,500.00	$ 13,500	*1.5%*
	Crushed surfacing top course	370	TN	$ 48.30	$ 17,871	*2.0%*
	Gravel Base	1400	TN	$ 29.90	$ 41,860	*4.7%*
	Catch Basin Type I (Thru Curb)	4	EA	$ 2,340.25	$ 9,361	*22.4%*
	8" PVC Storm Drain	100	LF	$ 63.25	$ 6,325	*15.1%*
	Connect to Drainage Structure	4	EA	$ 902.75	$ 3,611	*8.6%*
	Transit stop relocation	1	LS	$ 10,000.00	$ 10,000	*1.1%*
	Highway support/path interaction	2	EA	$ 5,000.00	$ 10,000	*1.1%*
	Utility Conflicts	1	LS	$ 25,000.00	$ 25,000	*2.8%*
	Multi-Use Path Mini Roundabout	1	LS	$ 10,000.00	$ 10,000	*1.1%*
Sub Total					$ 897,793	
	Engineering Design	20%			$ 179,559	
	City Project Management	10%			$ 89,779	
	Mobilization	10%			$ 89,779	
	Construction survey, SPCC and TESC	5%			$ 44,890	
	Temporary Traffic Control	35%			$ 314,227	
	Contingency	25%			$ 224,448	
TOTAL PLANNING LEVEL PROJECT ESTIMATE					**$ 1,840,000**	

City of Bellingham

(LL Projects 10a, 10c)

Lincoln/Lakeway Multimodal Improvements
Lincoln Street Buffered Bike Lanes - Maple to Lakeway

Transpo Job No. 1.19390.00
City Job No.

Engineer's Opinion of Probable Cost for Planning Level Design

Description of Work:

1. Rechannelize Lincoln Street to include buffered bike lanes
2. Relocate Transit stops
3. Provide midblock RRFB crossing
4. Relocate one driveway south of Lakeway
5. Traffic signal at Maple Street

Assumptions and Exclusions:

1. Does not include right of way cost
2. Does not include costs of fully protected intersection at Lakeway
2. Unit costs are 15% higher than ES-552 & ES-553 bid tabs (10/23 & 6/18/2020)

Date completed: 8/22/2021
Checked by: BAS

	Item Description	Quantity	Unit	Unit Cost	Total	%
	Plastic Bike Lane Marking Symbol	15	EA	$ 410.00	$ 6,150	*1.0%*
	Longitudinal striping (plastic)	13229	LF	$ 4.00	$ 52,916	*9.0%*
	Longitudinal striping (RPM)	32	HUND	$ 447.00	$ 14,304	*2.4%*
	Buffer striping (hatching)	769	LF	$ 6.00	$ 4,614	*0.8%*
	Green painted bike lane	5	SY	$ 146.05	$ 730	*0.1%*
	Plastic Crosswalk	198	SF	$ 10.98	$ 2,175	*0.4%*
	Plastic Turn Arrow	20	EA	$ 370.00	$ 7,400	*1.3%*
	Cement Concrete Curb Ramp	12	EA	$ 2,392.00	$ 28,704	*4.9%*
	WMA CL. 1/2IN. PG 64-22"	18	TON	$ 201.25	$ 3,623	*6.2%*
	Detectable Warning Surface	240	SF	$ 46.00	$ 11,040	*1.9%*
	Conrete Driveway	28	SY	$ 165.14	$ 4,624	*0.8%*
	Mountable curb	153	LF	$ 63.42	$ 9,704	*1.6%*
	Cement traffic curb	199	LF	$ 57.50	$ 11,443	*1.9%*
	Median Island (concrete fill)	5	CY	$ 350.75	$ 1,754	*0.3%*
	Transit Island (concrete)	23	CY	$ 263.06	$ 6,050	*1.0%*
	Transit stop relocation	1	LS	$ 10,000.00	$ 10,000	*1.7%*
	RRFB System, Complete, Solar	1	EA	$ 23,000.00	$ 23,000	*3.9%*
	Remove Conflicting Pavement Markings	1	LS	$ 15,000.00	$ 15,000	*2.6%*
	Traffic Signal (Maple St)	1	EA	$ 375,000.00	$ 375,000	*63.8%*
Sub Total					$ 588,230	
	Engineering Design	20%			$ 117,646	
	City Project Management	10%			$ 58,823	
	Mobilization	10%			$ 58,823	
	Construction survey, SPCC and TESC	5%			$ 29,411	
	Temporary Traffic Control	25%			$ 147,057	
	Contingency	25%			$ 147,057	
TOTAL PLANNING LEVEL PROJECT ESTIMATE					**$ 1,147,000**	

City of Bellingham

(LL Project 37c)

Lincoln/Lakeway Multimodal Improvements
Lakeway Drive Multi-Use Path - I-5 to Ellis

Transpo Job No. 1.19390.00
City Job No.

Engineer's Opinion of Probable Cost for Planning Level Design

Description of Work:

1. Construct multiuse path on the north side of Lakeway Dr
2. Extend median island at I-5 ramp to create refuge

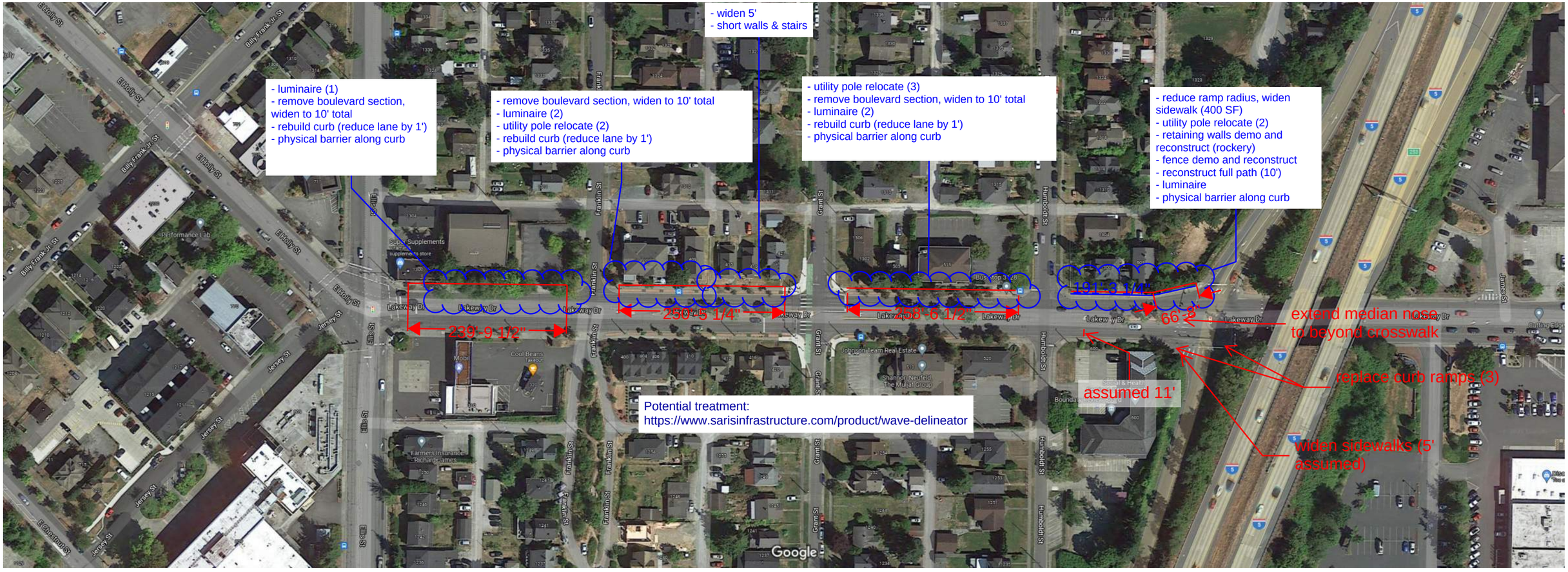
Assumptions and Exclusions:

1. Includes an estimate for right of way acquisiton and relocations
2. Unit costs are 15% higher than ES-552 & ES-553 bid tabs (10/23 & 6/18/2020)

Date completed: 10/19/2021
Checked by: BAS

	Item Description	Quantity	Unit	Unit Cost	Total	%
	Type A Cement Concrete Curb and Gutter	950	LF	$ 43.30	$ 41,133	*5.2%*
	4" Cement Concrete Sidewalk	1095	SY	$ 67.85	$ 74,296	*9.3%*
	WMA CL. 1/2IN. PG 64-22"	61	TON	$ 201.25	$ 12,276	*1.5%*
	Cement Concrete Curb Ramp	3	EA	$ 3,500.00	$ 10,500	*1.3%*
	Cement Concrete Curb Ramp (Wide)	7	EA	$ 4,800.00	$ 33,600	*4.2%*
	Detectable warning surface	340	SF	$ 46.00	$ 15,640	*2.0%*
	Roadway Excavation incl. haul	523	CY	$ 34.50	$ 18,044	*2.3%*
	Remove asphalt concrete pavement & obstructions	1	LS	$ 75,000	$ 75,000	*9.4%*
	Remove private improvements (fences, walls, landscaping, etc.)	1	LS	$ 25,000	$ 25,000	*3.1%*
	Clear and Grub	1	LS	$ 30,000	$ 30,000	*3.8%*
	Sawcutting	7600	IN-FT	$ 0.75	$ 5,681	*0.7%*
	Lawn installation with sod	400	SY	$ 26.45	$ 10,580	*1.3%*
	Topsoil Type A	400	SY	$ 25.30	$ 10,120	*1.3%*
	Retaining walls (<4')	150	FF	$ 95.00	$ 14,250	*1.8%*
	Catch Basin Type I (Thru Curb)	8	EA	$ 2,340.25	$ 18,722	*2.4%*
	8" PVC Storm Drain	120	LF	$ 63.25	$ 7,590	*1.0%*
	Connect to Drainage Structure	8	EA	$ 902.75	$ 7,222	*0.9%*
	Adjust Catch Basin (Solid, Slip-Resistant Lid)	8	EA	$ 897.00	$ 7,176	*0.9%*
	Crushed surfacing top course	281	TN	$ 48.30	$ 13,572	*1.7%*
	Gravel base	799	TN	$ 29.90	$ 23,890	*3.0%*
	Bikeway delineator	950	LF	$ 75.00	$ 71,250	*9.0%*
	Utility pole relocations	7	EA	$ 30,000	$ 210,000	*26.4%*
	Illumination poles	6	EA	$ 10,000	$ 60,000	*7.5%*
Sub Total					$ 795,542	
	Engineering Design	20%			$ 159,108	
	City Project Management	10%			$ 79,554	
	Mobilization	10%			$ 79,554	
	Construction survey, SPCC and TESC	5%			$ 39,777	
	Temporary Traffic Control	25%			$ 198,885	
	Contingency	25%			$ 198,885	
TOTAL PLANNING LEVEL PROJECT ESTIMATE					**$ 1,551,000**	

Google Maps Lakeway Dr



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Lakeway Dr

Directions Save Nearby Send to your phone Share

Washington

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 13: Lakeway Dr Rechannelizaton (Opt 1)**
	(under I-5 Overpass)
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Pavement Markings, Utilities, Signage, Retaining Structures, Surveying,
	Landscaping, Stormwater Management, and Erosion Control

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$27,967
	Grading	$4,240
	Drainage	$0
	Storm Sewer	$11,880
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$12,947
	Surfacing	$338
	Hot Mix Asphalt	$7,052
	Traffic	$46,032
	Other Items	$55,189
	Subtotal	**$165,645**
	PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%	$33,129
	City Project Management - 10%	$16,565
	Mobilization - 10%	$16,565
	Construction Survey, SPCC, and TESC - 5%	$8,282
	Temporary Traffic Control - 25%	$41,411
	Contingency - 25%	$41,411
	Right-of-Way/Easement Acquisition	$0
	Total Planning Level Project Estimate	**$323,000**

Disclaimers:

1. This estimate is prepared as a guide only and is subject to. It has been prepared to a standard of accuracy which, to the best of our knowledge and judgment, is sufficient to satisfy our understanding of the purpose of this estimate.
2. Lochner makes no warranty, either expressed or implied, as to the accuracy of this estimate.
3. This estimate is based on data found within the Washington State Department of Transportation Unit Bid Analysis.
4. Costs presented herein represent an opinion based on historical information and include retail sales tax.
5. This estimate does not consider the following:
   a. Cost associated with biological surveys, environmental (wetland) mitigations, modeled traffic analysis, land-use planning, geotechnical assessments, surveying, cultural resources, and environmental site assessments.
   b. Phased construction or out of regular sequence construction.
   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 13: Lakeway Dr Rechannelizaton (Opt 1)

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Clearing and Grubbing	0	0	0	0.0	AC	$10,000.00	$0
2	Sawcutting	380		6	2280	LF-IN	$0.75	$1,710
3	Removal of Structures and Obstructions				1	LS	$25,000.00	$25,000
4	Removing Asphalt Conc. Pavement	240	8	0.5	73	TN	$17.25	$1,257
							Preparation Total:	**$27,967**
No.	**Section 2: Grading**							
5	Roadway Excavation Incl. Haul	240	8	1	71	CY	$23.00	$1,636
6	Gravel Borrow Incl. Haul (Road and Utility Trenches)	140	3.5	2	74	TN	$35.00	$2,604
							Grading Total:	**$4,240**
No.	**Section 3: Drainage**							
							Drainage Total:	**$0**
No.	**Section 4: Storm Sewer**							
7	Catch Basin Type 1L				2	EA	$2,300.00	$4,600
8	Sched. A Storm Sewer Pipe 12 In. Diam.				140	LF	$52.00	$7,280
							Storm Sewer Total:	**$11,880**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
9	Structure Excavation Class A Incl. Haul	20	12	16	142	CY	$30.00	$4,267
10	Shoring or Extra Excavation Cl. A	16		16	1	LS	$1,000.00	$1,000
11	Gravity Block Wall (at end of ex. bridge abutment)	20		8	160	SF	$48.00	$7,680
							Structures Total:	**$12,947**
No.	**Section 8: Surfacing**							
12	Crushed Surfacing Top Course (2" Depth)	380	1.5	0.17	7	TN	$48.30	$338
							Surfacing Total:	**$338**
No.	**Section 9: Hot Mix Asphalt**							
13	HMA CL. 1/2 In. PG 58H-22 (6" Depth)	780		0.5	32	TN	$201.25	$6,482
14	Longitudinal Joint Seal	380			380	LF	$1.50	$570
							Hot Mix Asphalt Total:	**$7,052**
No.	**Section 10: Erosion Control**							
	See Cost Summary				1	EST	$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
15	Cement Conc. Traffic Curb and Gutter	250			250	LF	$43.30	$10,825
16	Temporary Pavement Marking				2280	LF	$1.00	$2,280
17	Plastic Crosswalk Line	126	2		252	SF	$11.00	$2,772
18	Plastic Stop Line	33	2		66	SF	$20.70	$1,366
19	Plastic Traffic Arrow				2	EA	$370.00	$740
20	Raised Pavement Marker Type 1	800			2	HUND	$447.00	$894
21	Raised Pavement Marker Type 2				0.5	HUND	$310.00	$155
22	Permanent Signing				1	LS	$1,000.00	$1,000
23	Illumination System No. 1 (for under bridge)				1	LS	$20,000.00	$20,000
24	Reset Existing Signal Loops				1	LS	$6,000.00	$6,000
							Traffic Total:	**$46,032**
No.	**Section 12: Other Items**							
25	Structure Excavation Class B Incl. Haul (Piping)	140	3.5	3.5	64	CY	$18.00	$1,143
26	Cement Conc. Sidewalk	240	10	0.33	267	SY	$67.85	$18,093
27	Cement Conc. Curb Ramp (Various Types)				1	EA	$2,400.00	$2,400
28	Truncated Domes				12	SF	$46.00	$552
29	Pothole Existing Utilities				1	LS	$10,000.00	$10,000
30	Force Account Utility Relocation				1	LS	$10,000.00	$10,000
31	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
32	Roadside Cleanup				1	LS	$4,500.00	$4,500
33	Landscape Plantings				1	LS	$3,500.00	$3,500
							Other Items Total:	**$55,189**
							Construction Subtotal:	**$165,645**

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 19: I-5 SB Ramps / Lakeway Dr Rechannelizaton**
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Retaining Structures, Pavement Markings, Utilities, Landscaping,
	Signals and Illumination, Landscaping, Stormwater Management, and Erosion Contro

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$34,680
	Grading	$2,990
	Drainage	$0
	Storm Sewer	$21,600
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$12,378
	Surfacing	$8,194
	Hot Mix Asphalt	$20,716
	Traffic	$581,179
	Other Items	$138,583
	Subtotal	**$820,318**
	PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%	$164,064
	City Project Management - 10%	$82,032
	Mobilization - 10%	$82,032
	Construction Survey, SPCC, and TESC - 5%	$41,016
	Temporary Traffic Control - 35%	$287,111
	Contingency - 25%	$205,080
	Right-of-Way/Easement Acquisition	$0
	WSDOT Coordination/Approvals	$40,000
	Total Planning Level Project Estimate	**$1,722,000**

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   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 19: I-5 SB Ramps / Lakeway Dr Rechannelizaton

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Clearing and Grubbing	385	12		0.1	AC	$10,000.00	$1,061
2	Sawcutting	1024		6	6144	LF-IN	$0.75	$4,608
3	Removal of Structures and Obstructions				1	LS	$27,000.00	$27,000
4	Removing Asphalt Conc. Pavement	1024	3		117	TN	$17.25	$2,012
							Preparation Total:	**$34,680**
No.	**Section 2: Grading**							
5	Gravel Borrow Incl. Haul (Road and Utility Trenches)	150	3	2.5	85	TN	$35.00	$2,990
							Grading Total:	**$2,990**
No.	**Section 3: Drainage**							
							Drainage Total:	**$0**
No.	**Section 4: Storm Sewer**							
6	Catch Basin Type 1L				6	EA	$2,300.00	$13,800
7	Sched. A Storm Sewer Pipe 12 In. Diam.				150	LF	$52.00	$7,800
							Storm Sewer Total:	**$21,600**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
8	Structure Excavation Class A Incl. Haul	50	8	4	59	CY	$30.00	$1,778
9	Shoring or Extra Excavation Cl. A				1	LS	$1,000.00	$1,000
10	Gravity Block Wall (S.W. and N.E. Quadrants)	50		4	200	SF	$48.00	$9,600
							Structures Total:	**$12,378**
No.	**Section 8: Surfacing**							
11	Gravel Base (Road) (12" Depth)	425	6	1	194	TN	$30.00	$5,808
12	Crushed Surfacing Top Course (2" Depth)	4047.5		0.17	50	TN	$48.00	$2,385
							Surfacing Total:	**$8,194**
No.	**Section 9: Hot Mix Asphalt**							
13	HMA CL. 1/2 In. PG 58H-22	3448.5		0.33	94	TN	$201.25	$18,916
14	Longitudinal Joint Seal				1,200	LF	$1.50	$1,800
							Hot Mix Asphalt Total:	**$20,716**
No.	**Section 10: Erosion Control**							
	See Cost Summary				1	EST	$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
15	Cement Conc. Traffic Curb and Gutter	630			630	LF	$43.00	$27,090
16	Cement Conc. Pedestrian Curb				20	LF	$58.00	$1,160
17	Plastic Line	1700			1700	LF	$4.00	$6,800
18	Plastic Crosswalk Line	315	2		630	SF	$11.00	$6,930
19	Plastic Stop Line	119	2		238	SF	$21.00	$4,998
20	Plastic Traffic Arrow				8	EA	$370.00	$2,960
21	Raised Pavement Marker Type 1	260			0.4	HUND	$447.00	$179
22	Raised Pavement Marker Type 2				0.2	HUND	$310.00	$62
23	Permanent Signing				1	LS	$3,500.00	$3,500
24	Existing Traffic/Ped Signal Modifications				1	LS	$525,000.00	$525,000
25	Reset Existing Signal Loops				1	LS	$2,500.00	$2,500
							Traffic Total:	**$581,179**
No.	**Section 12: Other Items**							
26	Structure Excavation Class B Incl. Haul (Piping)	150	3.5	4.5	88	CY	$18.00	$1,575
27	Shoring or Extra Excavation Class B (Piping)	300		4.5	1,350	SF	$2.00	$2,700
28	Cement Conc. Sidewalk	2260			251	SY	$68.00	$17,076
29	Cement Conc. Driveway	20	10	0.5	22	SY	$165.00	$3,667
30	Cement Conc. Curb Ramp (Various Types)				4	EA	$2,400.00	$9,600
31	Truncated Domes	36	2		72	SF	$46.00	$3,312
32	Adjust Manhole or Catch Basin				2	EA	$600.00	$1,200
33	Pothole Existing Utilities				1	LS	$10,000.00	$10,000
34	Force Account Utility Relocation				1	LS	$20,000.00	$20,000
35	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
36	Repair Existing Public and Private Facilities				1	LS	$4,000.00	$4,000
37	Roadside Cleanup				1	LS	$10,000.00	$10,000
38	Construction Geotextile for Soil Stabilization	425	6		283	SY	$1.60	$453
39	Stormwater Management (WQ) Structure				1	EA	$45,000.00	$45,000
40	Landscape Plantings				1	LS	$5,000.00	$5,000
							Other Items Total:	**$138,583**
							Construction Subtotal:	**$820,318**

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 20: I-5 SB On-Ramp / 36th St / Fielding Ave Intersection Improvement**
	Single-Lane Roundabout
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Retaining Structures, Pavement Markings, Utilities, Landscaping,
	Illumination, Landscaping, Stormwater Management, and Erosion Control

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$39,302
	Grading	$90,119
	Drainage	$5,810
	Storm Sewer	$49,800
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$46,533
	Surfacing	$132,339
	Hot Mix Asphalt	$307,335
	Traffic	$184,735
	Other Items	$273,510
	Subtotal	**$1,129,484**
	PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%	$225,897
	City Project Management - 10%	$112,948
	Mobilization - 10%	$112,948
	Construction Survey, SPCC, and TESC - 5%	$56,474
	Temporary Traffic Control - 35%	$395,319
	Contingency - 25%	$282,371
	Right-of-Way/Easement Acquisition	$15,000
	WSDOT Coordination/Approvals	$40,000
	Total Planning Level Project Estimate	**$2,370,000**

Disclaimers:

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   b. Phased construction or out of regular sequence construction.
   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 20: I-5 SB On-Ramp / 36th St / Fielding Ave Intersection Improvement

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Clearing and Grubbing	1080	15		0.4	AC	$10,000.00	$3,719
2	Sawcutting	110		6	660	LF-IN	$0.75	$495
3	Removal of Structures and Obstructions				1	LS	$3,000.00	$3,000
4	Removing Asphalt Conc. Pavement	49000		0.5	1,860	TN	$17.25	$32,088
							Preparation Total:	**$39,302**
No.	**Section 2: Grading**							
5	Roadway Excavation Incl. Haul	57150		1	2117	CY	$23.00	$48,683
6	Gravel Borrow Incl. Haul (Road and Utilities)	15592.5			1,184	TN	$35.00	$41,436
							Grading Total:	**$90,119**
No.	**Section 3: Drainage**							
7	Ditch Excavation Incl. Haul	540	4	2	160	CY	$14.00	$2,240
8	Quarry Spalls	20	7	2	10	CY	$55.00	$570
9	Schedule A Culv. Pipe 18 In. Diam.				40	LF	$75.00	$3,000
							Drainage Total:	**$5,810**
No.	**Section 4: Storm Sewer**							
10	Catch Basin Type 1L				10	EA	$2,300.00	$23,000
11	Catch Basin Type 2 - 48 In. Diam.				1	EA	$3,400.00	$3,400
12	Sched. A Storm Sewer Pipe 12 In. Diam.				450	LF	$52.00	$23,400
							Storm Sewer Total:	**$49,800**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
13	Structure Excavation Class A Incl. Haul	150	10	5	278	CY	$30.00	$8,333
14	Shoring or Extra Excavation Cl. A	150		5	1	LS	$2,200.00	$2,200
15	Gravity Block Wall (west side of roundabout)	150		5	750	SF	$48.00	$36,000
							Structures Total:	**$46,533**
No.	**Section 8: Surfacing**							
16	Gravel Base (Road) (12")	35700		1	2,711	TN	$30.00	$81,317
17	Crushed Surfacing Top Course (3")	56000		0.25	1,063	TN	$48.00	$51,022
							Surfacing Total:	**$132,339**
No.	**Section 9: Hot Mix Asphalt**							
18	HMA CL. 1/2 In. PG 58H-22	56000	1	0.33	1,526	TN	$201.25	$307,170
19	Longitudinal Joint Seal				110	LF	$1.50	$165
							Hot Mix Asphalt Total:	**$307,335**
No.	**Section 10: Erosion Control**							
	See Cost Summary				1	EST	$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
20	Cement Conc. Traffic Curb and Gutter - Std. and RAB	2096			2100	LF	$43.00	$90,300
21	Cement Conc. Traffic Curb				100	LF	$58.00	$5,800
22	Cement Conc. Pedestrian Curb				30	LF	$32.00	$960
23	Flexible Guide Post				20	EA	$41.00	$820
24	Plastic Line	3050			3050	LF	$4.00	$12,200
25	Plastic Crosswalk Line	10	2	12	240	SF	$11.00	$2,640
26	Plastic Bicycle Lane Symbol				6	EA	$410.00	$2,460
27	Plastic Yield Line Symbol	7		3	21	EA	$200.00	$4,200
28	Raised Pavement Marker Type 1				5	HUND	$447.00	$2,235
29	Raised Pavement Marker Type 2				2	HUND	$310.00	$620
30	Permanent Signing				1	LS	$2,500.00	$2,500
31	Illumination System No. 1				1	LS	$60,000.00	$60,000
							Traffic Total:	**$184,735**
No.	**Section 12: Other Items**							
32	Structure Excavation Class B Incl. Haul (Piping)	490	3.5	4.5	286	CY	$9.00	$2,573
33	Shoring or Extra Excavation Class B (Piping)	490		4.5	2,205	SF	$0.90	$1,985
34	Cement Conc. Sidewalk (Standard and Stamped)	7590			843	SY	$68.00	$57,347
35	Cement Conc. Curb Ramp (Various Types)				4	EA	$2,400.00	$9,600
36	Truncated Domes				160	SF	$46.00	$7,360
37	Adjust Manhole or Catch Basin				3	EA	$600.00	$1,800
38	Pothole Existing Utilities				1	LS	$10,000.00	$10,000
39	Force Account Utility Relocation				1	LS	$20,000.00	$20,000
40	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
41	Repair Existing Public and Private Facilities				1	LS	$2,500.00	$2,500
42	Chain Link Fence Type 1				150	LF	$60.00	$9,000
43	Roadside Cleanup				1	LS	$10,000.00	$10,000
44	Construction Geotextile for Soil Stabilization				3,967	SY	$1.60	$6,347
45	Detention Facility (Vault)				1	LS	$65,000.00	$65,000
46	Stormwater Management (WQ) Structure				1	EA	$45,000.00	$45,000
47	Landscape Plantings				1	LS	$20,000.00	$20,000
							Other Items Total:	**$273,510**
							Construction Subtotal:	**$1,129,484**

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 21: I-5 NB Off-Ramp / Samish Way Intersection Improvement**
	Single-Lane Roundabout
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Retaining Structures, Pavement Markings, Utilities, Landscaping,
	Illumination, Landscaping, Stormwater Management, and Erosion Control

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$28,526
	Grading	$37,801
	Drainage	$15,000
	Storm Sewer	$29,600
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$29,307
	Surfacing	$14,733
	Hot Mix Asphalt	$143,385
	Traffic	$141,632
	Other Items	$214,645
	Subtotal	**$654,630**
PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%		$130,926
City Project Management - 10%		$65,463
Mobilization - 10%		$65,463
Construction Survey, SPCC, and TESC - 5%		$32,731
Temporary Traffic Control - 35%		$229,120
Contingency - 25%		$163,657
Right-of-Way/Easement Acquisition		$0
WSDOT Coordination/Approvals		$40,000
Total Planning Level Project Estimate		**$1,382,000**

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   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 21: I-5 NB Off-Ramp / Samish Way Intersection Improvement

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Clearing and Grubbing	6600			0.2	AC	$10,000.00	$1,515
2	Sawcutting	1210		6	7260	LF-IN	$0.75	$5,445
3	Removal of Structures and Obstructions				1	LS	$16,000.00	$16,000
4	Removing Asphalt Conc. Pavement	8500		0.5	323	TN	$17.25	$5,566
							Preparation Total:	**$28,526**
No.	**Section 2: Grading**							
5	Roadway Excavation Incl. Haul	16455		1	609	CY	$23.00	$14,017
6	Gravel Borrow Incl. Haul (Road and Utilities)	8950			680	TN	$35.00	$23,784
							Grading Total:	**$37,801**
No.	**Section 3: Drainage**							
7	Schedule A Culv. Pipe 18 In. Diam.	200			200	LF	$75.00	$15,000
							Drainage Total:	**$15,000**
No.	**Section 4: Storm Sewer**							
8	Catch Basin Type 1L				8	EA	$2,300.00	$18,400
9	Catch Basin Type 2 - 48 In. Diam.				1	EA	$3,400.00	$3,400
10	Sched. A Storm Sewer Pipe 12 In. Diam.				150	LF	$52.00	$7,800
							Storm Sewer Total:	**$29,600**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
11	Structure Excavation Class A Incl. Haul	120	8	4	142	CY	$30.00	$4,267
12	Shoring or Extra Excavation Cl. A	120		4	1	LS	$2,000.00	$2,000
13	Gravity Block Wall (east side of roundabout)	120		4	480	SF	$48.00	$23,040
							Structures Total:	**$29,307**
No.	**Section 8: Surfacing**							
14	Crushed Surfacing Top Course	17000		0.25	307	TN	$48.00	$14,733
							Surfacing Total:	**$14,733**
No.	**Section 9: Hot Mix Asphalt**							
15	HMA CL. 1/2 In. PG 58H-22	17000		0.5	702	TN	$201.25	$141,285
16	Longitudinal Joint Seal	1400			1,400	LF	$1.50	$2,100
							Hot Mix Asphalt Total:	**$143,385**
No.	**Section 10: Erosion Control**							
	See Cost Summary				1	EST	$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
17	Cement Conc. Traffic Curb and Gutter - Std. and RAB	1405			1405	LF	$43.00	$60,415
18	Cement Conc. Traffic Curb	60			60	LF	$58.00	$3,480
19	Flexible Guide Post				20	EA	$41.00	$820
20	Plastic Line	1510			1510	LF	$4.00	$6,040
21	Plastic Crosswalk Line	81	2		162	SF	$11.00	$1,782
22	Plastic Bicycle Lane Symbol				4	EA	$410.00	$1,640
23	Plastic Yield Line Symbol				8	EA	$200.00	$1,600
24	Raised Pavement Marker Type 1				5	HUND	$447.00	$2,235
25	Raised Pavement Marker Type 2				2	HUND	$310.00	$620
26	Permanent Signing				1	LS	$3,000.00	$3,000
27	Illumination System No. 1				1	LS	$60,000.00	$60,000
							Traffic Total:	**$141,632**
No.	**Section 12: Other Items**							
28	Structure Excavation Class B Incl. Haul (Piping)	350	4	4.5	233	CY	$18.00	$4,200
29	Shoring or Extra Excavation Class B (Piping)	700		4.5	3,150	SF	$2.00	$6,300
30	Cement Conc. Driveway	30	5		17	SY	$165.00	$2,750
31	Cement Conc. Curb Ramp (Various Types)				2	EA	$2,400.00	$4,800
32	Truncated Domes				24	SF	$46.00	$1,104
33	Adjust Utility Feature				2	EA	$400.00	$800
34	Adjust Manhole or Catch Basin				1	EA	$600.00	$600
35	Pothole Existing Utilities				1	LS	$10,000.00	$10,000
36	Force Account Utility Relocation				1	LS	$20,000.00	$20,000
37	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
38	Repair Existing Public and Private Facilities				1	LS	$2,500.00	$2,500
39	Roadside Cleanup				1	LS	$10,000.00	$10,000
40	Construction Geotextile for Soil Stabilization	8950			994	SY	$1.60	$1,591
41	Detention Facility (Vault)				1	LS	$80,000.00	$80,000
42	LID Feature (Biofiltration Swale/Raingarden)				1	LS	$15,000.00	$15,000
43	Stormwater Management (WQ) Structure				1	EA	$30,000.00	$30,000
44	Landscape Plantings				1	LS	$20,000.00	$20,000
							Other Items Total:	**$214,645**
							Construction Subtotal:	**$654,630**

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

Date:	September 3, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 27a: I-5 Ped/Bike Overpass Crossing**
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Bridge and Retaining Structures, Pavement Markings, Utilities,
	Signage, Illumination, Landscaping, and Stormwater Management

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$75,400
	Grading	$12,311
	Drainage	$3,280
	Storm Sewer	$55,800
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$9,117,111
	Surfacing	$22,400
	Hot Mix Asphalt	$121,477
	Erosion Control	$0
	Traffic	$154,290
	Other Items	$682,987
	Subtotal Work Done Contractor	**$10,245,056**
	PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%	$2,049,011
	City Project Management - 10%	$1,024,506
	Mobilization - 15%	$1,536,758
	Construction Survey, SPCC, and TESC - 5%	$512,253
	Temporary Traffic Control - 10%	$1,024,506
	Contingency - 25%	$2,561,264
	Right-of-Way/Easement Acquisition/Administration	$120,000
	WSDOT Coordination/Approvals	$50,000
	Total Planning Level Project Estimate	**$19,123,353**

Disclaimers:

1. This estimate is prepared as a guide only and is subject to. It has been prepared to a standard of accuracy which,
2. to the best of our knowledge and judgment, is sufficient to satisfy our understanding of the purpose of this estimate.
3. Lochner makes no warranty, either expressed or implied, as to the accuracy of this estimate.
4. This estimate is based on data found within the Washington State Department of Transportation Unit Bid Analysis.
   Costs presented herein represent an opinion based on historical information and include retail sales tax.
   This estimate does not consider the following:
   a. Cost associated with biological surveys, environmental (wetland) mitigations, modeled traffic analysis, land-use planning, geotechnical assessments, surveying, cultural resources, and environmental site assessments.
   b. Phased construction or out of regular sequence construction.
   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Acquisition of easements and rights of entry.
   f. Assessments from traffic, parks, or schools.
5. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.
6. Based on a deck-only area of approximately 7800 sq. ft. and a unit cost of $550/SF average and $700/SF high per Appendix 12.3-A1 of the WSDOT Bridge Manual), $4,300,000 to $5,500,000 can be estimated.

CITY OF MUKILTEO - SIDEWALK SITE ASSESSMENT
(Planning-Level Cost Estimate)

Site 27a: I-5 Ped/Bike Overpass Crossing

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Mobilization *				0	LS	$0.00	$0.00
2	Clearing and Grubbing				1.5	AC	$20,000.00	$30,000.00
3	Sawcutting				1200	LF	$2.50	$3,000.00
4	Removal of Structures and Obstructions				1	LS	$40,000.00	$40,000.00
5	Removing Cement Conc. Sidewalk				0	SY	$9.00	$0.00
6	Removing Cement Conc. Curb and Gutter				0	LF	$4.50	$0.00
7	Removing Asphalt Conc. Pavement				600	SY	$4.00	$2,400.00
8	Removing Raised Pavement Marker				0	SY	$4.00	$0.00
9	Removing Painted Pavement Markings				0	SY	$4.00	$0.00
10	Removing Plastic Pavement Markings				0	SY	$4.00	$0.00
11	Removing Traffic Island				0	SY	$16.00	$0.00
							Preparation Total:	**$75,400.00**
No.	**Section 2: Grading**							
12	Roadway Excavation Incl. Haul	600	24	1.5	800	CY	$11.50	$9,200.00
13	Gravel Borrow Incl. Haul (Utility Trenches)	500	3	3.5	194	TN	$16.00	$3,111.11
14	Embankment Compaction				0	CY	$2.80	$0.00
							Grading Total:	**$12,311.11**
No.	**Section 3: Drainage**							
15	Ditch Excavation Incl. Haul				0	CY	$14.00	$0.00
16	Combination Inlet				8	EA	$410.00	$3,280.00
17	Quarry Spalls				0	CY	$55.00	$0.00
18	Schedule A Culv. Pipe 12 In. Diam.				0	LF	$36.00	$0.00
19	Schedule A Culv. Pipe 18 In. Diam.				0	LF	$43.00	$0.00
							Drainage Total:	**$3,280.00**
No.	**Section 4: Storm Sewer**							
20	Catch Basin Type 1L				10	EA	$1,100.00	$11,000.00
21	Catch Basin Type 2 - 48 In. Diam.				2	EA	$3,400.00	$6,800.00
22	Catch Basin Type 2 - 60 In. Diam.				0	EA	$4,200.00	$0.00
23	Catch Basin Type 2 - 72 In. Diam.				0	EA	$6,300.00	$0.00
24	Testing Storm Sewer Pipe				0	LF	$2.20	$0.00
25	CL. IV Reinf. Conc. Storm Sewer Pipe 12 In. Diam.				0	LF	$50.00	$0.00
26	CL. IV Reinf. Conc. Storm Sewer Pipe 18 In. Diam.				0	LF	$42.00	$0.00
27	CL. IV Reinf. Conc. Storm Sewer Pipe 24 In. Diam.				0	LF	$49.00	$0.00
28	CL. IV Reinf. Conc. Storm Sewer Pipe 30 In. Diam.				0	LF	$70.00	$0.00
29	CL. IV Reinf. Conc. Storm Sewer Pipe 36 In. Diam.				0	LF	$80.00	$0.00
30	Sched. A Storm Sewer Pipe 12 In. Diam.				600	LF	$45.00	$27,000.00
31	Sched. A Storm Sewer Pipe 18 In. Diam.				200	LF	$55.00	$11,000.00
32	Sched. A Storm Sewer Pipe 24 In. Diam.				0	LF	$54.00	$0.00
							Storm Sewer Total:	**$55,800.00**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0.00**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0.00**
No.	**Section 7: Structure**							
33	Structure Excavation Class A Incl. Haul	4	4	300	178	CY	$40.00	$7,111.11
34	Shoring or Extra Excavation Cl. A				1	LS	$40,000.00	$40,000.00
35	Superstructure				7,800	SF	$700.00	$5,460,000.00
36	Substructure/Foundations (three piers/columns)				1	LS	$3,000,000.00	$3,000,000.00
37	Concrete Stairs and Ramps				1	LS	$550,000.00	$550,000.00
38	Retaining Walls (S.W., S.E., N.E., and N.W. Quadrants)	200		10	2,000	SF	$30.00	$60,000.00
							Structures Total:	**$9,117,111.11**
No.	**Section 8: Surfacing**							
39	Gravel Base (Road) (12")	600	24	1	533	TN	$30.00	$16,000.00
40	Crushed Surfacing Top Course (3")	600	24	0.25	133	TN	$48.00	$6,400.00
							Surfacing Total:	**$22,400.00**
No.	**Section 9: Hot Mix Asphalt**							
41	HMA CL. 1/2 In. PG 58H-22	600	24	0.5	595	TN	$201.25	$119,676.67
42	Planing Bituminous Pavement				0	SY	$3.50	$0.00
43	Compaction Price Adjustment				0	CALC	$3,500.00	$0.00
44	Longitudinal Joint Seal				1,200	LF	$1.50	$1,800.00
45	Asphalt Cost Price Adjustment				0	CALC	$550.00	$0.00
							Hot Mix Asphalt Total:	**$121,476.67**
No.	**Section 10: Erosion Control**							
							Erosion Control Total:	**$0.00**
No.	**Section 11: Traffic**							
46	Cement Conc. Traffic Curb and Gutter				1200	LF	$16.00	$19,200.00
47	Cement Conc. Traffic Curb				0	LF	$18.00	$0.00
48	Cement Conc. Pedestrian Curb				0	LF	$19.00	$0.00
49	Flexible Guide Post				0	EA	$41.00	$0.00
50	Paint Line				600	LF	$0.48	$288.00
51	Temporary Pavement Marking				0	LF	$0.48	$0.00
52	Plastic Crosswalk Line				0	SF	$5.00	$0.00
53	Plastic Stop Line				0	SF	$7.00	$0.00

54	Plastic Bicycle Lane Symbol				4	EA	$68.00	$272.00
55	Plastic Traffic Arrow				0	EA	$68.00	$0.00
56	Plastic Traffic Letter				0	EA	$68.00	$0.00
57	Plastic Yield Line Symbol				0	EA	$32.00	$0.00
58	Raised Pavement Marker Type 1				1	HUND	$290.00	$290.00
59	Raised Pavement Marker Type 2				4	HUND	$310.00	$1,240.00
60	Permanent Signing				1	LS	$3,000.00	$3,000.00
61	Illumination System No. 1				1	LS	$100,000.00	$100,000.00
62	Conduit Pipe 2 In. Diam.				500	LF	$25.00	$12,500.00
63	Conduit Pipe 4 In. Diam.				500	LF	$35.00	$17,500.00
64	Project Temporary Traffic Control *				0	LS	$40.00	$0.00
							Traffic Total:	**$154,290.00**
No.	**Section 12: Other Items**							
65	Structure Excavation Class B Incl. Haul (Piping)	600	3	4	266.7	CY	$9.00	$2,400.00
66	Shoring or Extra Excavation Class B (Piping)	600		4	2,400	SF	$0.90	$2,160.00
67	Licensed Surveying and Recording				1	LS	$27,000.00	$27,000.00
68	Contractor-Provided Construction Surveying *				0	LS	$22,000.00	$0.00
69	Monument Case and Cover				0	EA	$420.00	$0.00
70	Porous Concrete Sidewalk	600	5		333	SY	$65.00	$21,666.67
71	Cement Conc. Sidewalk				0	SY	$33.00	$0.00
72	Cement Conc. Driveway	30	5		17	SY	$60.00	$1,000.00
73	Cement Conc. Curb Ramp (Various Types)				4	EA	$2,100.00	$8,400.00
74	Truncated Domes				0	SF	$96.00	$0.00
75	Locking Solid Metal Cover and Frame for Catch Basin				0	EA	$580.00	$0.00
76	Adjust Utility Feature				0	EA	$230.00	$0.00
77	Adjust Manhole or Catch Basin				0	EA	$230.00	$0.00
78	Pothole Existing Utilities				0	LS	$5,000.00	$0.00
79	Force Account Utility Relocation				1	LS	$120,000.00	$120,000.00
80	Force Account Unanticipated Site Work				1	LS	$60,000.00	$60,000.00
81	Repair Existing Public and Private Facilities				1	LS	$20,000.00	$20,000.00
82	Chain Link Fence Type 1				400	LF	$14.00	$5,600.00
83	End, Gate, Corner, and Pull Post				10	EA	$270.00	$2,700.00
84	Roadside Cleanup (City and WSDOT Right-of-Way)				1	LS	$20,000.00	$20,000.00
85	SPCC Plan *				0	LS	$1,500.00	$0.00
86	Construction Geotextile for Soil Stabilization	600	24		1,600	SY	$1.60	$2,560.00
87	Detention Facility				1	LS	$10,000.00	$10,000.00
88	LID Feature (Biofiltration Swale/Raingarden)				1	LS	$25,000.00	$25,000.00
89	Stormwater Management (WQ) Structure				1	EA	$105,000.00	$105,000.00
90	Redirectional Land Form of Cable Barrier (Median)				1	LS	$65,000.00	$65,000.00
91	Dewater Trench (during utility installations)				1	LS	$80,000.00	$80,000.00
92	Wetland Mitigation				0.5	AC	$49,000.00	$24,500.00
93	Pedestrian Handrail				1	LS	$80,000.00	$80,000.00
							Other Items Total:	**$682,986.67**
							Construction Subtotal:	**$10,245,055.56**

* found on summary page

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 34a: Lincoln St / Potter Street Signal**
Type of Work:	Site Preparation, Signals and Illumination, and Erosion Control

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$1,500
	Grading	$0
	Drainage	$0
	Storm Sewer	$0
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$0
	Surfacing	$0
	Hot Mix Asphalt	$0
	Traffic	$416,500
	Other Items	$26,500
	Subtotal	**$444,500**
	PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%	$88,900
	City Project Management - 10%	$44,450
	Mobilization - 10%	$44,450
	Construction Survey, SPCC, and TESC - 5%	$22,225
	Temporary Traffic Control - 25%	$111,125
	Contingency - 25%	$111,125
	Right-of-Way/Easement Acquisition	$0
	Total Planning Level Project Estimate	**$867,000**

Disclaimers:

1. This estimate is prepared as a guide only and is subject to. It has been prepared to a standard of accuracy which, to the best of our knowledge and judgment, is sufficient to satisfy our understanding of the purpose of this estimate.
2. Lochner makes no warranty, either expressed or implied, as to the accuracy of this estimate.
3. This estimate is based on data found within the Washington State Department of Transportation Unit Bid Analysis.
4. Costs presented herein represent an opinion based on historical information and include retail sales tax.
5. This estimate does not consider the following:
   a. Cost associated with biological surveys, environmental (wetland) mitigations, modeled traffic analysis, land-use planning, geotechnical assessments, surveying, cultural resources, and environmental site assessments.
   b. Phased construction or out of regular sequence construction.
   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 34a: Lincoln St / Potter Street Signal

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Removal of Structures and Obstructions				1	LS	$1,500.00	$1,500
							Preparation Total:	**$1,500**
No.	**Section 2: Grading**							
							Grading Total:	**$0**
No.	**Section 3: Drainage**							
							Drainage Total:	**$0**
No.	**Section 4: Storm Sewer**							
							Storm Sewer Total:	**$0**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
							Structures Total:	**$0**
No.	**Section 8: Surfacing**							
2	Gravel Base (Road)			1	0	TN	$35.00	$0
3	Crushed Surfacing Top Course			0.25	0	TN	$45.00	$0
							Surfacing Total:	**$0**
No.	**Section 9: Hot Mix Asphalt**							
							Hot Mix Asphalt Total:	**$0**
No.	**Section 10: Erosion Control**							
	See Cost Summary						$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
4	Permanent Signing				1	LS	$1,500.00	$1,500
5	Illumination System No. 1				1	LS	$40,000.00	$40,000
6	Traffic/Ped Signal System No. 1				1	LS	$375,000.00	$375,000
							Traffic Total:	**$416,500**
No.	**Section 12: Other Items**							
7	Pothole Existing Utilities				1	LS	$5,000.00	$5,000
8	Force Account Utility Relocation				1	LS	$10,000.00	$10,000
9	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
10	Repair Existing Public and Private Facilities				1	LS	$5,000.00	$5,000
11	Roadside Cleanup				1	LS	$1,500.00	$1,500
							Other Items Total:	**$26,500**
							Construction Subtotal:	**$444,500**

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

LL Project 34
Roundabout

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 34b: Lincoln St / Potter Street Roundabout**
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Retaining Structures, Pavement Markings, Utilities, Landscaping,
	Illumination, Landscaping, Stormwater Management, and Erosion Control

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$62,693
	Grading	$22,027
	Drainage	$2,000
	Storm Sewer	$75,500
	Sanitary Sewer	$0
	Water Lines	$0
	Structure	$16,307
	Surfacing	$17,853
	Hot Mix Asphalt	$100,992
	Traffic	$148,856
	Other Items	$321,344
	Subtotal	**$767,571**
PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%		$153,514
City Project Management - 10%		$76,757
Mobilization - 10%		$76,757
Construction Survey, SPCC, and TESC - 8%		$61,406
Temporary Traffic Control - 35%		$268,650
Contingency - 25%		$191,893
Right-of-Way/Easement Acquisition		$0
Total Planning Level Project Estimate		**$1,597,000**

Disclaimers:

1. This estimate is prepared as a guide only and is subject to. It has been prepared to a standard of accuracy which, to the best of our knowledge and judgment, is sufficient to satisfy our understanding of the purpose of this estimate.
2. Lochner makes no warranty, either expressed or implied, as to the accuracy of this estimate.
3. This estimate is based on data found within the Washington State Department of Transportation Unit Bid Analysis.
4. Costs presented herein represent an opinion based on historical information and include retail sales tax.
5. This estimate does not consider the following:
   a. Cost associated with biological surveys, environmental (wetland) mitigations, modeled traffic analysis, land-use planning, geotechnical assessments, surveying, cultural resources, and environmental site assessments.
   b. Phased construction or out of regular sequence construction.
   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 34b: Lincoln St / Potter Street Roundabout

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Clearing and Grubbing	4230			0.1	AC	$10,000.00	$971
2	Sawcutting	590		6	3,540	LF-IN	$0.75	$2,655
3	Removal of Structures and Obstructions				1	LS	$48,700.00	$48,700
4	Removing Asphalt Conc. Pavement	15,830		0.5	601	TN	$17.25	$10,366
							Preparation Total:	**$62,693**
No.	**Section 2: Grading**							
5	Roadway Excavation Incl. Haul	6750		1	250	CY	$23.00	$5,750
6	Gravel Borrow Incl. Haul (Road and Utilities)	700	3.5	2.5	465	TN	$35.00	$16,277
							Grading Total:	**$22,027**
No.	**Section 3: Drainage**							
7	Combination Inlet				2	EA	$1,000.00	$2,000
							Drainage Total:	**$2,000**
No.	**Section 4: Storm Sewer**							
8	Catch Basin Type 1L				17	EA	$2,300.00	$39,100
9	Sched. A Storm Sewer Pipe 12 In. Diam.				700	LF	$52.00	$36,400
							Storm Sewer Total:	**$75,500**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
10	Structure Excavation Class A Incl. Haul	70	4	6	62	CY	$30.00	$1,867
11	Shoring or Extra Excavation Cl. A				1	LS	$1,000.00	$1,000
12	Gravity Block Wall (east side of roundabout)	70	4		280	SF	$48.00	$13,440
							Structures Total:	**$16,307**
No.	**Section 8: Surfacing**							
13	Crushed Surfacing Top Course	20600		0.25	372	TN	$48.00	$17,853
							Surfacing Total:	**$17,853**
No.	**Section 9: Hot Mix Asphalt**							
14	HMA CL. 1/2 In. PG 58H-22	18000		0.33	491	TN	$201.25	$98,733
15	Planing Bituminous Pavement	165	20		367	SY	$3.50	$1,283
16	Longitudinal Joint Seal				650	LF	$1.50	$975
							Hot Mix Asphalt Total:	**$100,992**
No.	**Section 10: Erosion Control**							
	See Cost Summary						$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
17	Cement Conc. Traffic Curb and Gutter - Std. and RAB	1740			1740	LF	$43.00	$74,820
18	Cement Conc. Traffic Curb	80			80	LF	$58.00	$4,640
19	Cement Conc. Pedestrian Curb	120			120	LF	$32.00	$3,840
20	Flexible Guide Post				20	EA	$41.00	$820
21	Plastic Line	1930			1930	LF	$4.00	$7,720
22	Plastic Crosswalk Line	27	2	24	1,296	SF	$11.00	$14,256
23	Plastic Bicycle Lane Symbol				6	EA	$410.00	$2,460
24	Plastic Traffic Arrow				2	EA	$300.00	$600
25	Plastic Yield Line Symbol				16	EA	$200.00	$3,200
26	Permanent Signing				1	LS	$1,500.00	$1,500
27	Illumination System No. 1				1	LS	$35,000.00	$35,000
							Traffic Total:	**$148,856**
No.	**Section 12: Other Items**							
28	Structure Excavation Class B Incl. Haul (Piping)	700	3.5	4.5	408	CY	$18.00	$7,350
29	Shoring or Extra Excavation Class B (Piping)	1400		4.5	6,300	SF	$2.00	$12,600
30	Cement Conc. Sidewalk (Standard and Stamped)	10100		0.33	1,122	SY	$68.00	$76,311
31	Cement Conc. Driveway	50	10	0.5	56	SY	$165.00	$9,167
32	Cement Conc. Curb Ramp (Various Types)				8	EA	$2,400.00	$19,200
33	Truncated Domes	128	2		256	SF	$46.00	$11,776
34	Adjust Utility Feature				5	EA	$400.00	$2,000
35	Adjust Manhole or Catch Basin				2	EA	$600.00	$1,200
36	Pothole Existing Utilities				1	LS	$5,000.00	$5,000
37	Force Account Utility Relocation				1	LS	$20,000.00	$20,000
38	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
39	Repair Existing Public and Private Facilities				1	LS	$2,500.00	$2,500
40	Roadside Cleanup				1	LS	$10,000.00	$10,000
41	Construction Geotextile for Soil Stabilization				150	SY	$1.60	$240
42	Detention Facility				1	LS	$65,000.00	$65,000
43	Stormwater Management (WQ) Structure				2	EA	$27,000.00	$54,000
44	Landscape Plantings				1	LS	$20,000.00	$20,000
							Other Items Total:	**$321,344**
							Construction Subtotal:	**$767,571**

Lincoln-Lakeway Multimodal Transportation Study
Engineer's Opinion of Probable Cost

LL Project 36

Date:	August 25, 2021
Project:	Lincoln-Lakeway Multimodal Transportation Study
Agency:	City of Bellingham
Location:	**Site 36a: I-5 NB Ramps / King St / Potter St / Intersection Improvement**
	Single-Lane Roundabout
Type of Work:	Site Preparation, Grading, Drainage, Surfacing, Hot Mix Asphalt and Concrete
	Pavements, Pavement Markings, Utilities, Landscaping, Illumination,
	Landscaping, Stormwater Management, and Erosion Control

	Section	Estimated Cost
Total Estimated Costs Work Done Contractor (WDC)	Preparation	$73,011.28
	Grading	$31,368.63
	Drainage	$3,100.00
	Storm Sewer	$33,700.00
	Sanitary Sewer	$0.00
	Water Lines	$0.00
	Structure	$0.00
	Surfacing	$38,802.78
	Hot Mix Asphalt	$122,715.08
	Traffic	$198,185.00
	Other Items	$484,006.33
	Subtotal	**$984,889.10**
PE (Engr. for Design, Utility, PS&E, Ad & Award) - 20%		$196,978
City Project Management - 10%		$98,489
Mobilization - 10%		$98,489
Construction Survey, SPCC, and TESC - 5%		$49,244
Temporary Traffic Control - 35%		$344,711
Contingency - 25%		$246,222
Right-of-Way/Easement Acquisition and Administration		$50,000
Environmental Permitting/Mitigation		$50,000
WSDOT Coordination/Approvals		$40,000
Total Planning Level Project Estimate		**$2,119,000**

Disclaimers:

1. This estimate is prepared as a guide only and is subject to. It has been prepared to a standard of accuracy which, to the best of our knowledge and judgment, is sufficient to satisfy our understanding of the purpose of this estimate.
2. Lochner makes no warranty, either expressed or implied, as to the accuracy of this estimate.
3. This estimate is based on data found within the Washington State Department of Transportation Unit Bid Analysis.
4. Costs presented herein represent an opinion based on historical information and include retail sales tax.
5. This estimate does not consider the following:
   a. Cost associated with biological surveys, environmental (wetland) mitigations, modeled traffic analysis, land-use planning, geotechnical assessments, surveying, cultural resources, and environmental site assessments.
   b. Phased construction or out of regular sequence construction.
   c. Costs associated with groundwater or inclement weather conditions.
   d. Financial charges.
   e. Assessments from traffic, parks, or schools.
6. Cost estimate based on locations defined in the Transpo Group's "Project List for Screening Level 2" spreadsheet.

Lincoln-Lakeway Multimodal Transportation Study
(Planning-Level Cost Estimate)

Site 36a: I-5 NB Ramps / King St / Potter St / Intersection Improvement

	Description	Length	Width	Depth/Height	Quantity	Unit	Unit Price	Bid Amount
No.	**Section 1: Preparation**							
1	Clearing and Grubbing	13200			0.3	AC	$10,000.00	$3,030
2	Sawcutting	220		6	1320	LF-IN	$0.75	$990
3	Removal of Structures and Obstructions				1	LS	$50,000.00	$50,000
4	Removing Asphalt Conc. Pavement	29000		0.5	1,101	TN	$17.25	$18,991
							Preparation Total:	**$73,011**
No.	**Section 2: Grading**							
5	Roadway Excavation Incl. Haul	30000		1	1111	CY	$23.00	$25,556
6	Gravel Borrow Incl. Haul (Road and Utilities)	250	3.5	2.5	166	TN	$35.00	$5,813
							Grading Total:	**$31,369**
No.	**Section 3: Drainage**							
7	Combination Inlet				2	EA	$1,000.00	$2,000
8	Quarry Spalls				20	CY	$55.00	$1,100
							Drainage Total:	**$3,100**
No.	**Section 4: Storm Sewer**							
9	Catch Basin Type 1L				9	EA	$2,300.00	$20,700
10	Sched. A Storm Sewer Pipe 12 In. Diam.				250	LF	$52.00	$13,000
							Storm Sewer Total:	**$33,700**
No.	**Section 5: Sanitary Sewer**							
							Sanitary Sewer Total:	**$0**
No.	**Section 6: Water Lines**							
							Water Lines Total:	**$0**
No.	**Section 7: Structure**							
							Structures Total:	**$0**
No.	**Section 8: Surfacing**							
11	Gravel Base (Road)	7000		1	531	TN	$30.00	$15,944
12	Crushed Surfacing Top Course	26375		0.25	476	TN	$48.00	$22,858
							Surfacing Total:	**$38,803**
No.	**Section 9: Hot Mix Asphalt**							
13	HMA CL. 1/2 In. PG 58H-22	22000		0.33	600	TN	$201.25	$120,674
14	Planing Bituminous Pavement	220	20		489	SY	$3.50	$1,711
15	Longitudinal Joint Seal				220	LF	$1.50	$330
							Hot Mix Asphalt Total:	**$122,715**
No.	**Section 10: Erosion Control**							
	See Cost Summary						$0.00	$0
							Erosion Control Total:	**$0**
No.	**Section 11: Traffic**							
16	Cement Conc. Traffic Curb and Gutter - Std. and RAB	1750			1750	LF	$43.00	$75,250
17	Cement Conc. Traffic Curb				40	LF	$58.00	$2,320
18	Cement Conc. Pedestrian Curb				30	LF	$32.00	$960
19	Flexible Guide Post				10	EA	$41.00	$410
20	Plastic Line	2340			2340	LF	$4.00	$9,360
21	Plastic Crosswalk Line	108	2		216	SF	$11.00	$2,376
22	Plastic Yield Line Symbol				20	EA	$200.00	$4,000
23	Raised Pavement Marker Type 1				1	HUND	$447.00	$447
24	Raised Pavement Marker Type 2				0.2	HUND	$310.00	$62
25	Permanent Signing				1	LS	$3,000.00	$3,000
26	Illumination System No. 1				1	LS	$100,000.00	$100,000
							Traffic Total:	**$198,185**
No.	**Section 12: Other Items**							
27	Structure Excavation Class B Incl. Haul (Piping)	250	3.5	2.5	81	CY	$18.00	$1,458
28	Shoring or Extra Excavation Class B (Piping)	300		4	1,200	SF	$2.00	$2,400
29	Cement Conc. Sidewalk (Standard and Stamped)	9970			1,108	SY	$68.00	$75,329
30	Cement Conc. Driveway	70	8		62	SY	$165.00	$10,267
31	Cement Conc. Curb Ramp (Various Types)				4	EA	$2,400.00	$9,600
32	Truncated Domes	6	2	4	48	SF	$46.00	$2,208
33	Adjust Utility Feature				4	EA	$400.00	$1,600
34	Adjust Manhole or Catch Basin				4	EA	$600.00	$2,400
35	Pothole Existing Utilities				1	LS	$10,000.00	$10,000
36	Force Account Utility Relocation				1	LS	$100,000.00	$100,000
37	Force Account Unanticipated Site Work				1	LS	$5,000.00	$5,000
38	Repair Existing Public and Private Facilities				1	LS	$2,500.00	$2,500
39	Roadside Cleanup				1	LS	$10,000.00	$10,000
40	Construction Geotextile for Soil Stabilization				778	SY	$1.60	$1,244
41	Detention Facility (Vault)				1	LS	$130,000.00	$130,000
42	Stormwater Management (WQ) Structure				2	EA	$50,000.00	$100,000
43	Landscape Plantings				1	LS	$20,000.00	$20,000
							Other Items Total:	**$484,006**
							Construction Subtotal:	**$984,889**