SR 3 Freight Corridor Transportation Discipline Report

Prepared for
Washington State Department of Transportation

WSDOT

January 2024

Parametrix

SR 3 Freight Corridor
Transportation Discipline Report

Prepared for

Washington State Department of Transportation
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Certification

The technical material and data contained in this document were prepared under the supervision and direction of the undersigned, whose seal, as a professional engineer licensed to practice as such, is affixed below.

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Contents

Contents (Continued)

Contents (Continued)

FIGURES

Contents (Continued)

TABLES

APPENDICES

Acronyms and Abbreviations

ADT	average daily traffic
BAWSI	Belfair Area Widening and Safety Improvements
BBTAR	Belfair Bypass Traffic Analysis Report
BBTDR	Belfair Bypass Transportation Discipline Report
CAC	collision analysis corridor
CAL	collision analysis location
EA	Environmental Assessment
FGTS	Freight Goods Transportation System
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
HCM	Highway Capacity Manual
HCS	Highway Capacity Software
HSS	Highway of Statewide Significance
IAL	intersection analysis locations
ICE	Intersection Control Evaluation
LOS	level of service
MP	milepost
MTA	Mason Transit Authority
mph	miles per hour
NHFN	National Highway Freight Network
NHS	National Highway System
OD	origin destination
PDO	property damage only
PSAP	Puget Sound and Pacific Railroad
PSIC	Puget Sound Industrial Center
PSRC	Puget Sound Regional Council
SR	state route
UGA	urban growth area
v/c	volume to capacity
WSDOT	Washington State Department of Transportation

Executive Summary

What is the purpose of this report?

This transportation discipline report addresses the purpose and need of the State Route (SR) 3 Freight Corridor; assesses the potential effects of the project; and identifies possible mitigation measures, if any. This report is intended to be part of the NEPA Environmental Assessment documentation for the project.

What is the Project Description?

The SR 3 Freight Corridor Project would construct a two-lane limited access highway on a new alignment running approximately north-south to the east of existing SR 3 in Mason County and a small portion in Kitsap County. The proposed Freight Corridor would carry through traffic between Shelton and Bremerton and would serve as the main line for SR 3. The existing SR 3 alignment would become a “Business Loop” serving downtown Belfair, SR 106, and SR 300 (Old Belfair Highway). The proposed design speed of highway would be 50 miles per hour and the posted speed would be 50 miles per hour.

Figure ES-1 displays the location and alignment of the proposed SR Freight Corridor. The proposed corridor would be 6 miles long, branching from the existing SR 3 corridor at milepost (MP) 22.81 and reconnecting at MP 29.49. A roundabout would be constructed at the north end of the alignment to connect the existing SR 3 corridor to the Freight Corridor at Lake Flora Road (see Figure ES-2). Lake Flora Road would be realigned to accommodate the roundabout. Two roundabouts are proposed to connect the south end of the new corridor to the existing SR 3 corridor at SR 302 (see Figure ES-3). At this south connection, the western roundabout would provide access to the existing SR 3 corridor. The eastern roundabout would provide access to SR 302 and the SR 3 Freight Corridor. Between the two roundabouts, right-in-right-out access is proposed to provide access to North Mason High School and Belwood Lane. The dual roundabouts would function as a system to allow traffic to circulate and exit to the desired route. The roadway configuration would consist of two twelve-foot lanes and eight-foot shoulders. The approximate width of the proposed right-of-way is 120 feet.

What is the purpose and need of the project?

Project Purpose: The purpose of developing a new corridor around the Belfair Urban area is to provide a reliable high speed regional route between Kitsap and Mason Counties. The SR 3 Freight Corridor would also reduce congestion in Belfair and provide an alternate route for emergency vehicles. Implementation of this project would provide safe and reliable access to regional jobs, goods, and services, improve efficiencies for all public service providers, and would improve congestion related safety conditions on SR 3 in Belfair. The proposed SR 3 Freight Corridor Project would provide a solution to the immediate and long-range regional transportation mobility and safety of the SR 3 corridor in northeast Mason and southwest Kitsap counties.

The completed project would provide a two-lane highway on a new alignment with the proposed posted speed of 50 miles per hour that would more reliably move regional traffic between Shelton and Bremerton. The freight corridor would ensure efficient movement of regional freight, commute trips between Kitsap and Mason counties, accommodate seasonal influxes of tourist traffic, and serve general traffic needs through to the design year (2050). It would also serve as an alternate route during occasional highway closures on existing SR 3 in Belfair.

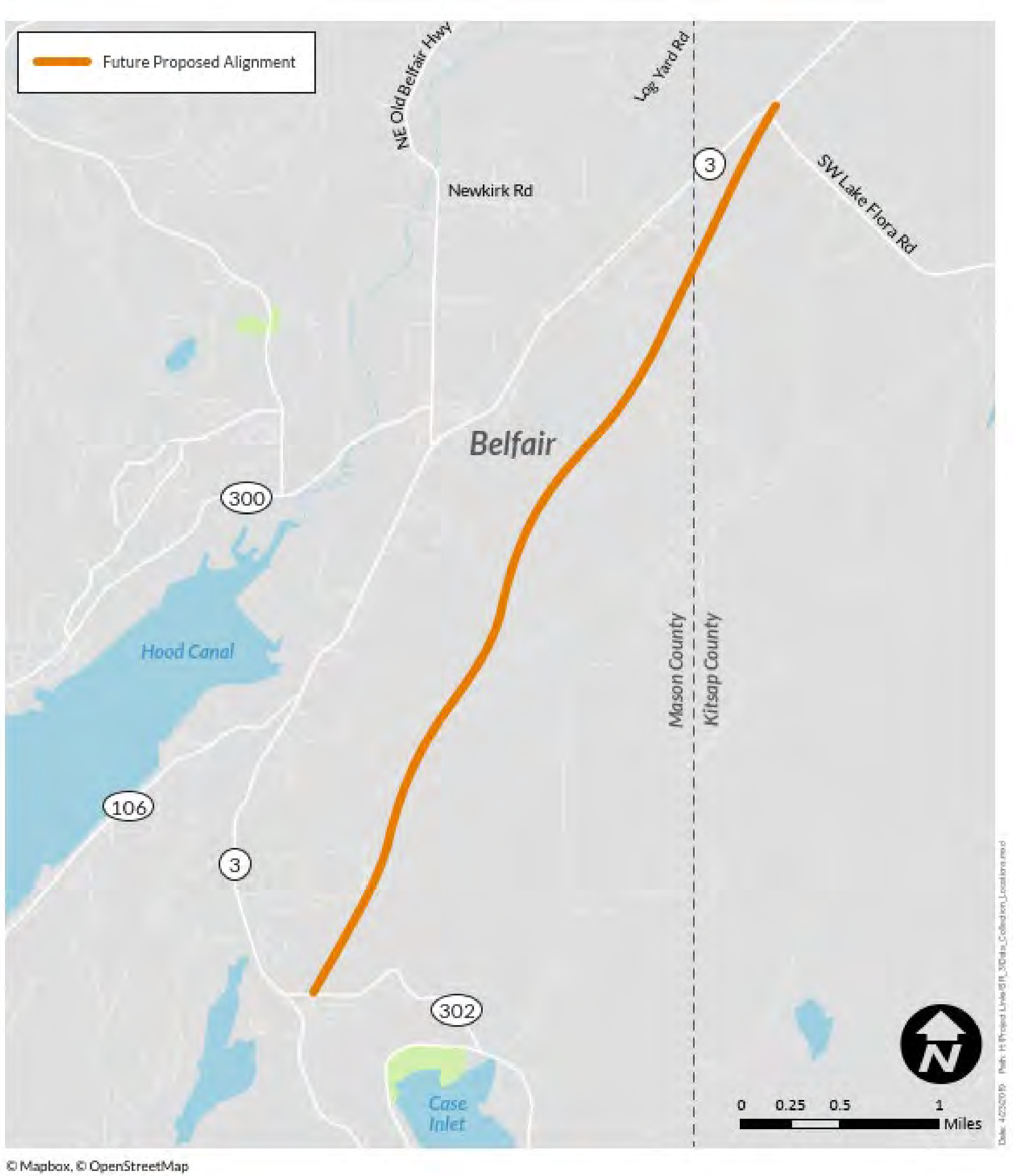

Figure ES-1. SR 3 Freight Corridor – Freight Corridor Alignment

Figure ES-2. SR 3 Freight Corridor – North End Connection at Lake Flora Road

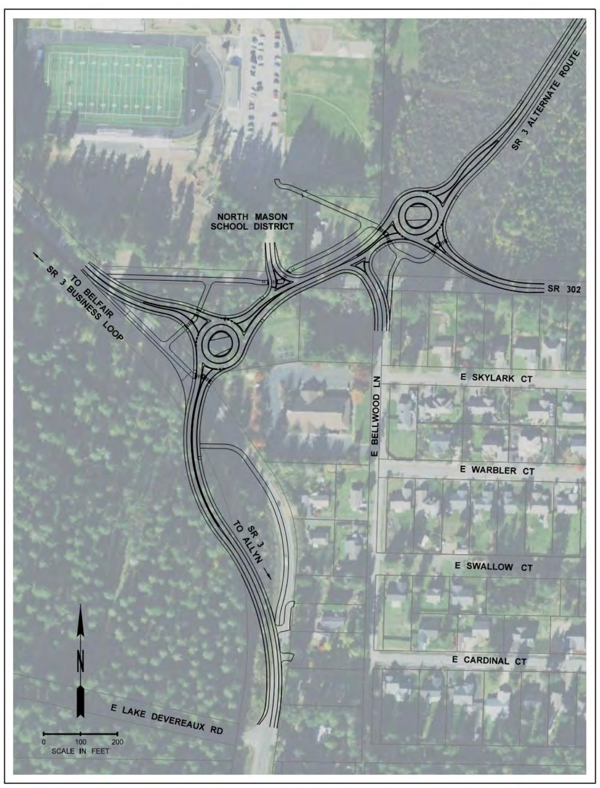

Figure ES-3. SR 3 Freight Corridor – South End Connection at SR 302

Project Need: SR 3 is a Highway of Statewide Significance and a National Highway System designated route with 19,000 annual average daily vehicles per day in 2018 in Belfair. The route experiences congestion during peak commute hours, weekends, holidays, and at various times during the tourist season. Considerable delay occurs at intersections located in the Belfair business and retail area.

Traffic projections show that without development of improvements for regional traffic, operational levels of service (LOS) on the portion of SR 3 through Belfair will continue to decline. This conclusion is supported by several studies conducted over the last decade.

A new Freight Corridor around Belfair that serves regional traffic would improve mobility and reduce congestion through Belfair.

What are the alternatives analyzed?

The alternatives analyzed are the No-Build condition and the Project Action (SR 3 Freight Corridor). The following are the major components of these alternatives:

No-Build – The SR 3 Freight Corridor would not be constructed. This alternative may have some minor improvement during normal maintenance activities of the existing SR 3 highway.

Project Action (SR 3 Freight Corridor) – The SR 3 Freight Corridor Project would construct a two-lane limited access highway on a new alignment to the east of existing State Route 3. The proposed freight corridor would be the main line of SR 3, carrying through traffic between Shelton and Bremerton. The proposed alignment would begin at milepost (MP) 22.81 on SR 3 and connect back at MP 29.49.

How were the study limits determined?

The study limits for the project were determined during travel demand modeling and alternatives analysis in prior efforts. The model developed for the study incorporated Mason County and Kitsap County models and ensured influence areas of all the alternatives were adequately considered.

What methodology was used for traffic analysis and identifying transportation facilities within the area?

This report addresses the No-Build and the Project Action alternatives. The approach taken is to leverage information that was already available from previous studies and analyses along with associated models and assumptions, to demonstrate how the Project Action addresses the purpose and need. Data and analyses were updated only where appropriate. This report references the methodology and results from previous studies when applicable.

Travel forecasts were updated to reflect current input from Mason and Kitsap County models and updated network and land use assumptions. This update was done in coordination with Mason County, Kitsap County, and City of Bremerton staff.

Travel forecasts along SR 3 were estimated using a combination of historical growth and peripheral travel demand data from PSRC and SR 16 Travel Demand Models. Forecast traffic conditions were analyzed using forecast data and software such as Highway Capacity Software (HCS)+, Synchro and SIDRA, applying Highway Capacity Manual (HCM) methodologies. Similar to the 2013 Environmental Assessment, the updated EA assumes up to three connections would be provided on the new Freight Corridor. A design year of 2050 and an opening year of 2028 were modeled in the analysis.

Traffic operations analysis was conducted to assess effects of the Project Action relative to the No-Build condition. HCM methodologies were applied to evaluate arterial and intersection operative conditions for the No-Build and the Project Action. Forecast traffic conditions were analyzed using forecast data and software such HCS, Synchro and SIDRA.

HCS using the HCM 6th Edition methodologies were used to perform highway segment LOS analyses on the existing SR 3 mainline from SR 302 to Lake Flora Road without the SR 3 Freight Corridor (the No-Build Alternative) and with the SR 3 Freight Corridor (the Project Action) for the year 2028 (opening year) and 2050 (design or horizon year). Seven key intersections were analyzed to assess intersection operations without and with the freight corridor, including SR 3 / Lake Flora Road, SR 3 / Log Yard Road, SR 3 / NE Clifton Lane, SR 3 / Old Belfair Highway, SR 3 / SR 106 and SR 3 / SR 302. Intersections were analyzed based on WSDOT's analysis policies and protocols as of the date of this report using two software packages. Synchro 11.0 software was used to analyze the operation of signalized and stop-controlled intersections; SIDRA 7 software was used to analyze roundabout-controlled intersections. Focused analyses were performed at the north and south end connections with SR 3 to gain an understanding of the operations with intersection layout options.

Increased safety along the SR 3 corridor in the Belfair area is another purpose of the Project Action. Five years of collision history data from 2018 to 2022 were analyzed. Collision types, occurrences, and collision rates were summarized. The WSDOT Safety Program methodology generates an Intersection Analysis Location List that is reviewed by WSDOT for possible scoping and programming requests. Collision analysis locations (CAL) and collision analysis corridors (CAC) are also identified. Currently, two IALs and one CAL are within the study limits. These analysis locations and associated programmed safety projects in the vicinity were identified.

What is the affected environment?

What are the key transportation systems in the study area?

SR 3 provides service between Shelton and Bremerton, connecting with US 101 in Shelton and SR 16 in Bremerton. SR 3 is a Highway of Statewide Significance (HSS) and also part of the National Highway System (NHS). Within the limits of the proposed project, SR 3 is a two-lane rural principal arterial with speed limit of 30 miles per hour (mph), except from milepost 27 to milepost 29 where the speed limit is 50 mph. The average daily traffic (ADT) on the route was 19,000 vehicles in 2018. The route handles a little over 3 million tons of freight per year (T-3 classification). The intersections with SR 106 and NE Clifton Lane are signalized with full signals and the intersection with the Belfair Elementary School Exit has a pedestrian crossing signal. Access control on the route varies from managed access to limited access control. Within the project study area, SR 3 connects with SR 106, SR 302, and Old Belfair Highway in Belfair, all of which are non-HSS facilities. The remainder of the public roadway network consists of county roads.

Mason Transportation Authority provides scheduled bus service five to six days a week between Belfair, Bremerton, and Shelton. Local service is provided in Belfair, between downtown Belfair to North Mason High School on SR 3, and Belfair State Park on Old Belfair Highway. Two park-and-ride lots are available in Belfair.

Active transportation facilities are limited in Belfair and along SR 3 in the study area. Within the Belfair urban center, sidewalks and non-signed bicycle lanes exist on both sides of SR 3. Clearly marked pedestrian crosswalks are present at major intersections within Belfair and there is signalized pedestrian crossing on SR 3 at the elementary school. Outside the urban center, paved shoulders are present on SR 3, ranging in width from 5 feet to 12 feet.

The Puget Sound and Pacific Railroad (PSAP) operates a freight rail line that runs through the study area. The rail line is grade separated from SR 3 where it crosses the highway on the north and south sides of Belfair.

What is the existing roadway operative condition in the study area?

Highway LOS analysis shows the one-mile segment of the SR 3 mainline segment north of Lake Flora Road (MP 28.78 to MP 29.78) is LOS D. The signalized intersection at NE Clifton Lane operates at LOS D and E during the AM and PM peak periods, respectively, failing to meet LOS standards. The unsignalized intersection at Old Belfair Highway is operating at failing conditions of LOS E and F during the AM and PM peak periods, respectively.

Crash records collected in the study area between January 1, 2019 and December 31, 2022 indicate that the type and severity of crashes appears to be consistent with congested urban conditions. Rear-end and property damage only (PDO) or non-injury crashes account for the greatest number of crashes. The number of crashes tends to increase under congested conditions, but the severity of those crashes is generally lower, due to lower speeds. At the study area intersections, between January 2018 and December 2022, one serious injury crash occurred. There were no fatal crashes. The intersections of SR 3/NE Clifton Lane and SR 3/Lake Flora Road had the highest crash rates in the study area, ranging from 3.0 crashes per year to 5.0 crashes per year. On SR 3 segments, between the study intersections, 330 crashes were reported, with the majority occurring between Lake Flora Road to NE Clifton Lane (42 percent) and between NE Clifton Lane to SR 106 (40 percent).

What are the direct effects and construction impacts?

Under a No-Build alternative, direct effects such as construction impacts and temporary traffic disruption would not occur. Noise, air quality, water quality, and other construction related direct effects would likewise be absent. However, travelers would continue to experience congestion and delay during peak periods. Access to and from business and other services would continue to be difficult as gaps between vehicle platoons progressing through the corridor become nonexistent.

Direct effects of the Project Action would entail temporary construction effects. Travelers would experience construction related traffic delay and might need to take detour routes for a period of time. Since the majority of the Freight Corridor alignment is through forested land, a major portion of the work would not lead to direct disruption to traffic. There would be an increase in traffic as construction workers go to work sites or bring in and remove equipment and materials. There may be temporary air quality, water quality, and noise effects due to construction, but on-site mitigation measures and standard procedures should offset the effects and render the effects not significant. Direct benefits of building the Freight Corridor would include the creation of construction jobs and increased network capacity at its completion.

What are the project impacts?

Travel demand modeling and traffic operations analysis results provide the basis for evaluating the long-term and cumulative effects of the Project Action relative to the No-Build condition. The most straightforward measure of the project’s value is its potential to affect a reduction in traffic volumes on SR 3. Model data indicates the SR 3 Freight Corridor may be able to reduce 2050 PM peak hour intersection approach volumes in the Belfair commercial area, by as much as 43 percent relative to No-Build conditions. This confirms there are no significant traffic impacts as a result of the project.

As capacity is added to the Belfair network with the SR 3 Freight Corridor, vehicle trips are redistributed across a greater number of trip path choices, resulting in a generalized reduction in congestion and improvement in travel time and average operating speed. This again demonstrates that building the Freight Corridor has no significant long term cumulative impact on traffic operations through Belfair but rather reduces congestion and delay, increases safety potential, and improves travel times particularly for regional traffic.

What are the effects of the Project Action on highway operations?

Highway LOS analysis shows SR 3 operates at LOS D under 2019 existing conditions. Analysis shows that SR 3 would experience increased congestion under No-Build conditions. LOS would continue to decline along the corridor, reaching LOS E by 2050 and the volume to capacity (v/c) ratio would increase. With development of the project, LOS and the v/c ratio along the corridor in 2050would be comparable to existing 2019 conditions, demonstrating the Project Action has no significant adverse effect on SR 3 highway operations.

The Project Action would also improve intersection performance. Under the No-Build condition, the intersections at NE Clifton Lane and Old Belfair Highway are forecast to reach LOS F in the AM and PM peaks by 2050. The intersection at SR 106 is also forecast to operate at LOS F during the PM peak by 2050. The Project Action would improve operations and decrease delay at all intersections in the study area. The reduction in intersection approach volumes and delay at the intersection result in improved intersection operations, therefore, there is no significant impact at intersections due to Project Action.

What are the advantages and disadvantages of No-Build and Project Action?

No-Build: The No-Build alternative would result in additional congestion, increased duration of delay, longer travel times, exacerbation of safety issues, and potential impacts to air quality precipitated by idling engines in very long queues at signalized and minor street unsignalized intersections. Access to and from business and other services would become difficult as gaps between vehicle platoons progressing through the corridor become nonexistent.

Project Action: Construction of the SR 3 Freight Corridor would provide an alternative route around the Belfair community, mitigating aesthetic, noise pollution, air quality, commercial and retail activities, and separating local ingress and egress access issues from regional throughput. The project offers the best prospects for improving travel times through the corridor for pass-through traffic, presuming access is limited. Construction of the Freight Corridor would lessen traffic volumes through Belfair, which could have both positive and negative consequences for commercial and retail businesses along SR 3.

The project would result in diversion of regional through traffic to the SR 3 Freight Corridor. With reduced traffic volumes, SR 3 through Belfair would experience less congestion, less delay and improved travel times. Lower volumes would lessen exposure and is likely to ease congestion related rear-end collisions. With lower volumes, left turning movement would find more gaps to turn safely.

The Freight Corridor would be designed to include accommodations for the bicyclist and pedestrians that will meet WSDOT's Complete Streets guidelines for limited access facilities.

The project would provide an alternate route during emergencies and for emergency services. Regional response time would likely improve.

The project is expected to have beneficial impacts to transit operations. Reduced congestion and delay would allow for efficient transit operations and the Freight Corridor would provide alternate faster regional transit routes.

Indirect and Cumulative Effects

Improved travel times would allow for growth in activities and associated travel connected to businesses, commercial enterprises, and residences served by SR 3 outside of Belfair that are particularly dependent on regional traffic. However, both Mason and Kitsap counties come under the state's Growth Management Act and have comprehensive planning in place to address the magnitude, form, and process associated with such land use changes.

Since no direct or indirect increase in total traffic in the study area is predicted as a result of the Project Action, the cumulative traffic impacts are assumed to be negligible.

Mitigation and Conclusion

The SR 3 Freight Corridor would offer a good level of service for regional traffic using SR 3 in the study area. The Project Action would address existing and forecast travel delay for those using SR 3 between Kitsap County and Mason County. The results of this analysis support the conclusion that there would be beneficial transportation impacts due to the Project Action.

1. Project Description

1.1 Report Organization

This report is organized as follows:

- Chapter 1 provides description of the project, states its purpose and need, outlines objectives and the goal of this report, and discusses project alternatives (No-Build and Project Action)
- Chapter 2 documents methodology and transportation studies that have been performed for the Project Action
- Chapter 3 discusses the affected environment in terms of key roadway operative conditions, collision history, and current and future projects in the area
- Chapter 4 addresses the potential effects of the Project Action, including direct effects and the indirect and cumulative effects
- Chapter 5 provides concluding discussions, including what the required project would achieve and describes any mitigation to avoid or minimize adverse effects
- Chapter 6 provides a list of references

1.2 Description of Project

The State Route (SR 3) Freight Corridor would provide an alternative route to SR 3 and allow users to bypass the urban area of Belfair in Mason County and Kitsap County (see Figure 1-1). This new corridor would be a two-lane, limited-access highway, east of the existing SR 3 corridor, and would act as the mainline for through traffic.

The SR 3 Freight Corridor would run north and south, with a proposed design speed of 50 miles per hour (mph) and a posted speed of 50 mph. The existing SR 3 route would be converted to a “Business Loop,” which would provide access to Belfair, SR 106, SR 300 and Old Belfair Highway. The roadway configuration would consist of two twelve-foot lanes and eight-foot shoulders. The approximate width of the existing right-of-way is 120 feet.

The proposed 6-mile corridor would branch from the existing SR 3 corridor at milepost (MP) 22.81 and reconnect at MP 29.49. A roundabout is proposed at the north end of the alignment to connect the existing SR 3 corridor to the Freight Corridor at Lake Flora Road (see Figure 1-2). Lake Flora Road would be realigned to accommodate the roundabout. Two roundabouts are proposed to connect the south end of the new corridor to the existing SR 3 corridor at SR 302 (see Figure 1-3). At this south connection, the western roundabout would provide access to the existing SR 3 corridor. The eastern roundabout would provide access to SR 302 and the proposed SR 3 Freight Corridor. Between the two roundabouts, right-in-right-out access is proposed to provide access to North Mason High School and Belwood Lane. The dual roundabouts would function as a system to allow traffic to circulate and exit to the desired route.

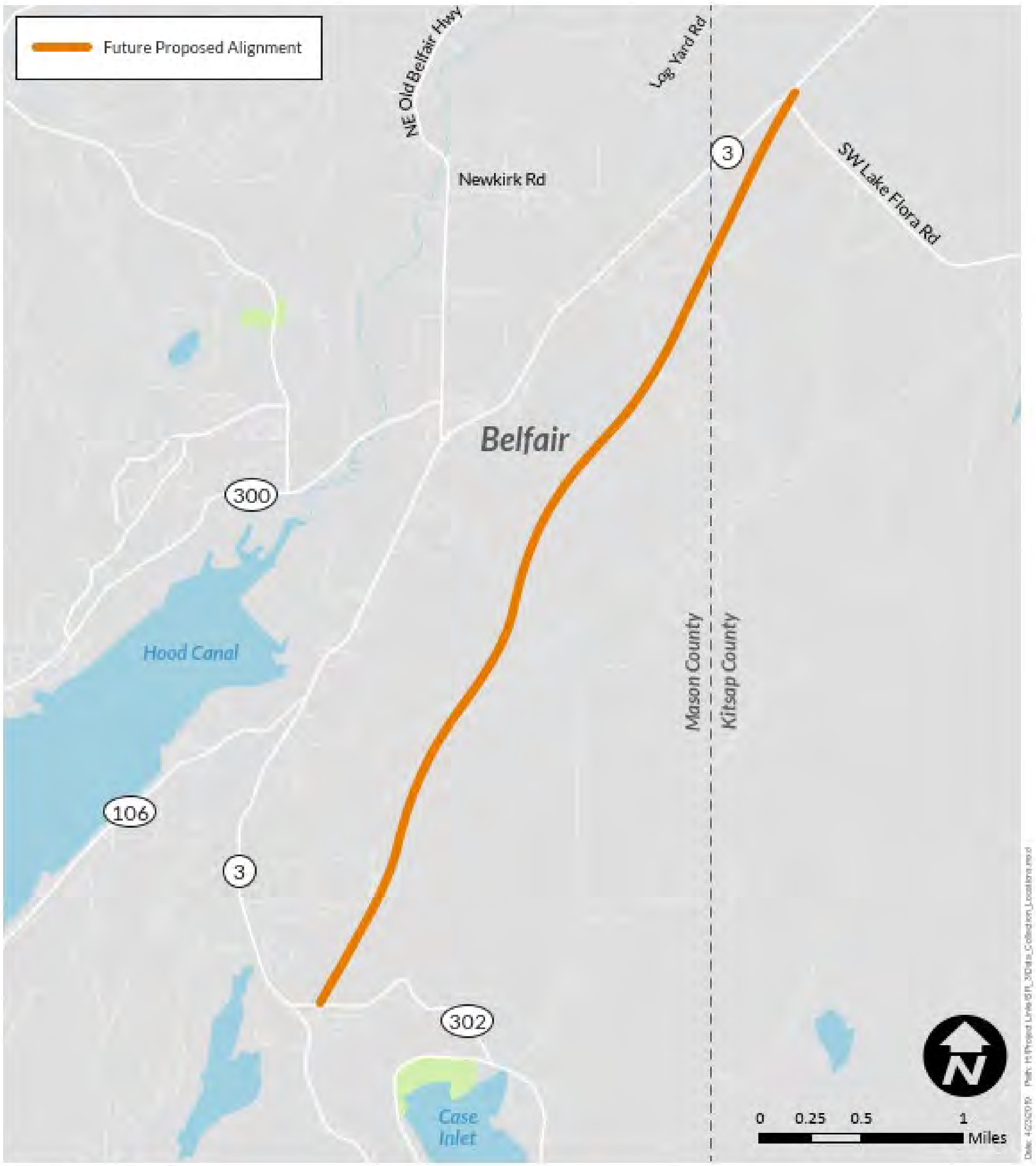

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Figure 1-1. SR 3 Freight Corridor – Freight Corridor Alignment

Figure 1-2. SR 3 Freight Corridor – North End Connection at Lake Flora Road

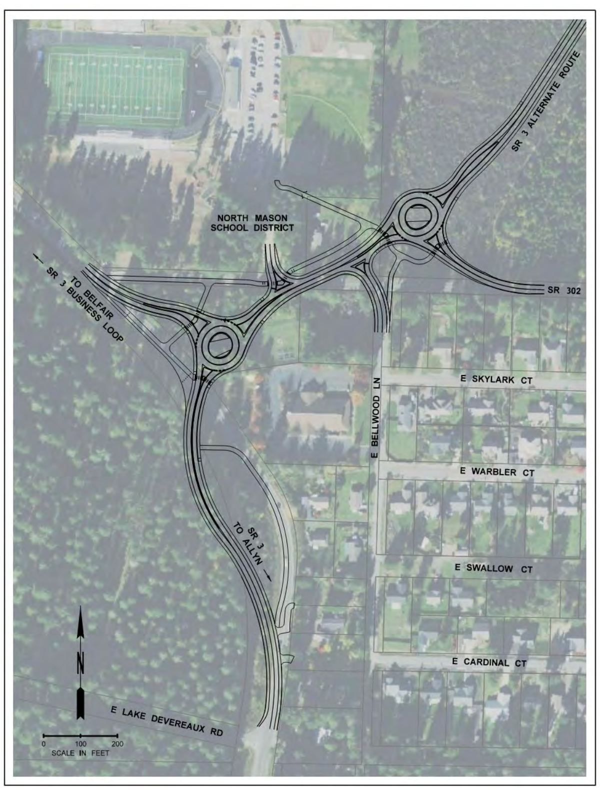


Figure ES-3. SR 3 Freight Corridor – South End Connection at SR 302

1.3 Purpose and Need of Project

The purpose of the SR 3 Freight Corridor project is to provide a reliable high speed regional route that will improve congestion and safety between Kitsap and Mason Counties. The proposed corridor would reduce congestion in the urban Belfair area by providing an alternative route around the downtown area and also provide access to regional jobs, goods, and services. With less congestion in Belfair, the efficiency and safety of the transportation system would improve. Emergency vehicles would experience fewer delays from congestion and gain better access to the region.

The proposed SR 3 Freight Corridor would provide an efficient and reliable route for regional traffic between Shelton and Bremerton through the year 2050. The SR 3 Freight Corridor would relieve the existing SR 3 route, improving efficiency through the region and accommodating regular commercial and seasonal tourist traffic. This project would also serve as an alternative route to the existing SR 3 during any highway closures in Belfair.

1.4 Report Objectives and Goal

This transportation discipline report is part of that overall work and will be used for preparing a NEPA Environmental Assessment. Objectives of this report are to:

- Address the purpose and need of the Project Action
- Assess the potential effects of the project
- Identify possible mitigation measures

1.5 Project Alternative (No-Build and Project Action)

Two alternatives were analyzed for this report – the No-Build and the Project Action (SR 3 Freight Corridor).

No-Build – In the No-Build alternative, the SR 3 Freight Corridor would not be constructed. It is assumed that normal maintenance activities or planned projects would continue, which may improve some conditions, but they are expected to be relatively minor.

Project Action (SR 3 Freight Corridor) – The Build Scenario assumes construction of a two-lane, limited access highway on a new alignment east of the existing SR 3 highway. Roundabouts would provide connections at both the north and south end of the alignment, where the new corridor ties back into the existing SR 3 corridor. SR 3 Freight Corridor assumptions include:

- A two-lane limited access roadway
- 50 mph design speed on the corridor
- 50 mph posted speed limit on the corridor
- A roundabout at the north end of the alignment to connect the existing SR 3 corridor to the new corridor at Lake Flora Road
- Two roundabouts to connect the south end of the new corridor to the existing SR 3 corridor at SR 302
  - → The western roundabout would provide access to the existing SR 3 corridor
  - → The eastern roundabout would provide access to SR 302 and the proposed SR 3 Freight Corridor
- Right-in-right-out access to provide access to North Mason High School and Belwood Lane

2. Methodology and Transportation Studies

The intent of this section of the report is to describe contribution of past transportation studies on development of the SR 3 Freight Corridor concept. This section summarizes the methodology, assumptions, and findings that led to the SR 3 Freight Corridor alternative. At its inception, the SR 3 Freight Corridor project was known as the Belfair Bypass project. The project name was changed in 2019.

2.1 Transportation Studies

Belfair Bypass Analysis – 1997

The WSDOT Reconnaissance Study (1966) identified a new roadway alignment in northeast Mason County to improve mobility through capacity improvement. In 1997, WSDOT completed the Belfair Bypass Analysis, which concluded that the concept of providing a SR 3 bypass around the community of Belfair appeared to be a viable means of improving mobility in the corridor.

Mason County Belfair Bypass Environmental Assessment – 2001

In 2001, the Mason County Belfair Bypass Environmental Assessment (EA) for a refined bypass alignment was completed. The Bypass was proposed as an undivided two-lane principal arterial with a design speed of 60 mph and a posted speed of 55 mph. The EA was signed by the Federal Highway Administration (FHWA) in November 2001. However, a Finding of No Significant Impact (FONSI) was not issued for the EA.

Belfair Bypass Traffic Forecast and Analysis – 2006

In 2006, The Transpo Group performed Belfair Bypass Traffic Forecast and Analysis traffic study. This study developed a travel demand forecasting model, produced traffic forecasts, evaluated future traffic operations, and documented impact of the bypass on traffic operations. One of the outcomes from this effort included assessment of the number of lanes needed and when. It noted a four-lane bypass would attract few additional trips and be underutilized in 2030.

Preferred Connection Alternative Selection, SR 3 Belfair Bypass – 2007

WSDOT conducted a Preferred Connection Alternative Selection, SR 3 Belfair Bypass in 2007. It analyzed various alternatives for how the proposed bypass would connect with existing SR 3. A criteria-based methodology was used to evaluate options for the north and south connections. Operational functionality, safety, cost, public approval, property impacts, and environmental and permitting factors were evaluated. Alternatives were scored in terms of their impacts relative to these criteria.

Belfair Bypass Traffic Analysis Report – 2008

In 2008, The Transpo Group developed a 2035 travel demand model used for the Belfair Bypass Traffic Analysis Report (BBTAR). Alternatives analyzed were baseline conditions (no Belfair Bypass) and Belfair Bypass assuming the preferred connections. For the north connection, it was assumed the junction would result in a dead-end segment, to be used as an access road to existing properties only. The report concluded that the bypass is needed by 2035. However, in 2035 a two-lane bypass would operate at capacity for southbound traffic.

An analysis of intersection operations relative to a 2035 two-lane bypass with Newkirk Road connection was provided. In addition, two layouts of the north junction of the bypass with Lake Flora Road and existing SR 3 were studied and compared. The study concluded that, with construction of the retained bypass alternative, several intersection improvements were still needed, including signalization of currently two-way-stop-control locations, and channelization.

The BBTAR report examined transportation improvement alternatives for the Belfair Bypass. Based on a comparison of the modeling results, a 2035 Belfair two-lane bypass with Newkirk Road connection was selected for further study. The BBTAR provides 2035 traffic operations relative to 2035 Belfair two-lane bypass with Newkirk Road connection. It also evaluated two North End options for connecting existing SR 3 to the Belfair Bypass. North End Option 1 consisted of creating a dead-end segment that would serve adjacent property owners only. North End Option 2 consisted of providing a southbound only connection from the Belfair Bypass to SR 3.

SR3 Belfair Area Widening and Safety Improvements (BAWSI), Traffic Analysis Report – 2008

Completed in 2008, the SR3 Belfair Area Widening and Safety Improvements (BAWSI) Traffic Analysis Report provided an analysis specific to the capacity and safety improvements to SR 3 in the Belfair area. An option resulting in a dead-end segment was assumed for the north end connection of the Bypass to SR 3. The report predicted intersection level of service (LOS) for three scenarios: no improvements, improvements currently identified as part of the BAWSI project, and additional improvements needed to maintain LOS D or better at SR 3 intersections. The report concluded traffic operations on SR 3 would be improved, assuming the Belfair Bypass with a connection at Newkirk Road was constructed, and that the BAWSI project improvements are implemented.

Belfair Bypass Transportation Discipline Report – 2009

In June 2009, WSDOT Eastern Region completed a draft Belfair Bypass Transportation Discipline Report. It considered a 2035 Belfair two-lane bypass without the Newkirk road connection.

Summary Report – SR 3, Belfair Bypass – 2009

The 2005 Transportation Partnership Account legislation included funding for work on the pre-construction phase of the SR 3, Belfair Bypass – New Alignment project. The purpose of the project was to address congestion on SR 3 by construction of a new alignment around Belfair. The 2009-2011 Transportation Budget contained no funding for the Bypass project from July 2009 through 2018. As a result, WSDOT work was curtailed in June 2009. In June 2009, WSDOT documented the development work on this project by preparing a Summary Report – SR 3, Belfair Bypass. The purpose was to provide a consolidated document that described the work conducted between 2006 and 2009, document what had been learned, and for use when work was re-started on the project.

SR 3 Belfair Bypass Proviso, Alternatives Outreach Report – 2010

In the 2009 State Transportation Budget, the Legislature included a proviso directing WSDOT to conduct a public outreach process to be used in reconsidering the scope and budget of the Belfair Bypass project. In June 2010, WSDOT submitted the SR 3 Belfair Bypass Proviso, Alternatives Outreach Report to the legislature. The four most promising alternatives examined by an Expert Panel were forwarded to WSDOT staff for further consideration.

Bremerton Economic Development Study (BEDS) – 2012

The Bremerton Economic Development Study (BEDS), published in 2012, did not reanalyze the Belfair Bypass but did adopt the findings from previous studies regarding this project. It identified the Belfair Bypass as one of the top priority projects for the stakeholders and the Belfair community. The study called for the construction of an “alternate two-lane divided highway around Belfair with full limited access control.”

Belfair Bypass Environmental Assessment – 2011

In the 2010 supplemental budget, the Washington State Legislature provided $750,000 to continue work on the Belfair Bypass EA. The EA analyzed a No-Build alternative as well as a project alternative that would construct a two-lane limited access highway on a new alignment running approximately north-south to the east of SR 3 in Mason County and a small portion in Kitsap County. The project alternative included a north end connection to SR 3 at Lake Flora Road and a south connection just south of the intersection with SR 302.

SR 3 Belfair Bypass Transportation Discipline Report – 2011

Conducted by WSDOT, this report analyzes and summarizes the need for the Belfair Bypass. It describes the need for a new alignment to relieve congestion on the SR 3 corridor and in the Belfair urban area. Using a design year of 2035, the analysis in this study showed conditions on the SR 3 corridor are expected to continue to deteriorate without the project.

SR 3 – Belfair Bypass Revised Environmental Assessment – 2013

Conducted by WSDOT, this assessment analyzed the environmental impacts of the construction of the Belfair Bypass. The results of the assessment showed wetland, wildlife, land use, property, public services, utilities, visual quality, and geology and soils would all experience potential impacts under the Build Scenario of this project. Mitigation measures were proposed to offset some of these impacts.

SR 3 Freight Corridor Study Existing Conditions Summary Technical Memorandum – 2019

Prepared by Parametrix on behalf of WSDOT, this technical memorandum detailed the existing conditions of SR 3. The study area for the analysis covered approximately 6.7 miles from MP 22.81 (south of SR 302) to MP 29.49 (north of Lake Flora Road). The study used 2019 traffic data to update the traffic analysis that was prepared for the 2013 SR 3 Belfair Bypass Environmental Assessment. Existing level of service (LOS), travel time, safety, and origin destination (OD) data were analyzed and reviewed for the corridor.

SR 3 Freight Corridor Study Future Conditions Summary Technical Memorandum – 2020

Prepared by Parametrix on behalf of WSDOT, this technical memorandum detailed the evaluation of intersection control alternatives for the proposed north and south end connections for the SR 3 Freight Corridor (previously known as the Belfair Bypass) in both opening year (2028) and horizon year (2050) conditions. Analysis results showed that a single-lane roundabout at the south end connection would operate acceptably for both future year scenarios. The north end connection may require a multi-lane roundabout because Kitsap County is projected to grow due to the Puget Sound Industrial Center (PSIC) and increased population in the Belfair Urban Growth Area (UGA). This project would construct a single-lane roundabout at the north end of the connection. If future growth triggers the need for a multi-lane roundabout, the developer or proponent for the new development would be responsible for improvements to the roundabout, as required under Mason County Concurrency ordinances and the Growth Management Act. The mainline is expected to meet WSDOT LOS standards for a two-lane highway.

SR 3 Freight Corridor Study Transportation Analysis Methodology Memorandum – 2020

Prepared by Parametrix, this methodology memorandum identified the analysis needed to update the transportation analysis prepared in December 2011 for the SR 3 – Belfair Bypass Project Environmental Assessment (2013) to support current design analysis and obtain design approvals. Updates to the methodology described in this memorandum include performance measures, data, travel demand forecasting, traffic operations analysis, highway segment analysis, intersection analysis, travel time analysis, and safety.

2.2 Methodology

The latest description of the Project Action and the purpose and need statement provides the basis for this Transportation Discipline Report for the SR 3 Freight Corridor project. A review of prior transportation studies was undertaken and incorporated as part of the project analysis. This report addresses the No-Build and the Project Action alternatives. The description of the Project Action includes construction of a two-lane, limited access highway on a new alignment east of the existing SR 3 highway with roundabouts at both the north and south end of the alignment where the Freight Corridor ties back into the existing SR 3 corridor.

The focus of the Project Action is to improve regional mobility in the Belfair urban area with a reliable high speed regional route between Kitsap and Mason Counties.

The approach taken in this report was to use information that was already available from previous studies and analyses, using these models and assumptions to demonstrate how the Project Action addresses the purpose and need. The Project Action would reduce congestion through Belfair by providing an alternative route around Belfair for regional through traffic, thereby reducing delay and improving travel times.

2.2.1 Performance Measures

The study team selected multiple performance measures to assess how regional mobility may be improved and congestion may be reduced through the Project Action alternative relative to the No-Build alternative. These measures include traffic volume reduction through diversion to the Freight Corridor, travel times, intersection delay, operating speeds, and LOS. For purposes of analysis, the corridor in Belfair was considered urban, as it exhibits urban characteristics, particularly in the Belfair commercial core. The performance measures were analyzed for the years 2019, 2028 and 2050.

2.2.2 Data

Traffic data collected in May of 2019 as part of the planning-level analysis for the SR 3 Freight Corridor project were used for this analysis. In addition to the updated traffic data, WSDOT GIS Workbench data layers, county, transit, and other agency plans and programs were used to identify non-roadway transportation systems.

Traffic data collected by WSDOT at the permanent traffic counter on SR 3, south of Lake Flora Road (R089S) was evaluated to determine potential growth between 2023 and 2019. While the data indicates a significant decrease in traffic volumes during the COVID pandemic in 2020, there has been a rebound, and current volumes are now roughly equivalent to those recorded in 2019. Consequently, the 2019 count data remains suitable for representing Existing Conditions.

2.2.3 Travel Demand Forecasting

Travel forecasts were updated to reflect current input[1] from Mason and Kitsap County models and updated network and land use assumptions. This update was done in coordination with Mason County, Kitsap County, and City of Bremerton staff. Travel forecasts along SR 3 were estimated using a combination of historical growth and peripheral travel demand data from PSRC and SR 16 Travel Demand Models. Similar to the 2013 Environmental Assessment, the updated EA assumes up to three connections would be provided on the new Freight Corridor, including connections at Log Yard Road, Romance Hill Road, and Alta Drive.

[1] As of January 2024, the "existing year" for the Kitsap County travel demand model is still the year 2019.

A design year of 2050[2] and an opening year of 2028 were modeled in the analysis.

2.2.4 Traffic operations analysis

The objective of the traffic operations analysis was to determine whether the proposed Freight Corridor would improve regional mobility by providing an alternative route around Belfair and to identify any significant project impacts. Another objective was to determine whether congestion through Belfair would be reduced, as lower traffic volumes can decrease congestion and delay and improve travel times.

2.2.5 Highway segment analysis

HCS using the HCM 6th Edition methodologies were used to perform highway segment LOS analyses on the existing SR 3 mainline from SR 302 to Lake Flora Road without the SR 3 Freight Corridor (the No-Build Alternative) and with the SR 3 Freight Corridor (the Project Alternative) for the year 2028 (opening year) and 2050 (design or horizon year).

2.2.6 Intersection Analysis

Intersections were analyzed based on WSDOT's analysis policies and protocols as of July 2020 using two software packages. Synchro 10.0 software was used to analyze the operation of signalized and stop-controlled intersections and SIDRA 7 software was used to analyze roundabout-controlled intersections.

2.2.7 Travel Time Analysis

Future travel times on the SR 3 corridor and along the proposed Freight Corridor was calculated using a combination of existing travel times observed during field visits, Google Maps, and changes to intersection delays in the Synchro and SIDRA models. SimTraffic software was not used during the travel time analysis for existing or future conditions.

2.2.8 Safety

A basic safety level analysis, following WSDOT guidelines and direction, was conducted for this study. This type of safety analysis presents only factual conclusions about current conditions. A more detailed quantitative measure of how well the Freight Corridor addresses safety along the corridor using an intermediate or advanced safety level analysis was not performed as part of this work. Crash data between January 1, 2018, and December 31, 2022, was evaluated. Data from the safety study was reviewed and used in a qualitative assessment of potential safety improvements that the Freight Corridor could include. The change in intersection control at the termini intersections alters the existing safety conditions at these intersections as documented in Intersection Control Evaluation (ICE) reports prepared for each.

[2] The horizon year (2050) identified in this report reflects the growth assumed in the local agency comprehensive plans and the growth (full build-out) assumed for the PSIC. The SR 3 Freight Corridor Planning Study (WSDOT 2020) estimated traffic forecasts for a horizon year of 2040. For this report, additional growth between 2040 – 2050 was not assumed because the 2040 forecast assumed the level of growth allowed under the Growth Management Act which defines and allocates the growth allowed by each UGAs and Urban Growth Centers. Therefore, the 2040 forecasts and volumes included in the SR 3 Freight Corridor Planning Study were not updated for this report.

3. Affected Environment

3.1 Land Uses

Existing land use within the study area is a mix of rural, commercial, and residential. The proposed roadway would pass through the Belfair UGA and the City of Bremerton. Within Belfair's commercial core, the land use comprises mixed use (integrated retail, commercial and industrial uses), general commercial, education, and residential. Most of the residential use consists of single-family dwelling units. Outside of the Belfair UGA, land use is primarily rural and mostly undeveloped forested land.

The 2003 Belfair Urban Growth Area Plan determined that most of Belfair's future growth potential is on the plateau north and east of the existing SR 3, along the new SR 3 alignment. Zoning has been adopted in the UGA to support this anticipated growth, including residential and mixed-use zoning.

3.2 Key Transportation Systems in the Study Area

SR 3 connects Mason and Kitsap counties along the Kitsap Peninsula, connecting with US 101 in Shelton and SR 16 in Bremerton. This study evaluates the existing SR 3 corridor between Lake Flora Road in the north (MP 29.49) to SR 302 (MP 22.81) in the south. Within the study area, SR 3 connects with SR 106, SR 302, and (SR 300) Old Belfair Highway in Belfair.

SR 3 is a two-lane road between Belfair Elementary School (MP 25.42) and NE Ridgepoint Boulevard (MP 26.86), with a two-way left turn lane through Belfair. Turn lanes were present in the vicinity near Log Yard Road when existing data were collected. A single lane roundabout was constructed in late spring 2020 at the intersection of SR 3 and Log Yard Road. SR 3 has a truck climbing lane beginning at MP 26.93 (approximately 400 feet north of NE Ridgepoint Boulevard) and ending at MP 27.66.

SR 3 within the study area has posted speed limits ranging from 30 mph in Belfair to 50 mph outside of the Belfair commercial area. Existing counts recorded 85th percentile speeds which represents the speed that 85 percent of vehicles travel at or below. On SR 3 north of Lake Flora Road, it was roughly 60 mph and south of SR 302 it was roughly 50 mph. The spot speed studies show the posted speed limit corresponds with the 85th percentile speed near SR 302, however, 85th percentile travel speeds near Lake Flora Road exceed the posted travel speed by almost 10 mph.

Three intersections on the route are currently signalized – SR 3 at SR 106, SR 3 at NE Clifton Lane, and an exit at Belfair Elementary School which is active only during school release. There are numerous commercial and retail accesses located along the route, as well as two-way stop and one-way stop controlled intersections. Due to heavy northbound and southbound traffic flows on SR 3, especially during the AM and PM peak periods, motorist delay at these locations can be significant. Access control on the route varies from managed access to limited access control.

There are two existing SR 3 under-crossings within the study limits, both crossing USG railroad bridges. Bridge number 003-021 begins at MP 27.38 and bridge number 003/017 begins at MP 23.81.

The study area is shown in Figure 3-1.

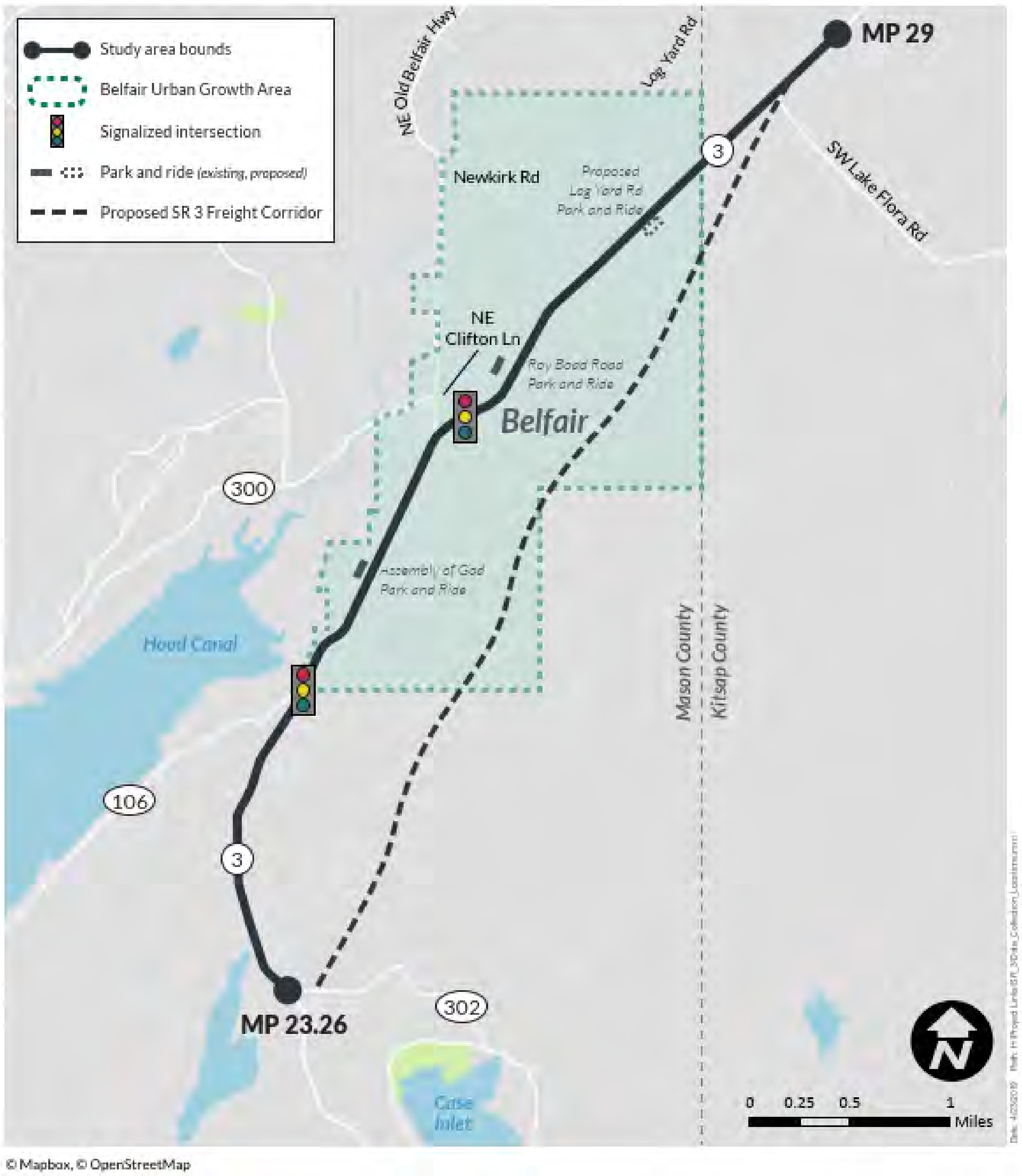


Figure 3-1. SR 3 Freight Corridor Study Area

3.2.1 State and National Highway Classifications

WSDOT classifies SR 3 within the study area as a Rural Other Principal Arterial. This section of SR 3 is designated as a critical rural freight corridor and is part of the National Highway Freight Network (NHFN). SR 3 is also identified as an NHS route and as a Highway of Statewide Significance (HSS). The NHS was established by the U.S. Congress and implemented by FHWA as a way of focusing resources on the nation's most important highways. The NHS includes the Interstate Highway System, as well as other roads important to the nation's economy, defense, and mobility. HSS facilities include interstate highways and other principal arterials that are needed to connect major communities in the state. The designation assists with the allocation and direction of funding.

SR 3 within the study area is not designated as one of Washington's Scenic and Recreational Highways. However, SR 3 is often used to access the Pacific Coast Scenic Byway, either at the northern terminus at Hood Canal or at the southern terminus at US 101. US 101 and SR 16 are HSS facilities and SR 106, Old Belfair Highway, and SR 302 are non-HSS facilities.

3.2.2 Freight and Goods Transportation System Classifications

WSDOT classifies all highways, county roads, and city streets by reported annual gross truck tonnage, ranging from T-1, the highest tonnage, to T-5, the least tonnage. SR 3 in the study area (MP 23.26 to MP 28.78) handles a little over 3 million tons of freight per year and is classified as a T-3 facility in the Statewide Freight and Goods Transportation System (FGTS) with an existing daily truck percentage of 6 percent.

The Puget Sound and Pacific Railroad (PSAP) operates a freight rail line that runs through the study area. Headquartered in Elma, WA, the PSAP operates 131 miles of track between Chehalis in the south, Hoquiam to the west, and Bangor Naval Base to the north. Major commodities shipped on the line are lumber, logs, and chemicals for pulp and paper mills. PSAP also provides service to the U.S. Navy at Bremerton.

3.2.3 Transit Operations

Mason Transit Authority (MTA) operates transit service in Mason County, providing connections to the surrounding communities and important commuter destinations. Four routes serve Belfair:

- Route 1: Service between Shelton and Belfair via SR 3
- Route 3: Service between Belfair and Bremerton via SR 3 through Gorst with local service on Old Belfair Highway
- Route 4: Service within Belfair via a loop route connection to local destinations
- Route 23: Express service between Belfair and Bremerton via SR 3 with limited daily trips

MTA provides scheduled service five to six days a week. Bus stops are present along each route, however, riders can also flag a bus down anywhere along the route provided they pick a safe location where the bus can pull completely off the road.

In addition to fixed route service, MTA operates dial-a-ride services, paratransit, worker/driver buses, and vanpool programs. More than half of the vanpools connect communities in Mason County to the Naval Station in Bremerton, while others serve Bangor, Keyport, and Seattle.

MTA maintains two park-and-ride lots in the Belfair area, one at the Belfair Assembly of God parking lot and one on Roy Road behind the Safeway. Mason County recently constructed a new park-and ride lot just east of the existing SR 3/Log Yard Road intersection. The new park-and-ride was opened in May 2023.

Although a portion of the project study area near Lake Flora Road is in Kitsap County, Kitsap Transit service does not provide fixed route service in the study area.

Transit travel within Mason County is free. When traveling outside Mason County to Bremerton there is a $1.50 one-way charge for youths and adults and a $0.50 charge for seniors and persons with disabilities.

3.2.4 Active Transportation

Within the Belfair urban center, sidewalks and non-signed bicycle lanes exist on both sides of SR 3. Clearly marked pedestrian crosswalks are present at major intersections within Belfair and there is a signalized pedestrian crossing on SR 3 at Belfair Elementary School. Outside the urban center, paved shoulders are present on SR 3, ranging in width from 5 feet to 12 feet. Mason County does not have long-distance trails near the SR 3 study corridor that serve nonmotorized users and commuters. The Theler Wildlife Refuge, however, is a popular county trail with access off SR 3 near Belfair Elementary School.

3.2.5 Rail Operations

The PSAP operates a freight rail line that runs through the study area. The rail line is grade separated from SR 3 where it crosses the highway on the north and south sides of Belfair. There is no passenger service provided on this rail line. The PSAP is headquartered in Elma, Washington and operates 131 miles of track extending to Chehalis in the south, Hoquiam to the west, and Bangor Naval Base to the north. The PSAP interchanges with the Burlington Northern Santa Fe and Union Pacific Class I carriers in Centralia. Major commodities shipped on the line are lumber, logs, and chemicals for pulp and paper mills. The PSAP provides service to the US Navy at Bremerton.

3.2.6 Emergency services and response

Congestion on SR 3 results in delays in emergency response. A common consequence of emergency vehicle response through a highway corridor such as Belfair is disruption of normal traffic flows and operation of the highway and arterials.

3.3 Existing Roadway Operative Conditions in Study Area

3.3.1 Traffic Volumes

Traffic volumes along SR 3 fluctuate with the seasons due to the high tourist and recreational use along the highway on weekends, holidays, and during the summer months. **Table 3-1** illustrates the seasonal variations in traffic volumes on SR 3 south of Lake Flora Road at MP 28.68. Traffic volumes were slightly higher on the average Friday than during mid-week in 2019. Summer weekends in June, July, and August experienced higher traffic volumes than average weekends throughout the year, as do holiday weekends, such as Memorial Day and Labor Day. **Figures 3-2** and **3-3** summarize 2019 AM and PM peak hour traffic volumes along SR 3. **Figure 3-4** summarizes midweek ADT volumes in the study area.

Table 3-1. Comparison of Seasonal Traffic Volumes on SR 3, South of Lake Flora Road

Time Period	2018 Average Daily Traffic[a]
Average Midweek (Tuesday-Thursday)	19,000
Average Friday	20,300
Average Weekend	16,500
Average Non-Holiday Summer Weekend	19,400
Average Summer Holiday Weekend (Memorial Day and Labor Day)	18,900

[a] 2018 counts taken at WSDOT permanent traffic recorder (PTR) at MP 28.68

3.3.2 Highway Segment Analyses

LOS standards for HSS facilities, such as SR 3, are established by WSDOT. The standard is LOS C for rural areas and LOS D for urban areas. For the purposes of this report, the corridor along the section of highway in the Belfair vicinity was considered urban as it displays urban characteristics, particularly at the Belfair commercial core.

Consistent with the previous EA published in 2013, a mainline LOS analysis for the entire SR 3 Freight Corridor was performed. The software program HCS 7 was used to evaluate LOS for the existing one-mile highway segment north of Lake Flora Road. Table 3-2 shows the highway operations for the existing section of SR 3. The level of service for Class I highways is determined by average travel speed (ATS) and percent time spent following (PTSF). The worse of the ATS or PTSF is used to determine the prevailing LOS.

Table 3-2. Existing Year (2019) PM Two-Way Two-Lane Highway LOS

State Route 3 Mainline Segment	Percent Time Spent Following (PTSF)[a]	Average Travel Speed (ATS)	Level of Service
MP 28.78 (Lake Flora Road) to MP 29.78	77%	47 mph	LOS D

[a] Average time percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway (HCM 6th Edition, 2016).

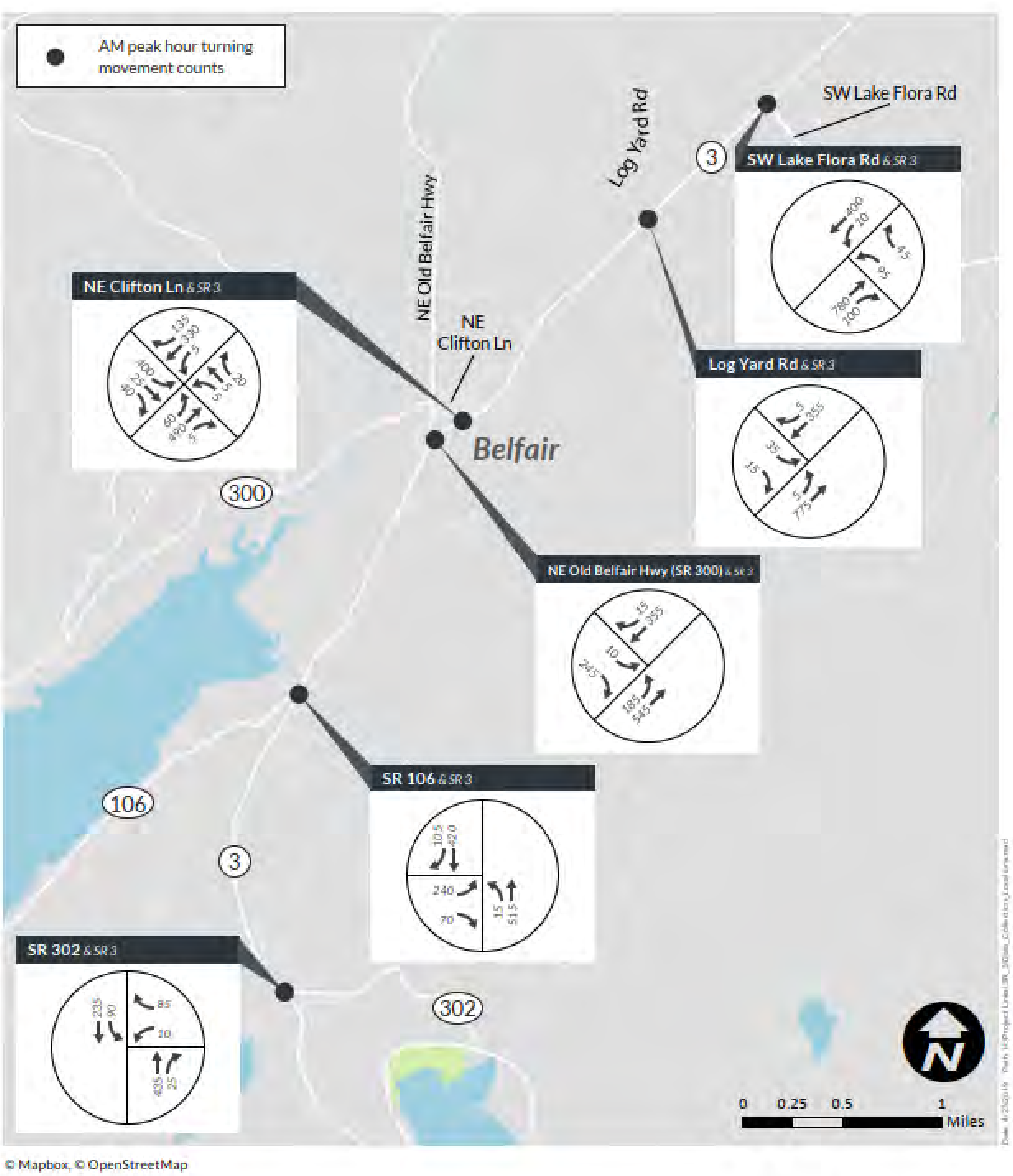


Figure 3-2. 2019 Existing AM Peak Hour Volumes

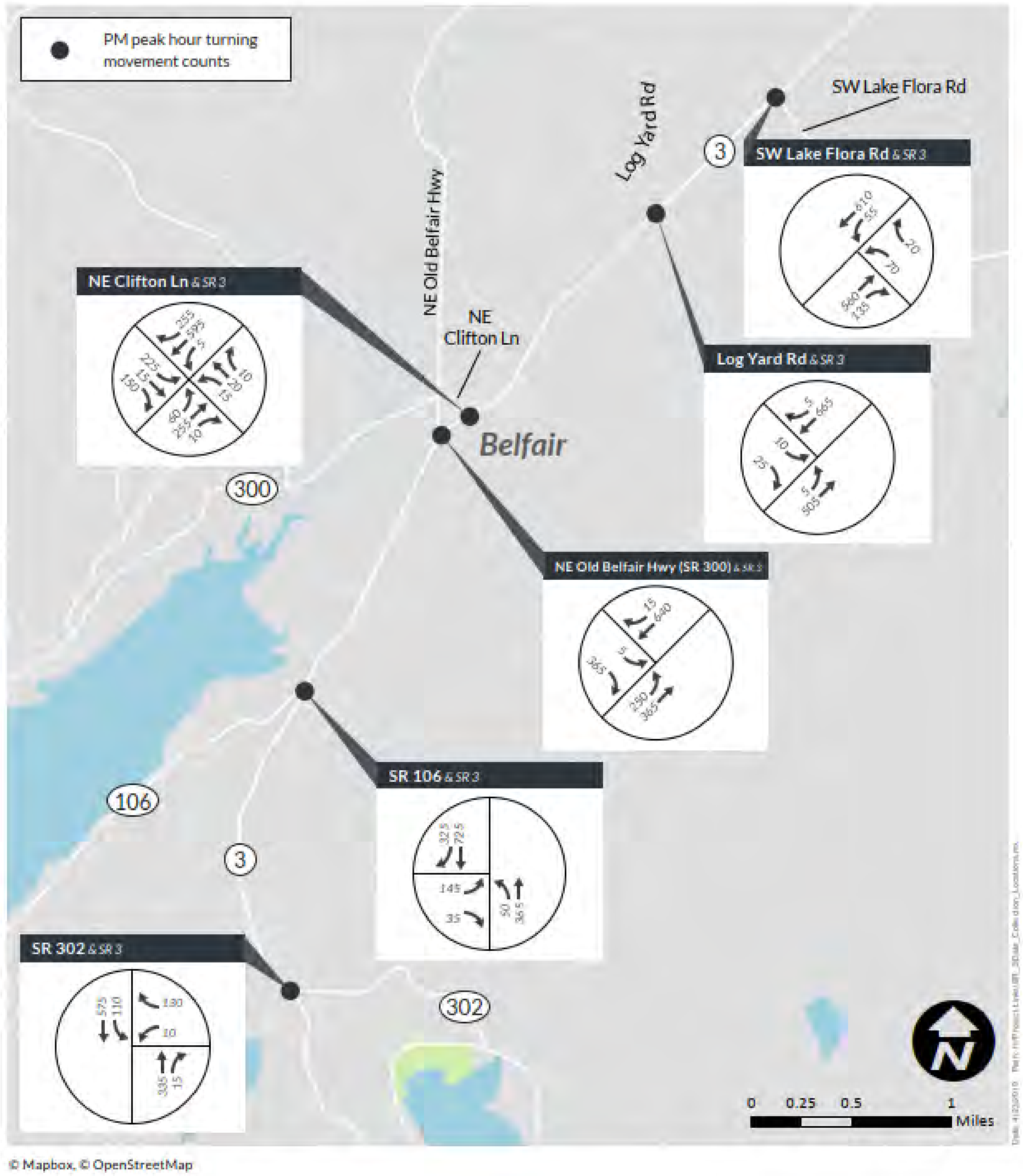


Figure 3-3. 2019 Existing PM Peak Hour Volumes

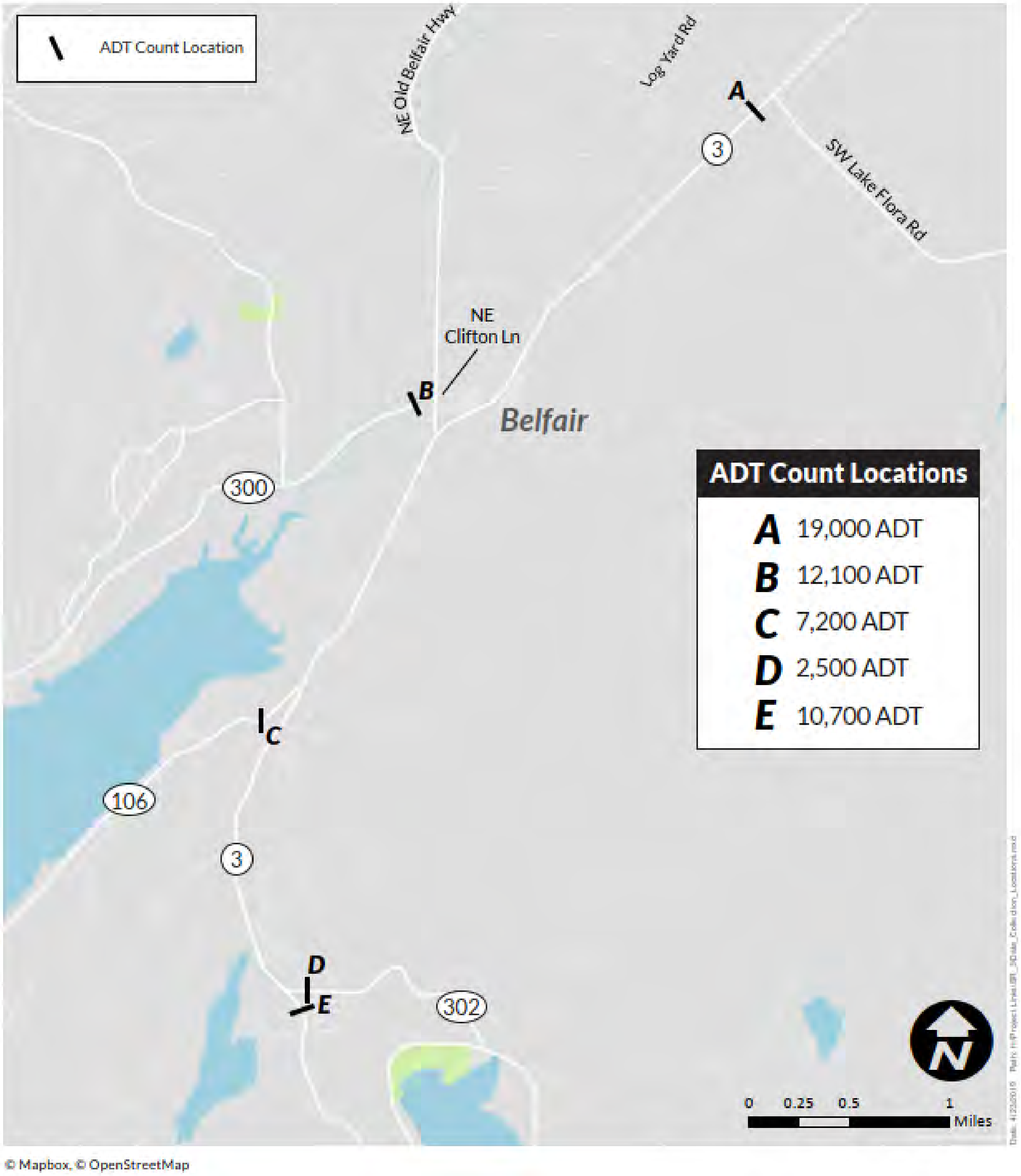


Figure 3-4. 2019 Existing Midweek Average Daily Traffic

3.3.3 Intersection Operations Analyses

Traffic operations were measured using the LOS method, which is defined in terms of delay on a scale ranging from A to F, depending on the delay conditions at the intersection. 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.

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 3-3 summarizes the criteria used to define LOS.

Traffic operations during the AM and PM peak hours were analyzed for the 2019 existing year. The operations analysis for the study intersections used the software program Synchro (version 10) for signalized and unsignalized intersections.[3] Synchro is a macroscopic analysis and optimization software application that supports the Transportation Research Board Highway Capacity Manual's methodology (2000, 2010, and 6th Edition methods) for signalized and unsignalized intersections. The Synchro model was calibrated to accurately reflect existing congestion during the PM peak commute.

Table 3-3. Level of Service Criteria

LOS[a]	Signalized Intersections (seconds per vehicle)	Unsignalized Intersections (seconds per vehicle)	Traffic Flow Characteristics (seconds per vehicle)
A	< 10	< 10	Virtually free flow; completely unimpeded
B	> 10 and < 20	> 10 and < 15	Stable flow with slight delays; less freedom to maneuver
C	> 20 and < 35	> 15 and < 25	Stable flow with delays; less freedom to maneuver
D	> 35 and < 55	> 25 and < 35	High density but stable flow
E	> 55 and < 80	> 35 and < 50	Operating conditions at or near capacity; unstable flow
F	> 80	> 50	Forced flow; breakdown conditions

SOURCE: Highway Capacity Manual 2010 (Transportation Research Board 2010)
[a] The LOS criteria are based on control delay, which includes initial deceleration delay, final deceleration delay, stopped delay, and queue move-up time.

[3] The software was consistent with most recent WSDOT Synchro protocol (August 2018).

LOS operation standards for the study intersections differ between Kitsap and Mason County intersections. Based on Puget Sound Regional Council (PSRC) standards for Highways of Statewide and Regional Significance, the LOS standard for the SR 3/Lake Flora intersection is LOS D. For the remaining study intersections, all of which are in Mason County, the WSDOT standard is LOS C, consistent with the standard for rural highways of statewide significance.

SR 3 in Belfair regularly experiences congestion during peak commute hours. During the PM peak, commute queues often extend through Belfair and as far north as Log Yard Road. SR 3 also experiences seasonal fluctuations from tourist traffic and recreational users, resulting in congested conditions on Friday afternoons and summer weekends.

As shown in Table 3-4, the intersections of SR 3 and NE Clifton Lane and SR 3 and Old Belfair Highway do not meet LOS standards during either of the existing AM and PM peak hours.

Table 3-4. Existing Year (2019) AM and PM Peak Hour Intersection Operations

			AM Peak Hour			PM Peak Hour		
Intersection on SR 3	Traffic Control[a]	LOS Standard	LOS[b]	Delay (sec/veh)	V/C Ratio[c]	LOS	Delay (sec/veh)	V/C Ratio
Lake Flora Road	Stop Sign[a]	D	C	24	0.34	D	27	0.33
Log Yard Road	Stop Sign	C	C	17	0.11	C	16	0.06
NE Clifton Lane	Signal	C	D	40	1.02	E	76	1.28
Old Belfair Highway	Stop Sign	C	E	42	0.45	F	54	0.90
SR 106	Signal	C	B	18	0.66	C	23	0.94
SR 302	Stop Sign	C	C	15	0.24	B	13	0.24

[a] Stop controlled on minor leg(s).

[b] For unsignalized intersections, the LOS and delay are reported for the worst movement. For signalized intersections, LOS and delay are reported for the intersections as a whole.

[c] V/C ratio provided represents v/c ratio of the worst approach at the intersection.

3.3.4 Travel Times

Existing AM and PM peak travel times on SR 3 through the study area were collected from three sources: field observations, Google Maps, and the Synchro model. Travel time was collected in the field on May 1, 2019, which coincided with the collection of traffic counts and tube counts in the study area. Dash camera video was taken during the travel time runs. The video of the travel time run provides context and allows congested segments of the roadway to be identified, but because it provides only a single data point, travel times collected via the dash camera video may differ from typical conditions.

Google Maps is a web-based mapping service that can be used to provide typical travel times between two points. The travel time for Google Maps is often presented as a range of times because the travel time data is aggregated. For the SR 3 Freight Corridor study, the lowest and highest travel times from the peak hour on a typical midweek day were used.

Synchro travel times were calculated using signal delay and the link travel time (link distance divided by posted speed limit). While Synchro does account for the delay at signals, the model tends to underestimate delay when approach volumes are over capacity. Because of these limitations, the Synchro travel times typically underestimate travel times in comparison to field observations and Google Maps travel times. Table 3-5 shows the northbound and southbound travel times from each source.

Table 3-5. Existing Travel Time along SR 3 Freight Corridor between Lake Flora Road and SR 302

Travel Time Method of Collection	AM Peak Hour Northbound Direction (mins)	AM Peak Hour Southbound Direction (mins)	PM Peak Hour Northbound Direction (mins)	PM Peak Hour Southbound Direction (mins)
Travel Time via Synchro	7	9	7	11
Travel Time via Dashcam	9	11	8	17
Travel Time via Google Maps (Low–High)[a]	10	10	9 – 13	10 – 21

[a] Google Maps results show a range of values for the PM peak hour due to congestion in the area. Google Maps does not show a range for the AM peak hour, as travel times tend to be more consistent during this time period.

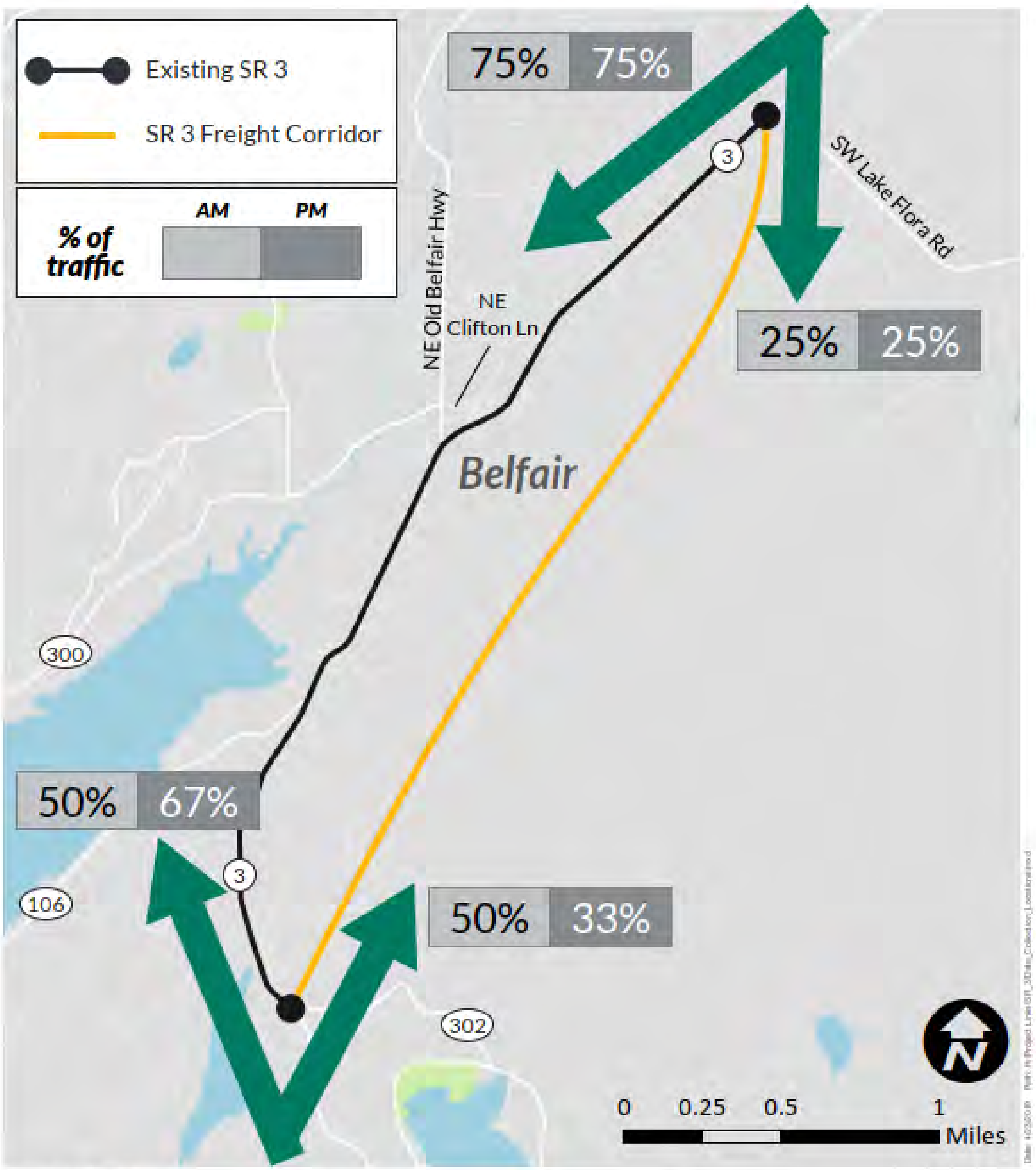
3.3.5 Origin Destination Analysis

For this study, origin destination (OD) data were collected using StreetLight Data. StreetLight Data is a company that provides data from smartphones and other devices with location-based services to track to the overall origin and destination of trips through an area. Survey data from a 12-month period (February 2018 through January 2019) were used to estimate vehicle origins and destinations in the study area. OD data were collected at:

- SR 302 east of SR 3
- SR 106 west of SR 3
- Old Belfair Highway west of SR 3
- NE Old Belfair Highway north of Old Belfair Highway
- SR 3 North of Lake Flora Road
- SR 3 South of SR 302

Figure 3-5 illustrates the percentage of vehicles recorded with Streetlight Data that passed completely through Belfair. During midweek (Tuesday through Thursday) the percentage of vehicles traveling northbound between SR 302 and Lake Flora Road ranged from 33 percent to 50 percent, depending on the time of day. In the southbound direction, the percentage of traffic is consistent at 25 during midweek.

Data were also collected and reported for the Friday PM peaks and average weekend days at various times throughout the year. The data show that higher percentages of northbound traffic than southbound traffic pass completely through Belfair for all time periods reported, except for the average Friday PM peak hour, where the percentage of southbound traffic traveling from Lake Flora Road to SR 302 is higher than the northbound (39 percent versus 28 percent).



© Mapbox, © OpenStreetMap

Figure 3-5. 2019 Existing Origin/Destination Travel Patterns

3.4 Collision History / Safety Analysis

Under 23 United States Code §148 and 23 United States Code §407, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

A basic safety level analysis of the corridor was performed that assessed current safety performance, summarized recent crash history, and reported on any major contributing factors to fatal and serious injury crashes. Crash data were collected between January 1, 2018, through December 31, 2022, on the SR 3 corridor between MPs 22.81 and 29.49. During this time, 402 crashes were reported, of which 72 occurred at the study intersections.

Table 3-6 summarizes crashes at intersections and along the SR 3 study area segment by severity and type. Crash records indicate the type and severity of crashes appears to be consistent with congested urban conditions in other areas of Washington State. Rear-end and property damage only (PDO) or non-injury crashes account for the greatest number of crashes. The number of crashes tends to increase under congested conditions but the severity of those crashes is generally lower, due to lower speeds.

3.4.1 Intersection Collisions

Between January 2018 and December 31, 2022, one serious injury crash occurred at a study area intersection. There were no fatal intersection crashes.

The serious injury crash occurred at the Lake Flora Rd intersection (MP 28.78). This crash is listed as an angle collision with a driver attempting to turn left. Contributing factors include one vehicle not granting the right-of-way to the vehicle traveling on SR 3 and the other vehicle exceeding the posted speed limit. This crash also involved a motorcycle.

The types of crashes that occurred most frequently at the study intersections were rear-end crashes and left-turn angle crashes, which accounted for 49 percent and 15%, respectively, of the total intersection crashes. The intersections of SR 3/NE Clifton Lane (MP 26.55) and SR 3/Lake Flora Road (MP 28.78) had the highest crash rates in the study area with 3.0 and 5.0 crashes per year, respectively.

Table 3-6. Historical Crash Rates and Crashes Summarized by Severity and Type for Study Intersections and Segments

Intersection/ Segment	Crashes per Year	Total Crashes	Crash Severity				Crash Type										
			Fatal	Serious Injury	Minor or Possible Injury	PDO[a]	Head-On	Angle	Sideswipe	Rear-End	Approach Turn	Fixed Object	Pedalcyclist	Pedestrian	Animal Related	Off-Road[b]	Other
Intersection Crashes																	
(1) SR 3/Lake Flora Road	3.0	15	0	1	5	9	0	5	0	1	0	4	0	0	0	5	0
(2) SR 3/Log Yard Road	0.6	3	0	0	0	3	0	1	0	2	0	0	0	0	0	0	0
(3) SR 3/NE Clifton Lane	5.0	25	0	0	7	18	0	3	0	15	6	0	1	0	0	0	0
(4) SR 3/Old Belfair Highway	2.0	10	0	0	0	10	0	2	1	4	0	1	0	0	0	1	1
(5) SR 3/SR 106	1.6	8	0	0	1	7	0	0	0	8	0	0	0	0	0	0	0
(6) SR 3/SR 302	2.2	11	0	0	2	9	0	0	0	5	2	2	0	0	0	2	0
Intersection Total	14.4	72	0	1	15	56	0	11	1	35	8	7	1	0	0	8	1
Segment Crashes[c]																	
SR 3: Lake Flora Road to NE Clifton (MP 29.00 to 26.55)	28.0	140	1	2	23	114	2	35	11	51	10	6	0	0	13	6	6
SR 3: NE Clifton to SR 106 (MP 26.55 to 24.91)	26.6	133	0	4	17	112	2	25	7	65	8	11	1	2	1	6	5
SR 3: SR 106 to SR 302 (MP 24.91 to 23.26)	11.4	57	1	1	10	45	2	2	3	20	1	12	0	0	4	11	2
Segments Total	66.0	330	2	7	50	271	6	62	21	136	19	29	1	2	18	23	13

Source: January 2018 – December 2022 data from WSDOT Crash Database

[a] PDO = Property damage only

[b] Off-Road crashes refer to crash types involving roadway ditches, embankments, overturned vehicles, or crash cushions.

[c] Segment crashes refer to crashes on SR 3 between MP 23.26 and MP 29.00 that were not related and/or did not occur at a study intersection.

3.4.2 Segment Collisions

On SR 3 segments, 330 crashes were reported with the majority occurring between Lake Flora Road at MP 28.78 and NE Clifton Lane at MP 26.55 (42 percent), and between NE Clifton Lane and SR 106 at MP 24.91 (40 percent).

Two fatal crashes occurred in the study area during the study period. One was at MP 24.21, about halfway between SR 302 and SR 106. This was a fixed object collision that occurred negotiating a curve but did not list a contributing factor. The other fatal crash occurred at MP 26.78, north of NE Clinton Ln at a driveway. It was an angle crash that occurred during wet roadway conditions.

Seven of the segment crashes were serious injury crashes. The SR 3 milepost where the crash occurred and the type of crash are listed below:

- MP 24.38 – off-road collision involving a roadway ditch, involved alcohol
- MP 25.16 – opposite-direction sideswipe collisions, involved alcohol
- MP 25.20 – fixed object collision while operating defective equipment
- MP 25.63 – fixed object collision, involved alcohol
- MP 26.01 – angle collision with a failure to grant right-of-way to oncoming vehicle
- MP 26.72 – angle collision with a failure to grant right-of-way to oncoming vehicle
- MP 28.98 – rear end collision involving a distracted driver

The top contributing factor noted in these serious injury crashes included alcohol (43 percent). Other contributing factors also included exceeding the stated/safe speed (29 percent), failure to grant right-of-way (29 percent).[4]

Similar to the crashes reported at the study area intersections, rear-end crashes were the most common crash along the corridor (41 percent). The majority of rear end crashes were attributed to following too closely (46 percent) followed by speeding (24 percent). Overall, for segment crashes, the key contributing factors were following too closely, distraction/inattention, failure to grant right-of-way/disregard traffic control, and speeding. The factors accounted for over 62 percent of segment crash contributing factors. Additionally, of the 330 crashes not related to the study intersections (segment crashes), approximately 25 percent occurred at or were related to driveways in the study corridor.

[4] More than one contributing factor was attributed to some of the crashes.

4. Potential Effects of the Project

4.1 Direct Effects

4.1.1 Construction impacts

Under a No-Build alternative, direct effects such as temporary traffic disruption due to construction would not occur. Noise, air quality, water quality, and other construction related direct effects would likewise be absent. However, travelers would continue to experience congestion and delay during peak periods. Access to and from business and other services would continue to be difficult as gaps between vehicle platoons progressing through the corridor become nonexistent.

Direct effects of the Build alternative, i.e. the Project Action or the SR 3 Freight Corridor would entail temporary construction effects. Travelers would experience construction related traffic delay and may need to take detour routes for a period of time. Since the majority of the Freight Corridor alignment is through forested land, a major portion of the work would not lead to direct disruption to traffic. There would be an increase in traffic on existing streets as construction workers go to work sites or bring in and remove equipment and materials. Temporary closures of roadway segments may be required while the new corridor is connected to the existing SR 3 alignment. Other than minor increases in travel times, no impacts to transit services through the corridor are expected. There may be temporary air quality, water quality, and noise effects due to construction, but on-site mitigation measures and standard procedures should offset the effects and render the effects not significant.

Direct benefits of constructing the freight corridor include creation of construction jobs created and increase to network capacity at the completion of the project.

4.1.2 Project impacts

The future transportation network without the SR 3 Freight Corridor would mean the network would continue to be capacity constrained, particularly SR 3 north of NE Clifton Lane. In 2050, the travel delay at many of the key intersections associated with the No-Build alternative would fail. Travel demand modeling and traffic operations analysis results provide the basis for evaluating the long term and cumulative effects of the Project Action relative to the No-Build condition.

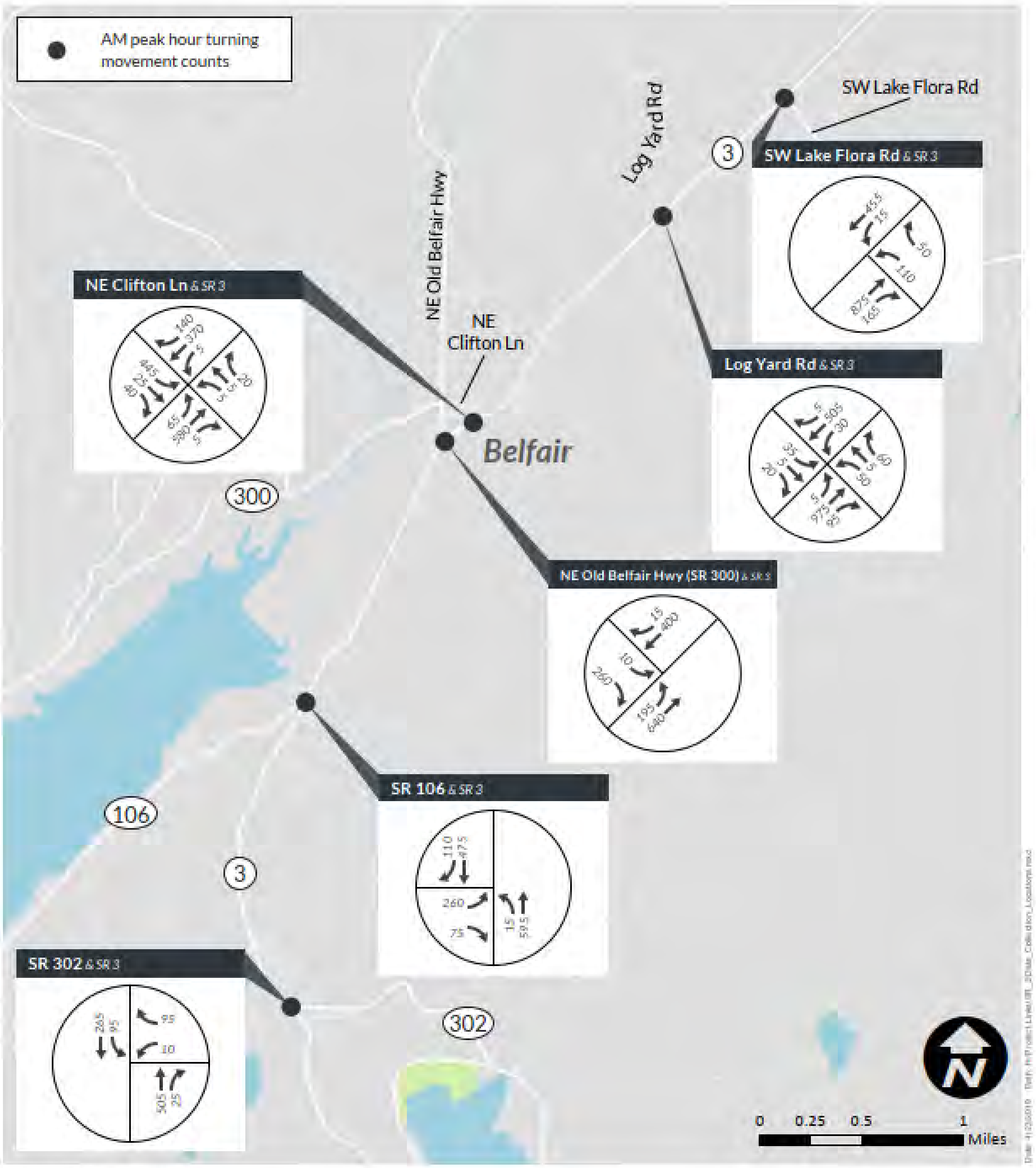
A number of network performance measures related to the direct effect of the SR 3 Freight Corridor alternative were measured, including:

- Roadway traffic volumes
- Route travel times
- Intersection traffic operations

4.1.2.1 Forecast Roadway Traffic Volumes

Travel forecasts along SR 3 were estimated using a combination of historical growth and peripheral travel demand data from PSRC and SR 16 Travel Demand Models. Historical data about SR 3 from the past 10 years show an average growth rate of 2 percent for the AM peak hour and 1 percent for the PM peak hour. These growth rates were used to estimate the 2028 Build volumes.

In addition to historic growth, the 2050 forecast assumed buildout for the master plan for the PSIC, as well as additional development in the Belfair UGA from future Kitsap County connections to the SR 3 Freight Corridor. With these assumptions, 2050 average annual growth in the SR 3 Freight Corridor is forecast to exceed 3 percent in the AM peak hour and would average nearly 5 percent annual growth in the PM peak hour. **Figures 4-1 through 4-4** illustrate the 2028 and 2050 AM and PM peak hour forecasted volumes.



© Mapbox, © OpenStreetMap

Figure 4-1. 2028 AM Peak Hour No-Build Volumes

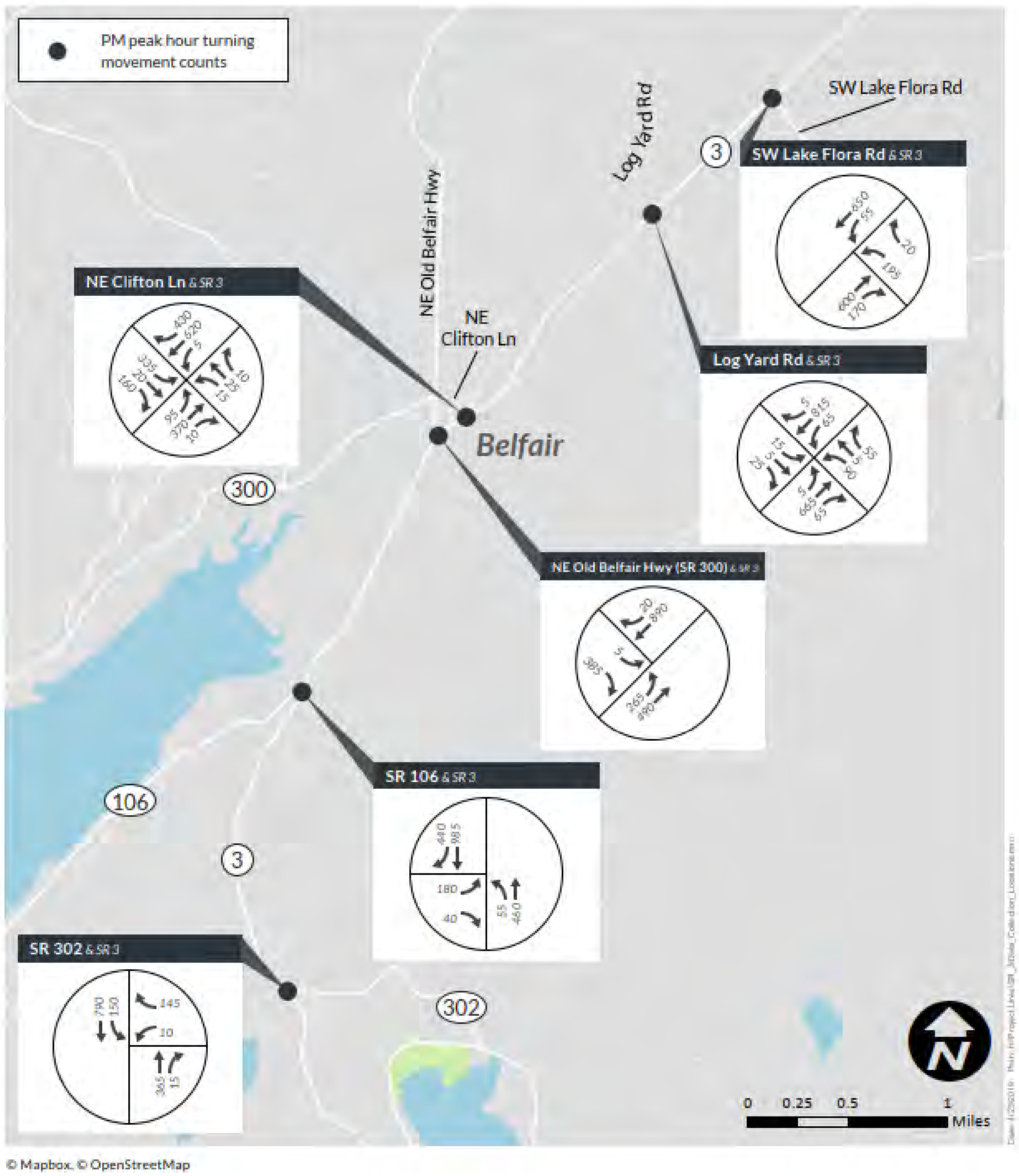


Figure 4-2. 2028 PM Peak Hour No-Build Volumes

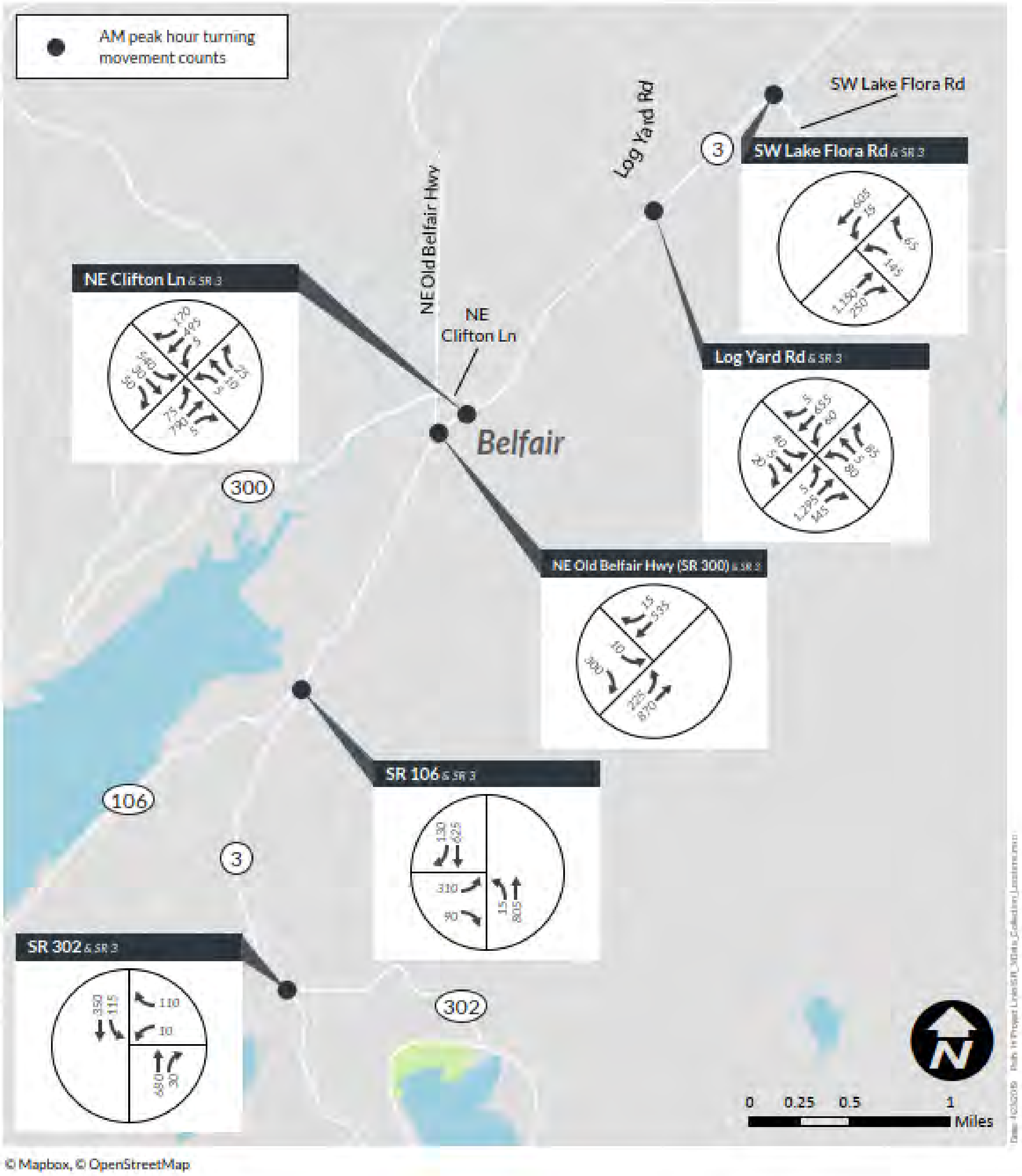


Figure 4-3. 2050 AM Peak Hour No-Build Volumes

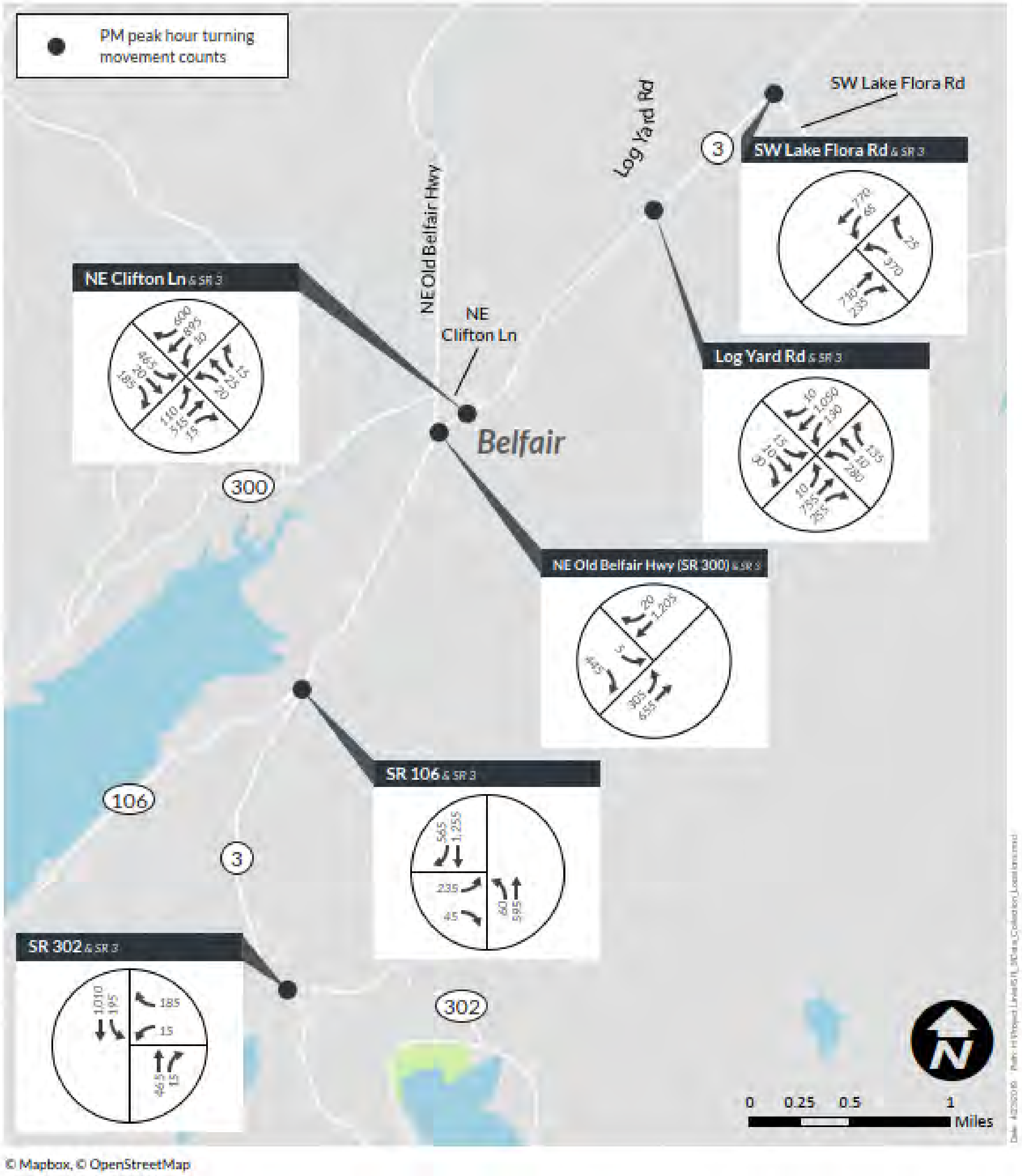


Figure 4-4. 2050 PM Peak Hour No-Build Volumes

Figure 4-5 illustrates the forecast percentage of AM and PM peak hour traffic that is expected to use the SR 3 Freight Corridor during both the 2028 and 2050 years. The percentages are based on output from the travel demand models. The percentage of traffic using the SR 3 Freight Corridor is expected to increase over time to a forecast of approximately 45-68 percent by the 2050 AM and PM peak hours, depending on direction. Trip distribution is expected to change compared to existing patterns based on forecasted in-fill development around the new freight corridor.

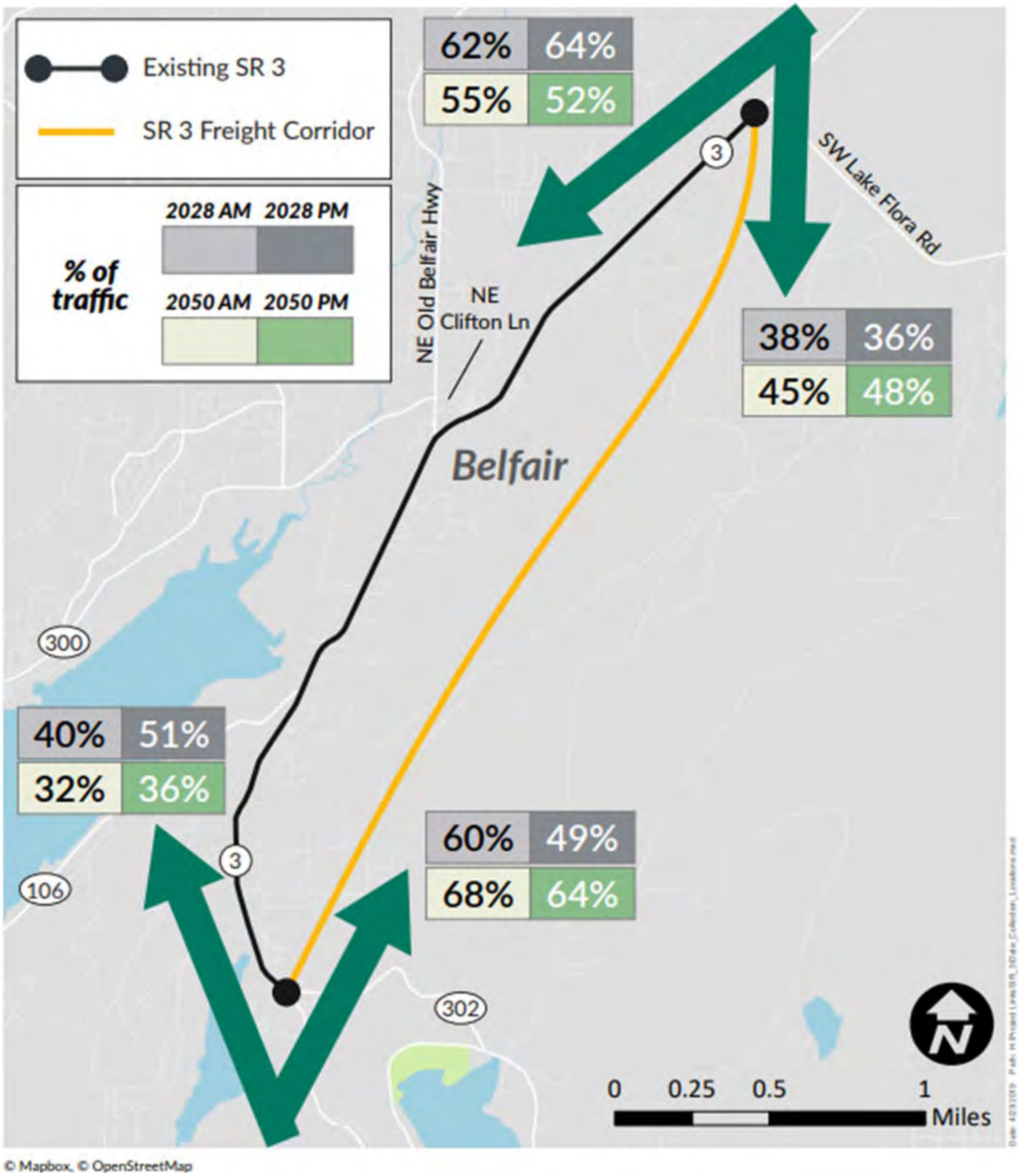


Figure 4-5. Forecasted Peak Hour Travel Patterns

Table 4-1 shows the forecast change in traffic volumes for the existing mainline SR 3 at selected locations for the No-Build and Project Action alternatives. The forecast shows there is a significant reduction in 2050 bi-directional PM peak hour traffic volumes on the existing SR 3 corridor with the construction of the SR 3 Freight Corridor when compared to the No-Build conditions. This reduction in traffic volumes along the existing SR 3 corridor would help reduce future traffic congestion and queuing through Belfair.

Table 4-1. Change in SR 3 Bi-Directional Volumes - 2050 PM Peak Hour Traffic Forecast

Location	SR 3 No-Build	SR 3 with Freight Corridor	% Change
SR 3, South of Lake Flora Rd	2,085	1,455	-43%
SR 3, North of NE Old Clifton Rd	2,500	1,845	-36%
SR 3, South of Old Belfair Hwy	2,610	1,845	-41%
SR 3, North of SR 106	2,650	1,950	-36%

4.1.2.2 Forecast Route Travel Times

Future travel times on the existing SR 3 and the proposed SR 3 Freight Corridor were estimated for both the 2028 and 2050 future analysis years. Synchro travel times are calculated using signal delay and the link travel time (link distance divided by posted speed limit). For the Project Action alternative, roundabouts were assumed at the north and south end connections. Delay for roundabouts was included in the estimates of the Project Action alternative.

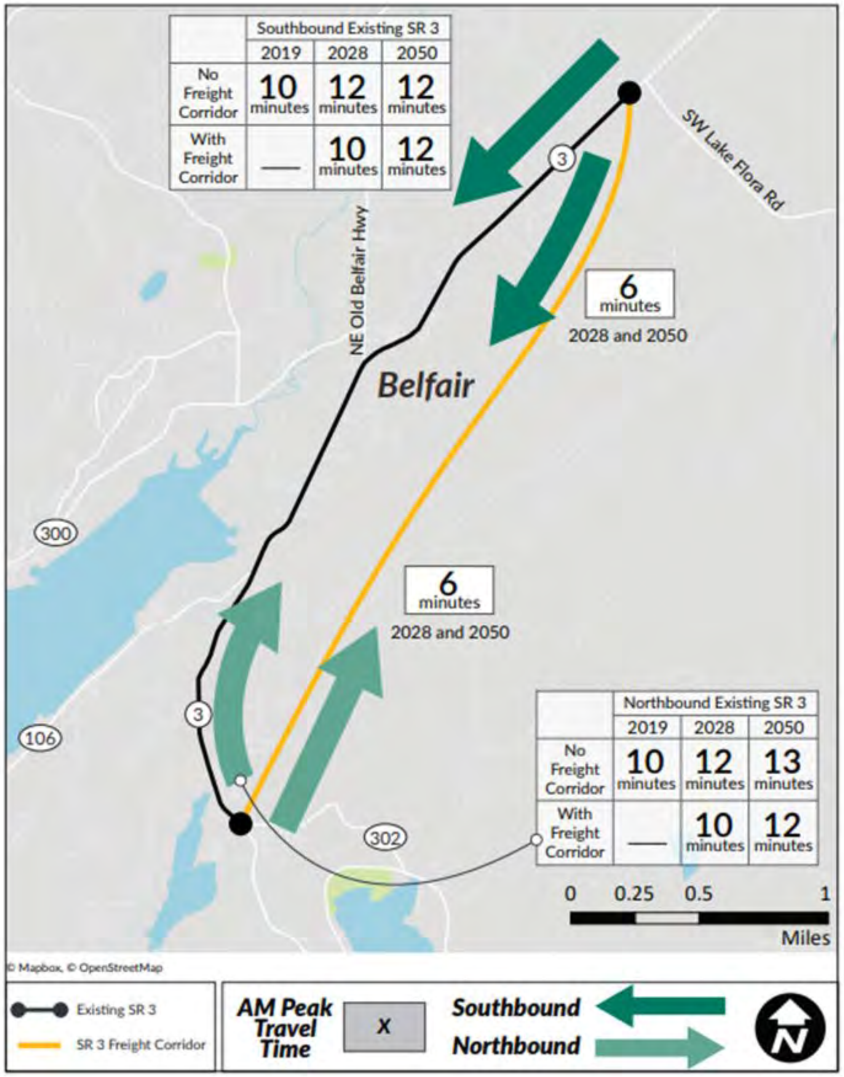
As shown in Figure 4-6, the estimated travel time on the new SR 3 Freight Corridor is expected to be six minutes in either direction, cutting travel times for regional through-traffic by half or more. Additionally, with the SR 3 Freight Corridor removing traffic from existing SR 3, travel times on the existing SR 3 corridor are expected to be five minutes faster in the 2028 PM peak hour and 8 minutes faster by the 2050 PM peak hour, as compared with No-Build conditions.

4.1.3 Intersection Traffic Operations

WSDOT screens and evaluates intersection control alternatives to determine the best possible intersection type and design for a given location. The evaluation considers multiple factors, including project needs, feasibility (e.g. available right-of way, environmental concerns, etc.), operations, safety, and context.

Future traffic operations for the intersections along the SR 3 existing corridor were forecast and intersection control alternatives evaluated for the north and south endpoints of the proposed SR 3 Freight Corridor. The new end connections were evaluated for signalized and roundabout operations. Operations for the signalized alternative utilized the software program Synchro 10. Operations for the roundabout alternatives used Sidra 8, consistent with WSDOT Sidra Policy.

PSRC's standard for Highways of Statewide and Regional Significance is LOS D for signalized operations. Roundabout operation standards are based on WSDOT Sidra Policy. Roundabouts with a v/c ratio between 0.85 to 0.90 range are considered to operate within WSDOT standards.



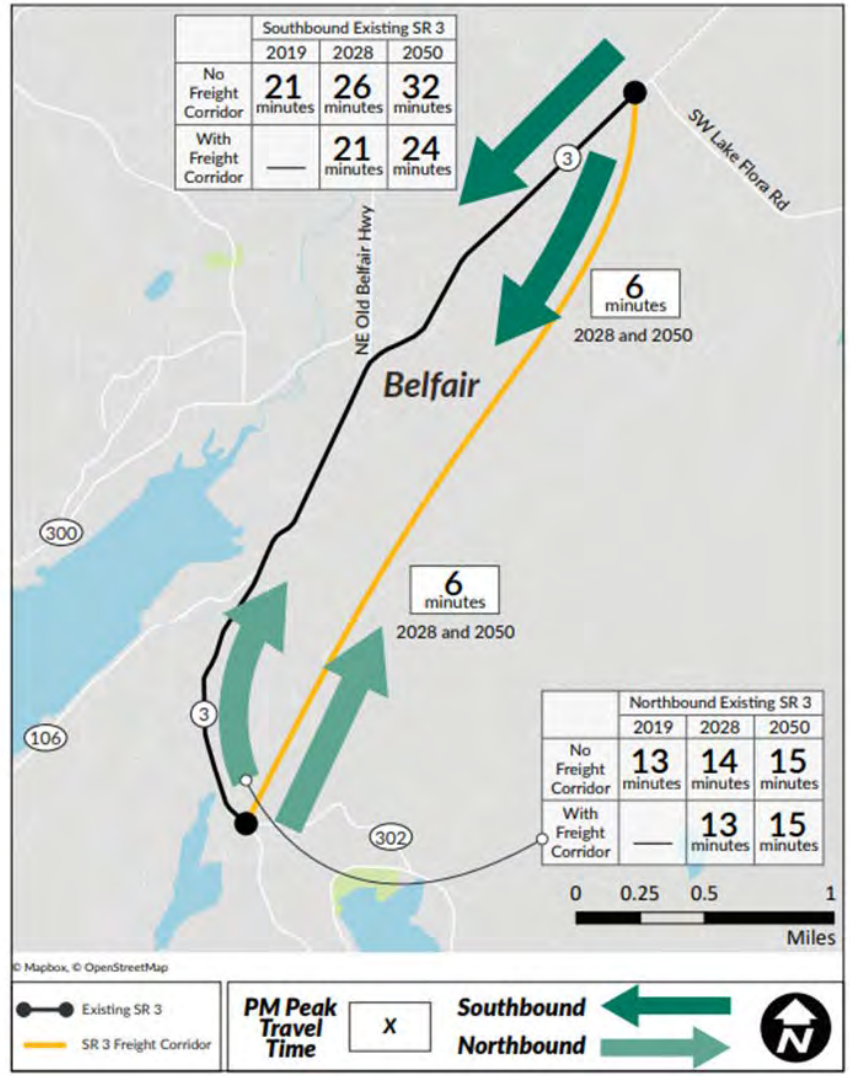


Figure 4-6. Future Travel Times

4.1.3.1 Local Intersection Operations

Tables 4-2 and 4-3 show the forecast LOS at intersections in the study area, with the exception of intersections at SR 302 and Lake Flora Road, where the SR 3 Freight Corridor would reconnect with the existing SR 3. Alternatives and LOS for those connections are discussed in the following sections.

Redistribution of traffic to the SR 3 Freight Corridor would reduce traffic volumes along the existing SR 3, improving both LOS and congestion at study area intersections. The intersections of SR 3/Old Belfair Highway and SR 3/NE Clifton Lane are still forecast to operate below standard in the Project Action alternative, but with considerably less delay than under the No-Build alternative.

Table 4-2. 2028 AM and PM Peak Hour Intersection Operations

Peak Hour	Intersection on SR 3	Traffic Control	2028 No-Build			2028 Build		
			LOS[a]	Delay (sec/veh)	V/C Ratio[b]	LOS	Delay (sec/veh)	V/C Ratio
AM	SR 3 and Log Yard Road	Roundabout[c]	A	6	0.89	A	6	0.53
	SR 3 and NE Clifton Lane	Signal	E	60	-	D	40	-
	SR 3 and Old Belfair Highway	Stop Sign[d]	F	85	-	C	25	-
	SR 3 and SR 106	Signal	B	19	-	B	17	-
PM	SR 3 and Log Yard Road	Roundabout	A	6	0.75	A	6	0.52
	SR 3 and NE Clifton Lane	Signal	F	106	-	D	42	-
	SR 3 and Old Belfair Highway	Stop Sign	F	>180	-	F	58	-
	SR 3 and SR 106	Signal	E	73	-	C	21	-

[a] For unsignalized intersections, the LOS and delay are reported for the worst movement. For signalized intersections, LOS and delay are reported for the intersections as a whole.
[b] V/C ratio provided represents v/c ratio of the worst approach at the intersection
[c] Plans for roundabout to be constructed at SR 3 and Log Yard Road prior to 2028
[d] Stop controlled on minor leg(s)

Table 4-3. 2050 AM and PM Peak Hour Intersection Operations

Peak Hour	Intersection on SR 3	Traffic Control[a]	2050 No-Build			2050 Build		
			LOS[b]	Delay (sec/veh)	V/C Ratio[c]	LOS	Delay (sec/veh)	V/C Ratio
AM	SR 3 and Log Yard Road	Roundabout[d]	D	39	1.11	A	6	0.68
	SR 3 and NE Clifton Lane	Signal	F	128	-	E	79	-
	SR 3 and Old Belfair Highway	Stop Sign	F	>180	-	F	61	-
	SR 3 and SR 106	Signal	C	31	-	B	20	-
PM	SR 3 and Log Yard Road	Roundabout	C	29	1.08	A	9	0.72
	SR 3 and NE Clifton Lane	Signal	F	>180	-	F	158	-
	SR 3 and Old Belfair Highway	Stop Sign	F	>180	-	F	>180	-
	SR 3 and SR 106	Signal	F	>180	-	D	43	-

[a] Stop-sign= stop sign controlled on minor leg(s).
[b] For unsignalized intersections, the LOS and delay are reported for the worst movement. For signalized intersections, LOS and delay are reported for the intersections as a whole.
[c] V/C ratio provided represents v/c ratio of the worst approach at the intersection.
[d] Plans for roundabout to be constructed at SR 3 and Log Yard Road prior to 2028.

4.1.3.2 North and South End Connections

The north end connection of the SR 3 Freight Corridor to SR 3 would be a single-lane roundabout near the intersection of Lake Flora Road. The new connection would consist of four legs: SR 3 connecting north to Gorst, SR 3 connecting west to Belfair, the new SR 3 Freight Corridor, and Lake Flora Road, as shown in Figure 4-7. Local access connections would be provided at Lake Flora Road, northwest of the new intersection. The design includes a slip lane that avoids the roundabout and provides direct access to the business loop. This design incorporates a footprint able to expand to a multi-lane roundabout to accommodate future growth. Operation results for 2028 and 2050 conditions are shown in Table 4-4.

Table 4-4. Future Peak Hour Operations – North end Connection at Lake Flora Road Intersection

	AM Peak Hour						PM Peak Hour					
	2028 Build			2050 Build			2028 Build			2050 Build		
Intersection Control	LOS	Delay (sec/veh)	V/C Ratio	LOS	Delay (sec/veh)	V/C Ratio	LOS	Delay (sec/veh)	V/C Ratio	LOS	Delay (sec/veh)	V/C Ratio
Roundabout	B	9	0.62	E	61	1.37	A	9	0.69	E	70	1.25

The south end connection would include two single-lane roundabouts as shown in Figure 4-8. The two single-lane roundabouts would provide improved connections to SR 3 and local roadways as compared to No-Build conditions while minimizing potential impacts to adjacent 4(f) properties, stream crossings and wetlands. They would provide access to North Mason High School and E Belwood Lane and improve the connections southbound connection on SR 3 toward Allyn. The design also incorporates separated multi-use pathways. Operation results for 2028 and 2050 conditions are shown in Table 4-5.

Table 4-5. Future Peak Hour Operations – Southern Endpoint

	AM Peak Hour						PM Peak Hour					
	2028 Build			2050 Build			2028 Build			2050 Build		
Intersection Control	LOS	Delay (sec/veh)	V/C Ratio	LOS	Delay (sec/veh)	V/C Ratio	LOS	Delay (sec/veh)	V/C Ratio	LOS	Delay (sec/veh)	V/C Ratio
Split RAB – West RAB	A	6	0.56	A	7	0.71	A	8	0.68	B	11	0.85
Split RAB – East RAB	A	7	0.43	A	8	0.55	A	6	0.33	A	7	0.47

Figure 4-7. North End Connection at Lake Flora Road

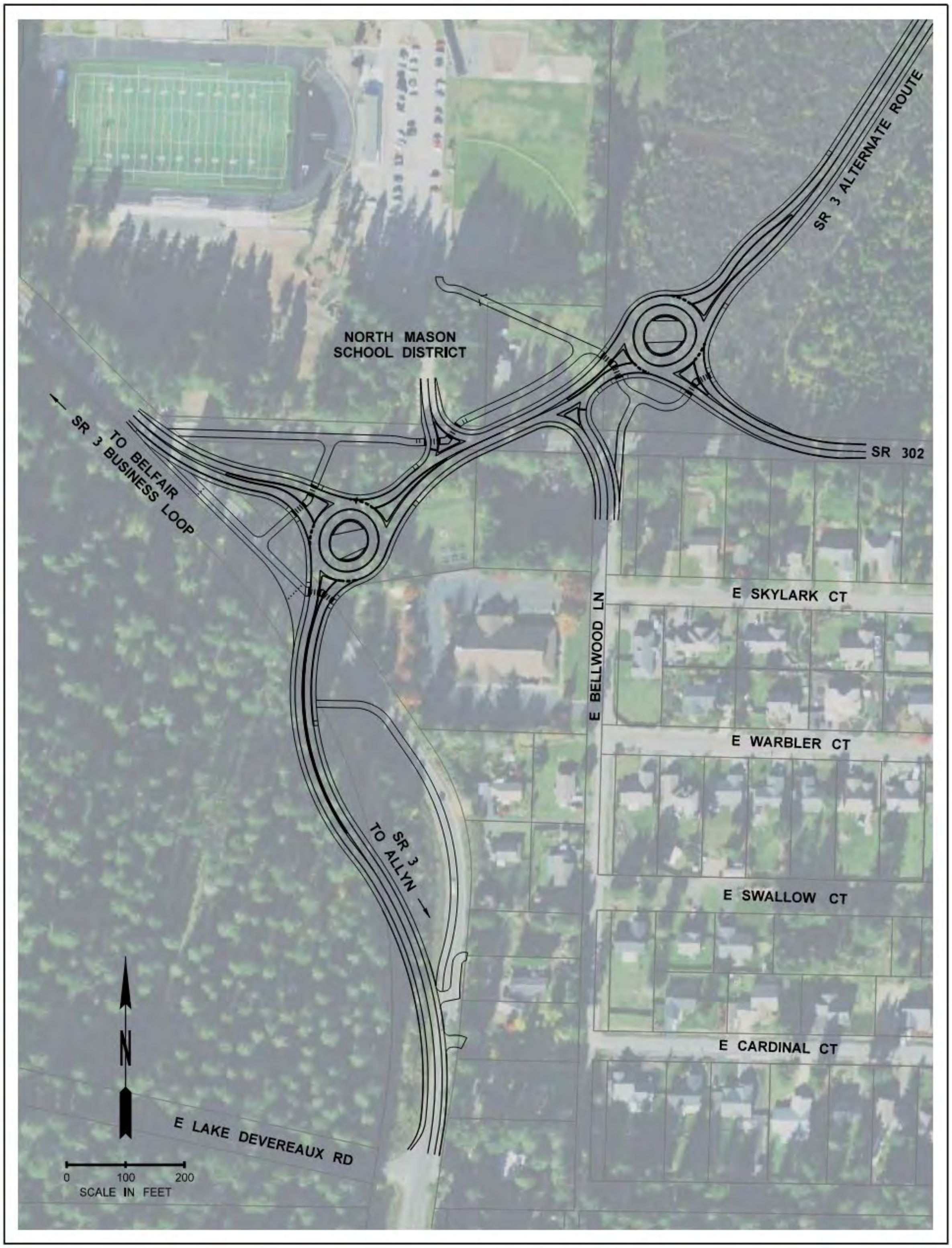


Figure 4-8. South End Connection at SR 302

4.1.4 Future Highway Traffic Operations

Consistent with the previous EA published in 2013, a mainline level of service analysis for the entire SR 3 Freight Corridor was performed. The software program HCS 7 was used to evaluate both the existing one-mile highway segment north of Lake Flora Road and the proposed SR 3 Freight Corridor south of Lake Flora Road. Table 4-6 shows the highway operations for the proposed Freight Corridor.

Table 4-6. Future Conditions PM Peak Hour Highway Operations

	SR 3 without Freight Corridor			Future SR 3 Freight Corridor		
Year	Percent Time Spent Following (PTSF)[a]	LOS	V/C Ratio	Percent Time Spent Following (PTSF)[1]	Delay (sec/veh)	V/C Ratio
2019	77%	D	0.44	–	–	–
2028	79%	D	0.47	46%	B	0.14
2050	84%	E	0.55	78%	D	0.44

[a] Average time percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway (HCM 6th Edition, 2016).

In the Project Action alternative, the SR 3 Freight Corridor would operate at LOS B in 2028 and would operate at LOS D in 2050, with a similar v/c ratio as the existing SR 3 corridor through Belfair. Based on results of the operations analysis, a two-lane highway meets WSDOT standards for the mainline of the proposed SR 3 Freight Corridor.

4.1.5 The No-Build Future

The 2050 No-Build travel demand modeling show intersection and roadway congestion at several intersections in the study corridor. NE Clifton Lane and Old Belfair Highway are forecast to operate at LOS F during the AM peak and PM peaks. Additionally, SR 106 is forecast to operate at LOS F during the PM peak. The forecast delay for these intersections exceeds 180 seconds during both peaks, except NE Clifton Lane, where delay is forecast to be 128 seconds during the AM peak.

By 2050, the entire SR 3 corridor is forecast to operate at LOS E during the PM peak under the No-Build condition.

Failure to construct improvements in the corridor would result in additional congestion, increased duration of delay, longer travel times, exacerbation of safety issues, and potential impacts to air quality precipitated by idling engines in very long queues at signalized and minor street unsignalized intersections. Access to and from business and other services would become difficult as gaps between vehicle platoons progressing through the corridor become nonexistent.

Under the No-Build alternative, the heavier traffic flow of passenger cars, trucks, and recreational vehicles through Belfair would have implications with respect to aesthetics, noise pollution, air quality, commercial and retail activities, as well other considerations. Presumably, with heavier traffic volumes, access to and from unsignalized intersections and businesses may be an issue over a longer period, as the peak hour is elongated and spreads congestion through longer periods of the day.

4.1.6 The Project Alternative Future

The SR 3 Freight Corridor would serve multiple purposes including reduced congestion and increased safety on SR 3, provision of an alternate route for regional traffic, and promotion of economic vitality. It would improve intermediate and long-term regional transportation mobility on the SR 3 corridor in northeast Mason and southwest Kitsap counites. The project would improve regional travel times between Shelton and Bremerton, provide safe and reliable regional access to jobs, goods, and services, and provide for the efficient movement of freight.

A two-lane highway would move regional traffic and meets the forecasted traffic demand through the year 2050. It would improve movement of freight, reduce commute travel times between Kitsap and Mason counties, accommodate seasonal changes in traffic, and help reduce traffic congestion and queuing through Belfair.

The Project Action alternative has safety benefits for users. With reduced traffic volume resulting from diversion of regional through traffic to the freight corridor, the existing SR 3 mainline would experience less congestion and delay and improved travel times. Lower volumes would lessen exposure and are likely to ease congestion related rear-end collisions. With lower volumes, left turning movement would find more gaps to turn safely.

The design section for the proposed SR 3 Freight Corridor states that it would be a limited access facility. The cross-section would include two 12-foot lanes and two 8-foot shoulders that can accommodate bicyclist and pedestrians. Separate pedestrian and bicycle paths would not be included along this facility as part of this project.

The Project Action alternative would provide an alternate route during emergencies and for emergency services. Regional response time would likely improve.

The anticipated effect of the Project Action on transit operations is beneficial. Reduced congestion and delay would improve transit operations. Additionally, the bypass provides alternate faster regional transit routes.

4.2 Indirect and Cumulative Effects

According to CFR 1508.8, indirect effects are caused by the project but can be later in time or farther removed in distance from the project. The SR 3 Freight Corridor project would provide greater vehicle capacity and better travel times for regional traffic through the Belfair vicinity. Improved travel times would allow for growth in activities and associated travel connected to businesses, commercial enterprises, and residences served by SR 3 outside of Belfair that are particularly dependent on regional traffic. However, both Mason and Kitsap Counties come under the state’s Growth Management Act and have comprehensive planning in place to address the magnitude, form, and process associated with such land use changes. Therefore, no indirect impacts to traffic in or around the study area are predicted due to the Project Action.

According to CFR 1508.7, cumulative impacts are impacts on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Since no increase in total traffic as a result of the SR 3 Freight Corridor is predicted in or around the study area, beyond that which is already reflected in the forecast model, no contribution to cumulative traffic impacts in the area are predicted.

Further consideration about the indirect and cumulative impact of the SR 3 Freight Corridor project on land use changes can be found in the Land Use discipline report.

5. Mitigation and Conclusion

5.1 What the Required Project Would Achieve

5.1.1 What Existing and Future Transportation Needs Are Addressed

The proposed SR 3 Freight Corridor Project would provide a solution to the immediate and long-range regional transportation mobility and safety needs of the SR 3 corridor in northeast Mason and southwest Kitsap counties. It would provide a reliable regional route between Kitsap and Mason Counties. The SR 3 Freight Corridor would also reduce congestion and improve safety through Belfair and provide an alternate route for emergency vehicles. Implementation of this project would provide safe and reliable access to regional jobs, goods and services, and improve efficiencies for transit and other public service providers.

The two-lane facility on a new alignment would move regional traffic travelling between Shelton and Bremerton to a new roadway, bypassing Belfair. It would ensure efficient movement of freight, commute trips between Kitsap and Mason counties, accommodate seasonal influxes of tourist traffic, and serve general traffic needs through to the design year 2050. It would also serve as an alternate route during highway closures on existing SR 3 in Belfair.

5.2 Any Mitigation to Avoid or Minimize Adverse Effect

There are no significant transportation impacts due to the Project Action therefore mitigation measures for transportation are not necessary. However, due to growth forecast for the design year baseline conditions, transportation improvements would be necessary in the Belfair area to maintain service levels.

While mitigation measures are not necessary resulting from the Project Action, the following sections identify future improvements which may be required even with construction of the freight corridor.

5.2.1 SR 3 Freight Corridor Capacity

The horizon year (2050) identified for the project reflects the growth assumed in the local agency comprehensive plans and the growth (full build-out) assumed for the PSIC. Redistribution of traffic to the SR 3 Freight Corridor would reduce traffic volumes along the existing SR 3, improving both LOS and congestion at intersections along existing SR 3. The intersections at SR 3/Old Belfair Highway and SR 3/NE Clifton Lane are still forecast to operate below standard in the Project Action alternative, but with considerably less delay than under the No-Build alternative. The design for the north end connection at Lake Flora Road incorporates a footprint able to expand to a multi-lane roundabout to accommodate future growth.

5.2.2 Existing SR 3 Capacity

Depending on actual growth, highway segment LOS analysis for existing SR 3 through Belfair for 2050 baseline conditions (No-Build) show that the SR 3 corridor exhibits failing conditions. SR 3 mainline capacity increase may be needed to maintain service levels.

5.2.3 Intersection Control and Capacity

While the Project Action alternative has no significant impact on the existing SR 3 alignment through Belfair, intersection capacity improvements would be needed NE Clifton Lane and Old Belfair Highway to meet WSDOT LOS standards in the future. These needs are not due to the Project Action alternative, but by design year baseline (No-Build) forecast in the corridor. The Project Action alternative provides benefits through additional capacity and traffic volume reduction occurs at the existing SR 3 alignment through Belfair, as regional through traffic are diverted to the freight corridor.

Performance measures with the freight corridor such as traffic volume reduction through redistribution, reduced intersection delay and improved operating speeds, and improved travel time and LOS all are consistent with the purpose and need of the Project Action.

5.2.4 Local Connections

The Project Action would construct a new bypass highway around the Belfair community. It would be a limited access highway, however, the design would allow for two local connections between the Business Loop and the Freight Corridor, one at Romance Hill and one at the Kitsap County line, to facilitate local connections to Belfair and the Business Loop.

5.2.5 Findings and Conclusions

Analysis of the No-Build and the Project Action alternatives are documented in this report. Findings on the potential advantages and disadvantages for the No-Build and the Project Action alternatives are summarized below, followed by conclusions.

5.2.5.1 No-Build Alternative

Traffic volumes are forecast to grow through the design year (2050), resulting in congestion throughout the study corridor. Travel times would be greatly increased to a point where SR 3 would no longer be a viable freight route alternative. Intersection delay would be high and duration of congestion would last for hours.

Substantial and costly improvements would be needed to restore functional health of SR 3. Improvements could include widening the mainline and constructing capacity improvements at multiple intersections.

5.2.5.2 Project Action Alternative

Construction of the SR 3 Freight Corridor would meet the purpose and need of the Project Action. Improved travel time on the freight corridor and reduced delay at intersections on SR 3 would improve mobility and connectivity. The existing SR 3 alignment through Belfair would become a business loop with reduced traffic volumes, less delay, and improved travel times. Improved service levels would be achieved considering urban characteristics of the corridor, particularly through Belfair’s commercial core. The freight corridor would perform at an improved operating speed through 2050.

Mason County should consider improving local road connectivity and improving parallel routes to maximize the benefits of the bypass.

5.2.6 Conclusions

Failure to construct improvements is not a realistic alternative for the SR 3 corridor in the Belfair vicinity. However, substantial and costly improvements will be needed in order for SR 3 to function reasonably well in the 2050 forecast year.

The SR 3 Freight Corridor would divert trips away from existing alignment of SR 3 through Belfair. Depending on the location, intersection volumes may be reduced on the business loop anywhere between 36 and 43 percent in the PM peak hour.

Past studies demonstrate that population and commercial growth in the SR 3 corridor would eventually overwhelm the transportation facility. These studies support the concept of the freight corridor. This report confirms and augments previous analyses that support the purpose and need for a two-lane freight corridor. This study finds no significant transportation impacts due to the Project Action alternative.

6. References

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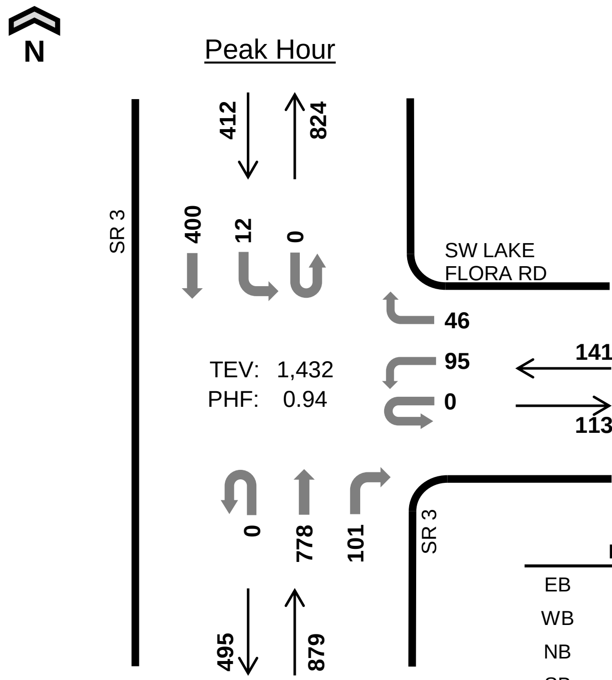
Appendix A

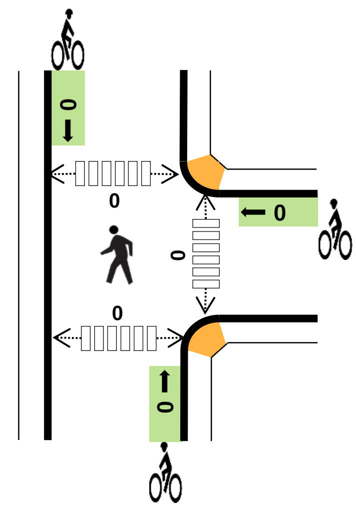
Existing Traffic Counts

SR 3
SW LAKE FLORA RD

Date: Wed, May 01, 2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:00 AM to 8:00 AM



	HV %:	PHF
EB	-	-
WB	2.1%	0.88
NB	3.6%	0.96
SB	6.1%	0.87
TOTAL	4.2%	0.94



Two-Hour Count Summaries

Interval Start	0				SW LAKE FLORA RD				SR 3				SR 3				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	24	0	9	0	0	185	27	0	3	73	0	321	0
7:15 AM	0	0	0	0	0	25	0	14	0	0	196	27	0	2	117	0	381	0
7:30 AM	0	0	0	0	0	29	0	11	0	0	202	26	0	2	102	0	372	0
7:45 AM	0	0	0	0	0	17	0	12	0	0	195	21	0	5	108	0	358	1,432
8:00 AM	0	0	0	0	0	18	0	7	0	0	159	14	0	3	74	0	275	1,386
8:15 AM	0	0	0	0	0	17	0	4	0	0	163	26	0	7	77	0	294	1,299
8:30 AM	0	0	0	0	0	21	0	9	0	0	166	24	0	2	97	0	319	1,246
8:45 AM	0	0	0	0	0	15	0	3	0	0	150	11	0	6	104	0	289	1,177
Count Total	0	0	0	0	0	166	0	69	0	0	1,416	176	0	30	752	0	2,609	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**95**	**0**	**46**	**0**	**0**	**778**	**101**	**0**	**12**	**400**	**0**	**1,432**	**0**

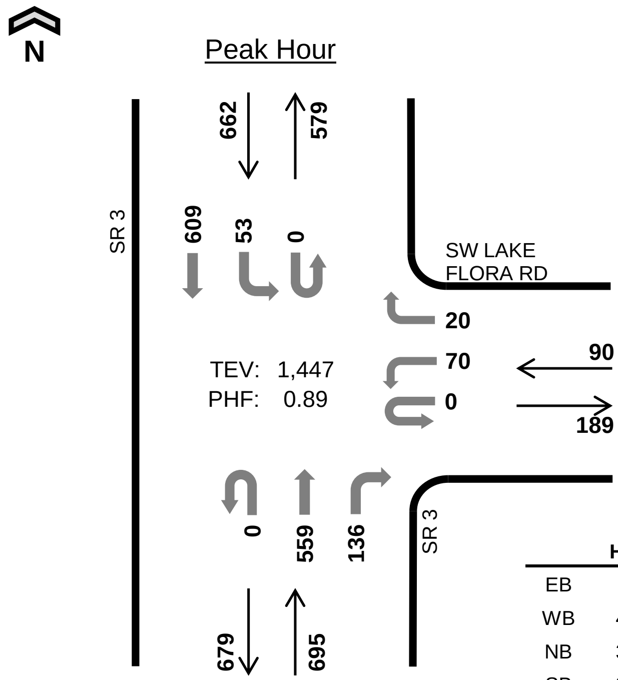
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

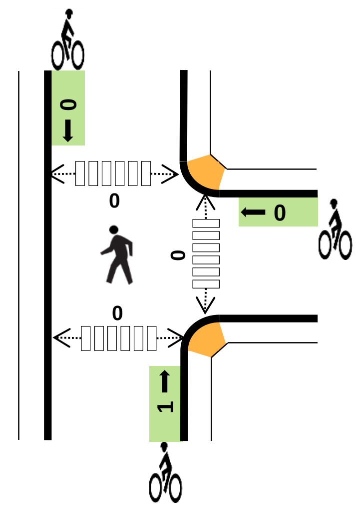
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	11	2	13	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	1	6	10	17	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	8	6	16	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	7	7	14	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	1	11	12	24	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	9	6	15	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	8	10	18	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	1	12	7	20	0	0	0	0	0	0	0	0	0	0
Count Total	0	5	72	60	137	0	0	0	0	0	0	0	0	0	0
Peak Hr	**0**	**3**	**32**	**25**	**60**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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

SR 3
SW LAKE FLORA RD

Date: Wed, May 01, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:00 PM to 5:00 PM





	HV %:	PHF
EB	-	-
WB	4.4%	0.75
NB	3.0%	0.85
SB	3.6%	0.92
TOTAL	3.4%	0.89

Two-Hour Count Summaries

Interval Start	0				SW LAKE FLORA RD				SR 3				SR 3				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**	**23**	**0**	**7**	**0**	**0**	**132**	**46**	**0**	**9**	**171**	**0**	**388**	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**22**	**0**	**4**	**0**	**0**	**177**	**28**	**0**	**12**	**162**	**0**	**405**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**5**	**0**	**0**	**146**	**36**	**0**	**19**	**121**	**0**	**341**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**4**	**0**	**0**	**104**	**26**	**0**	**13**	**155**	**0**	**313**	**1,447**
5:00 PM	0	0	0	0	0	24	0	1	0	0	111	41	0	10	180	0	367	1,426
5:15 PM	0	0	0	0	0	22	0	2	0	0	111	35	0	6	181	0	357	1,378
5:30 PM	0	0	0	0	0	22	0	3	0	0	134	33	0	5	183	0	380	1,417
5:45 PM	0	0	0	0	0	22	0	5	0	0	98	24	0	5	178	0	332	1,436
Count Total	0	0	0	0	0	160	0	31	0	0	1,013	269	0	79	1,331	0	2,883	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**70**	**0**	**20**	**0**	**0**	**559**	**136**	**0**	**53**	**609**	**0**	**1,447**	**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**	**2**	**4**	**5**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:15 PM	**0**	**1**	**9**	**9**	***19***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**1**	**6**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**2**	**7**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:00 PM	0	0	7	1	*8*	0	0	0	0	*0*	0	0	0	0	*0*
5:15 PM	0	0	3	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
5:30 PM	0	0	1	1	*2*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	0	0	0	*0*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	4	32	27	*63*	0	0	1	0	*1*	0	0	0	0	*0*
Peak Hr	**0**	**4**	**21**	**24**	***49***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	***0***

Prepared for: **SCJ Alliance**

Traffic Count Consultants, Inc.

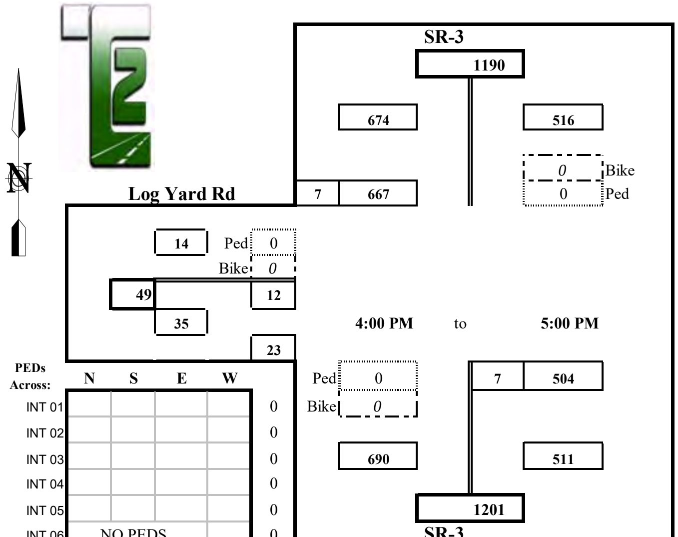
Phone: (253) 926-6009 FAX: (253) 922-7211 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: SR-3 & Log Yard Rd **Date of Count:** Wed 3/08/2017

Location: Belfair, Washington **Checked By:** Jess

Time Interval	From North on (SB) SR-3				From South on (NB) SR-3				From East on (WB) 0				From West on (EB) Log Yard Rd				Interval Total
Ending at	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	0	168	1	0	2	134	0	0	0	0	0	1	4	0	4	313
4:30 P	2	0	167	1	0	2	127	0	0	0	0	0	1	6	0	3	306
4:45 P	4	0	176	5	4	2	110	0	0	0	0	0	1	1	0	13	307
5:00 P	0	0	156	0	1	1	133	0	0	0	0	0	0	1	0	3	294
5:15 P	0	0	149	1	3	3	118	0	0	0	0	0	0	1	0	3	275
5:30 P	2	0	126	3	0	0	111	0	0	0	0	0	0	1	0	1	242
5:45 P	1	0	168	1	1	2	106	0	0	0	0	0	0	2	0	1	280
6:00 P	3	0	199	5	0	2	96	0	0	0	0	0	0	3	0	3	308
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	13	0	1309	17	9	14	935	0	0	0	0	0	3	19	0	31	2325
	Peak Hour: 4:00 PM to 5:00 PM																
Total	7	0	667	7	5	7	504	0	0	0	0	0	3	12	0	23	1220
Approach	674				511				0				35				1220
%HV	1.0%				1.0%				n/a				8.6%				1.2%
PHF	0.93				0.94				n/a				0.63				0.97



1252 *1.0 PHF Peak Hour Volume*

		PHF	%HV
Check	EB	0.63	8.6%
	WB	n/a	n/a
In: 1220	NB	0.94	1.0%
Out: 1220	SB	0.93	1.0%
	T Int.	0.97	1.2%

Conditions:

PEDs Across:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO PEDS				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

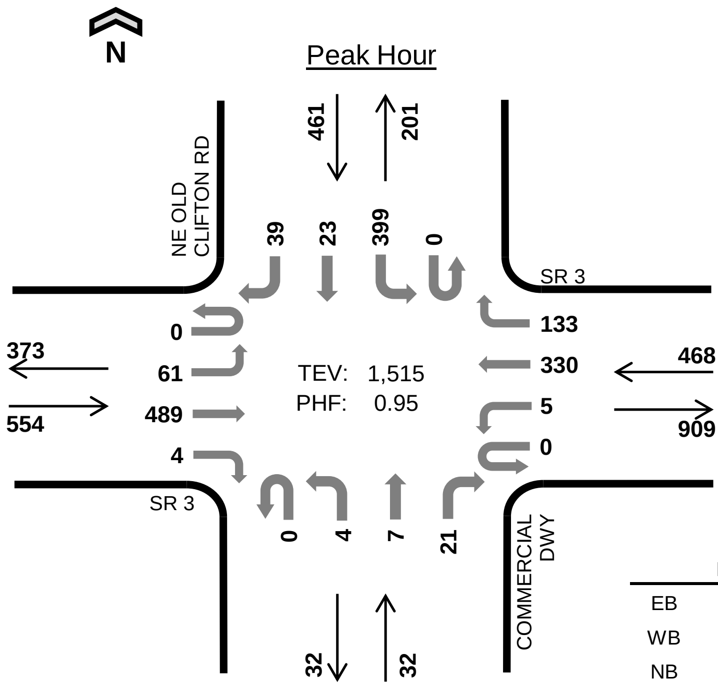
Bicycles From:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO BIKES				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

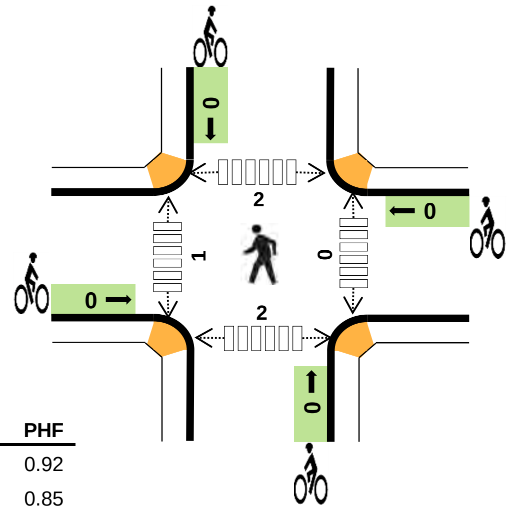
Special Notes

SCJ17029TM_01p

NE OLD CLIFTON RD
SR 3

Date: Wed, May 01, 2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM





	HV %:	PHF
EB	2.5%	0.92
WB	7.1%	0.85
NB	6.3%	0.89
SB	5.0%	0.87
TOTAL	4.8%	0.95

Two-Hour Count Summaries

Interval Start	SR 3				SR 3				COMMERCIAL DWY				NE OLD CLIFTON RD				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	11	121	0	0	0	56	23	0	0	0	6	0	90	6	5	318	0
7:15 AM	**0**	**14**	**132**	**1**	**0**	**1**	**86**	**15**	**0**	**1**	**0**	**8**	**0**	**110**	**12**	**10**	**390**	0
7:30 AM	**0**	**16**	**132**	**2**	**0**	**1**	**93**	**33**	**0**	**0**	**2**	**3**	**0**	**100**	**3**	**11**	**396**	0
7:45 AM	**0**	**16**	**130**	**0**	**0**	**2**	**92**	**43**	**0**	**3**	**1**	**5**	**0**	**93**	**4**	**10**	**399**	1,503
8:00 AM	**0**	**15**	**95**	**1**	**0**	**1**	**59**	**42**	**0**	**0**	**4**	**5**	**0**	**96**	**4**	**8**	**330**	**1,515**
8:15 AM	0	19	135	2	0	1	69	28	0	1	3	3	0	89	2	11	363	1,488
8:30 AM	0	24	101	3	0	2	84	46	0	4	2	4	0	89	4	13	376	1,468
8:45 AM	0	15	109	3	0	3	68	43	0	3	2	2	0	80	3	19	350	1,419
Count Total	0	130	955	12	0	11	607	273	0	12	14	36	0	747	38	87	2,922	0
Peak Hour	**0**	**61**	**489**	**4**	**0**	**5**	**330**	**133**	**0**	**4**	**7**	**21**	**0**	**399**	**23**	**39**	**1,515**	**0**

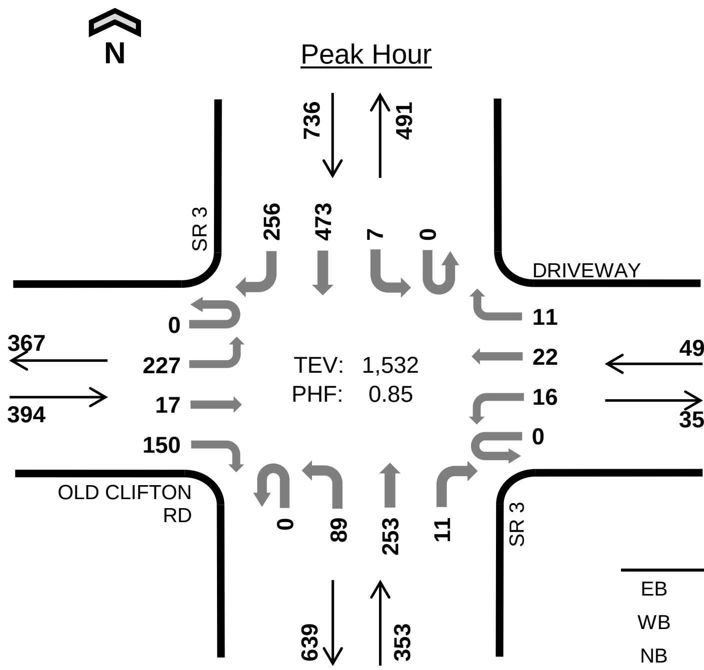
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

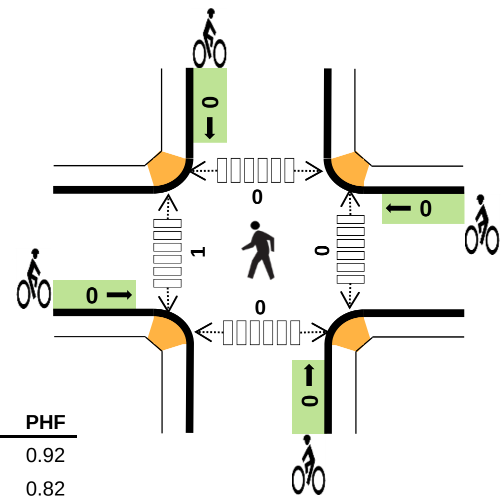
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	6	5	0	3	*14*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**1**	**8**	**0**	**7**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**0**	*1*
7:30 AM	**2**	**5**	**0**	**5**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**6**	**8**	**2**	**4**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**5**	**12**	**0**	**7**	***24***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**1**	**2**	***4***
8:15 AM	6	7	0	5	*18*	0	0	0	0	*0*	0	2	0	0	*2*
8:30 AM	7	11	0	2	*20*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	6	6	0	8	*20*	0	0	0	0	*0*	0	2	0	0	*2*
Count Total	39	62	2	41	*144*	0	0	0	0	*0*	0	5	2	2	*9*
Peak Hour	**14**	**33**	**2**	**23**	***72***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**2**	**2**	***5***

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

SR 3
OLD CLIFTON RD

Date: Tue, Oct 17, 2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	2.5%	0.92
WB	0.0%	0.82
NB	1.7%	0.89
SB	2.3%	0.74
TOTAL	2.2%	0.85

Two-Hour Count Summaries

Interval Start	OLD CLIFTON RD				DRIVEWAY				SR 3				SR 3				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	62	8	35	0	8	5	3	0	14	76	3	0	3	130	74	421	0
4:15 PM	0	48	4	25	0	5	14	0	0	18	91	0	0	7	63	41	316	0
4:30 PM	0	60	8	33	0	6	6	3	0	18	100	0	0	0	73	27	334	0
4:45 PM	0	44	6	43	0	3	13	0	0	21	60	3	0	1	103	34	331	1,402
5:00 PM	**0**	**72**	**3**	**32**	**0**	**4**	**4**	**3**	**0**	**26**	**55**	**3**	**0**	**2**	**77**	**33**	**314**	1,295
5:15 PM	**0**	**50**	**4**	**38**	**0**	**6**	**5**	**4**	**0**	**21**	**57**	**1**	**0**	**2**	**121**	**66**	**375**	1,354
5:30 PM	**0**	**52**	**6**	**42**	**0**	**2**	**7**	**3**	**0**	**21**	**67**	**3**	**0**	**2**	**118**	**67**	**390**	1,410
5:45 PM	**0**	**53**	**4**	**38**	**0**	**4**	**6**	**1**	**0**	**21**	**74**	**4**	**0**	**1**	**157**	**90**	**453**	**1,532**
Count Total	0	441	43	286	0	38	60	17	0	160	580	17	0	18	842	432	2,934	0
Peak Hour	**0**	**227**	**17**	**150**	**0**	**16**	**22**	**11**	**0**	**89**	**253**	**11**	**0**	**7**	**473**	**256**	**1,532**	**0**

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

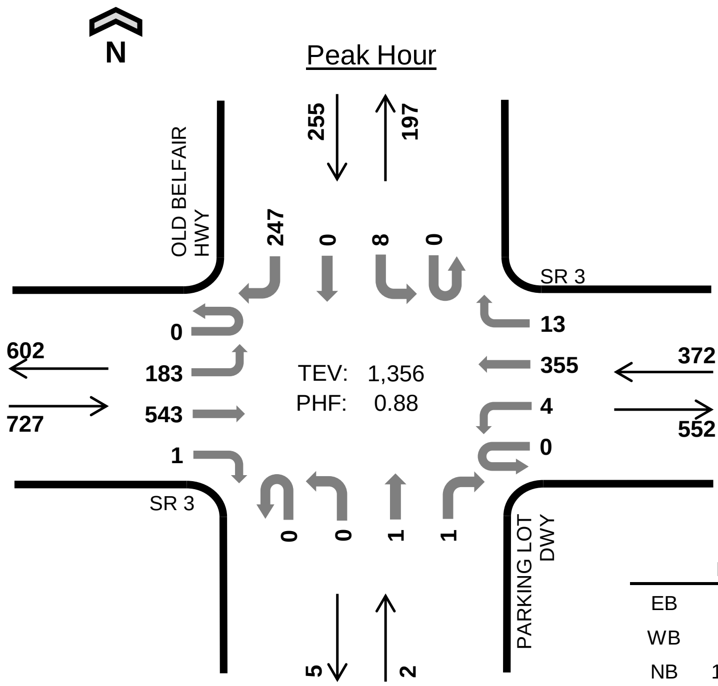
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	0	5	3	*11*	0	0	0	0	*0*	0	0	0	1	*1*
4:15 PM	2	0	9	3	*14*	0	0	0	0	*0*	2	0	0	2	*4*
4:30 PM	3	0	7	2	*12*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	5	0	2	1	*8*	0	0	0	0	*0*	1	1	0	3	*5*
5:00 PM	**4**	**0**	**1**	**2**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**2**	**7**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**3**	**0**	**1**	**5**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:45 PM	**3**	**0**	**2**	**3**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	23	0	29	26	*78*	0	0	0	0	*0*	3	2	0	6	*11*
Peak Hour	**10**	**0**	**6**	**17**	***33***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***

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

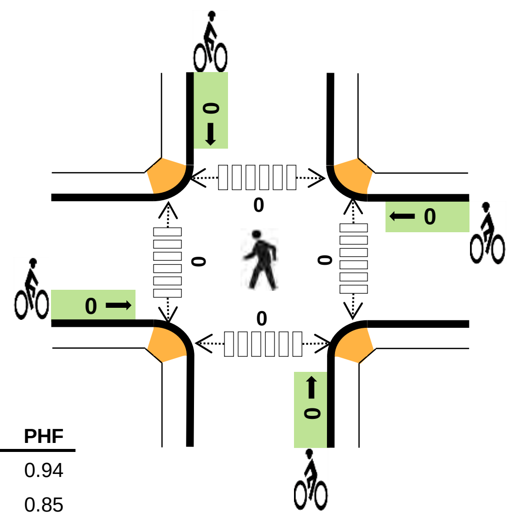
OLD BELFAIR HWY
SR 3

idax

Date: Wed, May 01, 2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	2.9%	0.94
WB	7.3%	0.85
NB	100.0%	0.50
SB	8.6%	0.71
TOTAL	5.3%	0.88



Two-Hour Count Summaries

Interval Start	SR 3 Eastbound UT	LT	TH	RT	SR 3 Westbound UT	LT	TH	RT	PARKING LOT DWY Northbound UT	LT	TH	RT	OLD BELFAIR HWY Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	37	116	0	0	0	63	0	0	0	0	0	0	5	0	32	253	0
7:15 AM	**0**	**40**	**143**	**1**	**0**	**1**	**92**	**4**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**44**	**328**	0
7:30 AM	**0**	**52**	**142**	**0**	**0**	**0**	**99**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**88**	**385**	0
7:45 AM	**0**	**48**	**135**	**0**	**0**	**2**	**105**	**3**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**77**	**373**	1,339
8:00 AM	**0**	**43**	**123**	**0**	**0**	**1**	**59**	**4**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**38**	**270**	**1,356**
8:15 AM	0	36	148	0	0	0	76	5	0	0	1	1	0	5	0	37	309	1,337
8:30 AM	0	51	123	0	0	0	88	6	0	0	0	0	0	1	0	41	310	1,262
8:45 AM	0	55	125	0	0	1	83	5	0	0	1	0	0	2	0	35	307	1,196
Count Total	0	362	1,055	1	0	5	665	29	0	0	3	2	0	21	0	392	2,535	0
Peak Hour	**0**	**183**	**543**	**1**	**0**	**4**	**355**	**13**	**0**	**0**	**1**	**1**	**0**	**8**	**0**	**247**	**1,356**	**0**

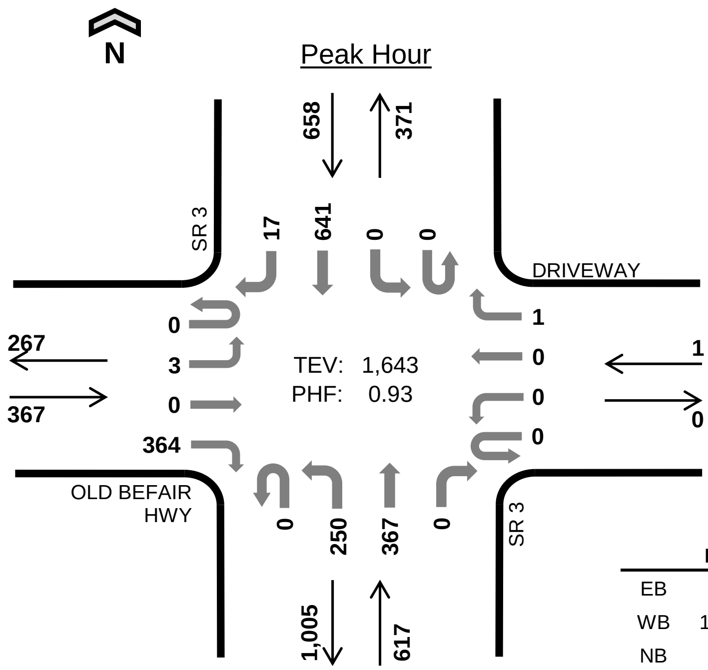
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	12	5	0	1	*18*	0	0	0	0	*0*	0	0	1	0	*1*
7:15 AM	**5**	**9**	**0**	**6**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**4**	**3**	**0**	**13**	***20***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**5**	**8**	**1**	**1**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**7**	**7**	**1**	**2**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	10	6	2	5	*23*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	10	8	0	0	*18*	0	0	0	0	*0*	0	0	1	0	*1*
8:45 AM	12	9	1	1	*23*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	65	55	5	29	*154*	0	0	0	0	*0*	0	0	2	0	*2*
Peak Hour	**21**	**27**	**2**	**22**	***72***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

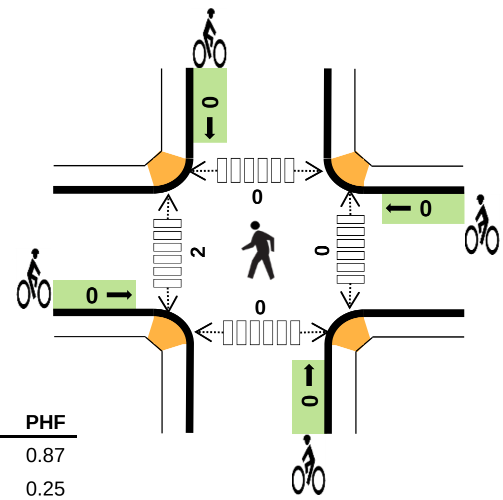
Mark Skaggs: (425) 250-0777 mark.skaggs@idaxdata.com

SR 3
OLD BEFAIR HWY

Date: Tue, Oct 17, 2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	3.5%	0.87
WB	100.0%	0.25
NB	1.8%	0.91
SB	1.8%	0.83
TOTAL	2.3%	0.93



Two-Hour Count Summaries

Interval Start	OLD BEFAIR HWY				DRIVEWAY				SR 3				SR 3				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	0	94	0	0	0	0	0	49	107	0	0	0	160	6	418	0
4:15 PM	0	0	0	71	0	0	0	1	0	62	108	0	0	0	82	1	325	0
4:30 PM	0	2	0	96	0	0	0	2	0	65	124	0	0	1	122	0	412	0
4:45 PM	0	2	0	104	0	0	0	2	0	61	91	0	0	2	158	4	424	1,579
5:00 PM	**0**	**1**	**0**	**92**	**0**	**0**	**0**	**0**	**0**	**55**	**87**	**0**	**0**	**0**	**115**	**3**	**353**	1,514
5:15 PM	**0**	**0**	**0**	**105**	**0**	**0**	**0**	**0**	**0**	**66**	**82**	**0**	**0**	**0**	**160**	**0**	**413**	1,602
5:30 PM	**0**	**1**	**0**	**92**	**0**	**0**	**0**	**0**	**0**	**72**	**98**	**0**	**0**	**0**	**176**	**5**	**444**	1,634
5:45 PM	**0**	**1**	**0**	**75**	**0**	**0**	**0**	**1**	**0**	**57**	**100**	**0**	**0**	**0**	**190**	**9**	**433**	**1,643**
Count Total	0	9	0	729	0	0	0	6	0	487	797	0	0	3	1,163	28	3,222	0
Peak Hour	**0**	**3**	**0**	**364**	**0**	**0**	**0**	**1**	**0**	**250**	**367**	**0**	**0**	**0**	**641**	**17**	**1,643**	**0**

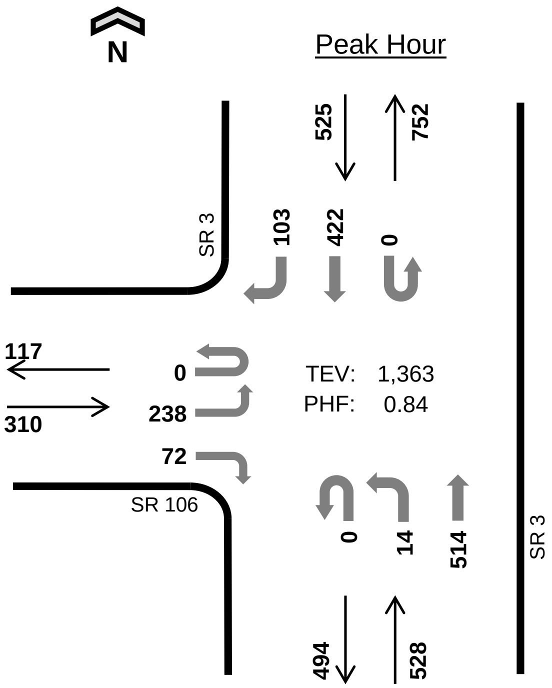
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

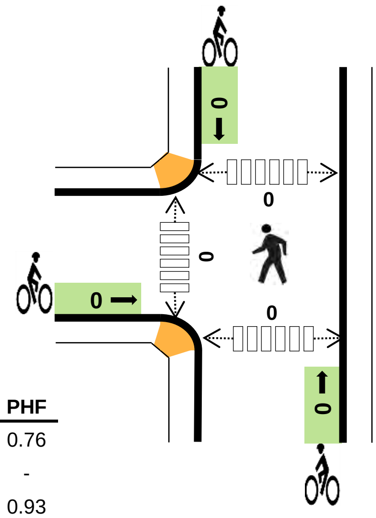
Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	0	8	1	*14*	0	0	0	0	*0*	1	0	0	0	*1*
4:15 PM	3	1	10	1	*15*	0	0	0	0	*0*	3	0	0	0	*3*
4:30 PM	7	1	5	4	*17*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	9	1	6	5	*21*	0	0	0	0	*0*	2	2	0	0	*4*
5:00 PM	**4**	**0**	**1**	**4**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**3**	**0**	**3**	**2**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:30 PM	**5**	**0**	**3**	**5**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:45 PM	**1**	**1**	**4**	**1**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	37	4	40	23	*104*	0	0	0	0	*0*	6	4	0	0	*10*
Peak Hour	**13**	**1**	**11**	**12**	***37***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***

SR 3
SR 106

Date: Wed, May 01, 2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM

Peak Hour





	HV %:	PHF
EB	4.2%	0.76
WB	-	-
NB	3.0%	0.93
SB	6.9%	0.76
TOTAL	4.8%	0.84

Two-Hour Count Summaries

Interval Start	SR 106 Eastbound UT	LT	TH	RT	0 Westbound UT	LT	TH	RT	SR 3 Northbound UT	LT	TH	RT	SR 3 Southbound UT	LT	TH	RT	15-min Total	Rolling One Hour
7:00 AM	0	52	0	6	0	0	0	0	0	3	104	0	0	0	61	20	246	0
7:15 AM	**0**	**64**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**1**	**112**	**0**	**0**	**0**	**89**	**25**	**312**	0
7:30 AM	**0**	**70**	**0**	**32**	**0**	**0**	**0**	**0**	**0**	**0**	**132**	**0**	**0**	**0**	**147**	**26**	**407**	0
7:45 AM	**0**	**64**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**1**	**140**	**0**	**0**	**0**	**127**	**32**	**380**	1,345
8:00 AM	**0**	**40**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**12**	**130**	**0**	**0**	**0**	**59**	**20**	**264**	**1,363**
8:15 AM	0	51	0	7	0	0	0	0	0	1	132	0	0	0	60	26	277	1,328
8:30 AM	0	58	0	7	0	0	0	0	0	6	122	0	0	0	69	30	292	1,213
8:45 AM	0	75	0	5	0	0	0	0	0	5	118	0	0	0	58	28	289	1,122
Count Total	0	474	0	97	0	0	0	0	0	29	990	0	0	0	670	207	2,467	0
Peak Hour	**0**	**238**	**0**	**72**	**0**	**0**	**0**	**0**	**0**	**14**	**514**	**0**	**0**	**0**	**422**	**103**	**1,363**	**0**

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

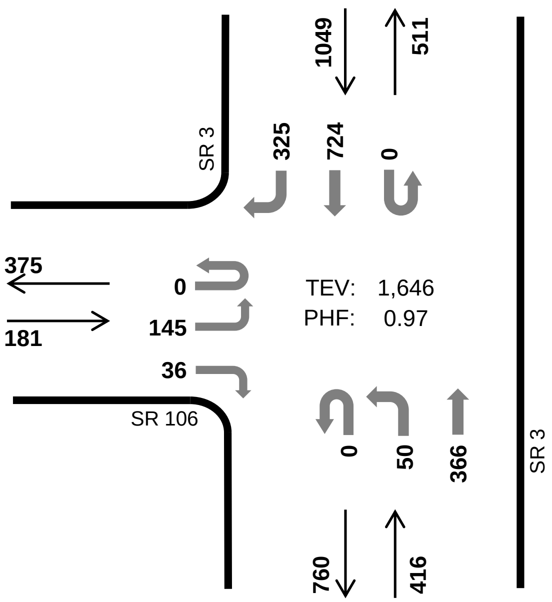
Interval Start	Heavy Vehicle Totals EB	WB	NB	SB	Total	Bicycles EB	WB	NB	SB	Total	Pedestrians (Crossing Leg) East	West	North	South	Total
7:00 AM	1	0	10	5	*16*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**2**	**0**	**2**	**6**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**8**	**0**	**3**	**22**	***33***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**1**	**0**	**4**	**4**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**2**	**0**	**7**	**4**	***13***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	1	0	7	13	*21*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	2	0	13	6	*21*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	6	5	*11*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	17	0	52	65	*134*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**13**	**0**	**16**	**36**	***65***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

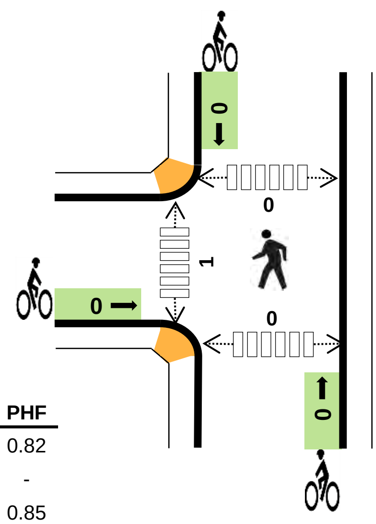
SR 3
SR 106

N

Peak Hour

Date: Tue, Oct 17, 2017
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM





	HV %:	PHF
EB	2.8%	0.82
WB	-	-
NB	1.7%	0.85
SB	2.8%	0.95
TOTAL	2.5%	0.97

Two-Hour Count Summaries

Interval Start	SR 106				0				SR 3				SR 3				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	31	0	2	0	0	0	0	0	7	84	0	0	0	135	64	323	0
4:15 PM	0	38	0	4	0	0	0	0	0	9	113	0	0	0	172	74	410	0
4:30 PM	0	38	0	7	0	0	0	0	0	15	111	0	0	0	186	79	436	0
4:45 PM	0	40	0	8	0	0	0	0	0	9	81	0	0	0	186	76	400	1,569
5:00 PM	**0**	**30**	**0**	**7**	**0**	**0**	**0**	**0**	**0**	**10**	**83**	**0**	**0**	**0**	**170**	**87**	**387**	1,633
5:15 PM	**0**	**40**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**19**	**80**	**0**	**0**	**0**	**181**	**86**	**418**	1,641
5:30 PM	**0**	**46**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**12**	**110**	**0**	**0**	**0**	**170**	**79**	**426**	1,631
5:45 PM	**0**	**29**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**9**	**93**	**0**	**0**	**0**	**203**	**73**	**415**	**1,646**
Count Total	0	292	0	57	0	0	0	0	0	90	755	0	0	0	1,403	618	3,215	0
Peak Hour	**0**	**145**	**0**	**36**	**0**	**0**	**0**	**0**	**0**	**50**	**366**	**0**	**0**	**0**	**724**	**325**	**1,646**	**0**

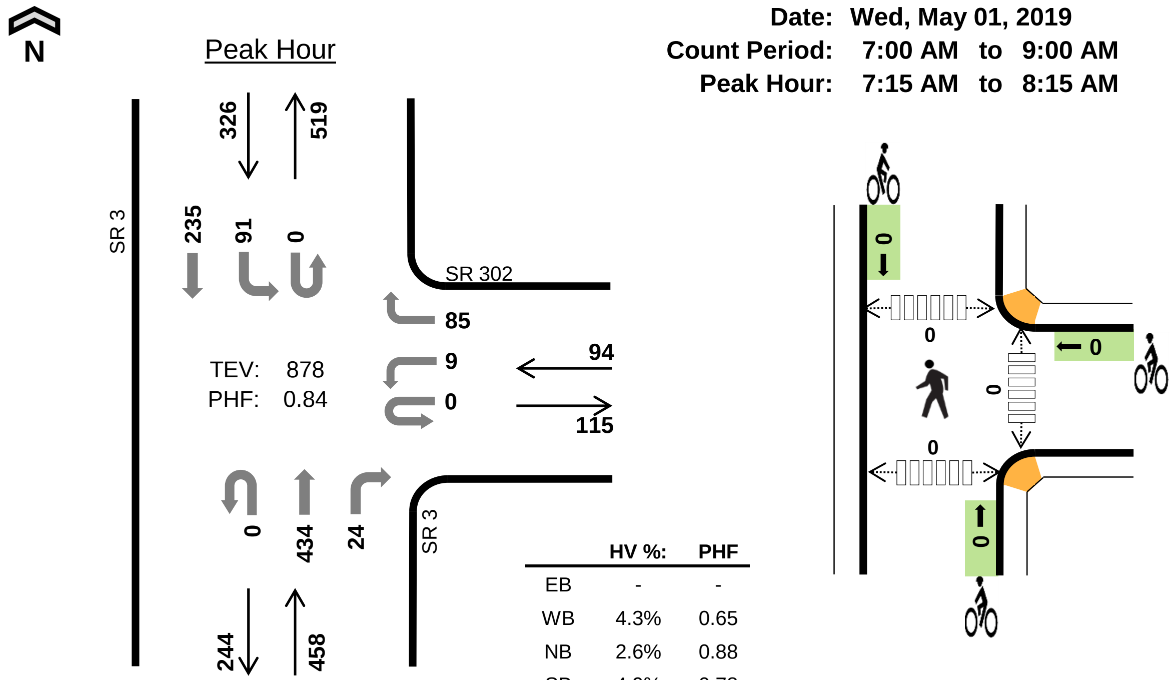
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

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	0	2	13	*17*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	2	0	11	5	*18*	0	0	0	0	*0*	0	0	0	0	*0*
4:30 PM	1	0	2	8	*11*	0	0	0	0	*0*	0	0	0	0	*0*
4:45 PM	4	0	2	10	*16*	0	0	0	0	*0*	0	0	0	0	*0*
5:00 PM	**2**	**0**	**1**	**11**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:15 PM	**0**	**0**	**3**	**4**	***7***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:30 PM	**1**	**0**	**1**	**9**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
5:45 PM	**2**	**0**	**2**	**5**	***9***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	14	0	24	65	*103*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hr	**5**	**0**	**7**	**29**	***41***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***

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

SR 3
SR 302

Date: Wed, May 01, 2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:15 AM to 8:15 AM



	HV %:	PHF
EB	-	-
WB	4.3%	0.65
NB	2.6%	0.88
SB	4.9%	0.78
TOTAL	3.6%	0.84

Two-Hour Count Summaries

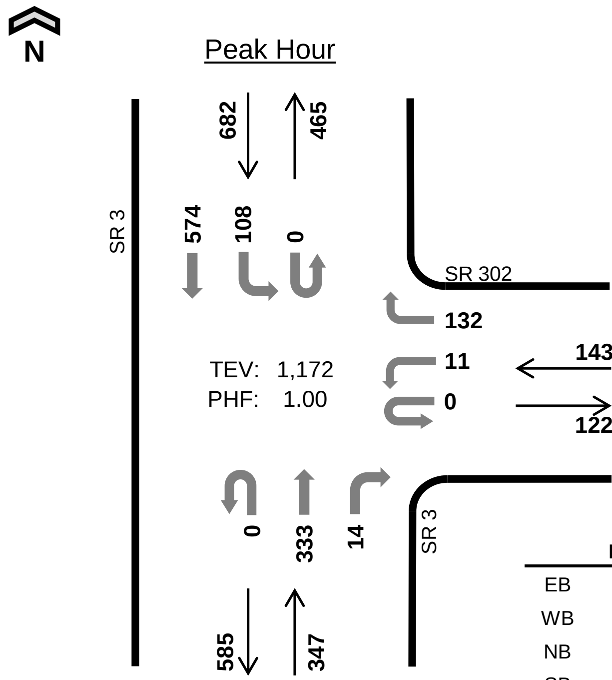
Interval Start	0				SR 302				SR 3				SR 3				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	1	0	15	0	0	92	3	0	4	49	0	164	0
7:15 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**19**	**0**	**0**	**105**	**4**	**0**	**12**	**52**	**0**	**194**	0
7:30 AM	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**22**	**0**	**0**	**122**	**8**	**0**	**24**	**65**	**0**	**243**	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**31**	**0**	**0**	**109**	**11**	**0**	**44**	**60**	**0**	**260**	861
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**98**	**1**	**0**	**11**	**58**	**0**	**181**	**878**
8:15 AM	0	0	0	0	0	1	0	11	0	0	103	1	0	6	49	0	171	855
8:30 AM	0	0	0	0	0	0	0	18	0	0	100	1	0	13	61	0	193	805
8:45 AM	0	0	0	0	0	4	0	13	0	0	98	0	0	8	43	0	166	711
Count Total	0	0	0	0	0	15	0	142	0	0	827	29	0	122	437	0	1,572	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**85**	**0**	**0**	**434**	**24**	**0**	**91**	**235**	**0**	**878**	**0**

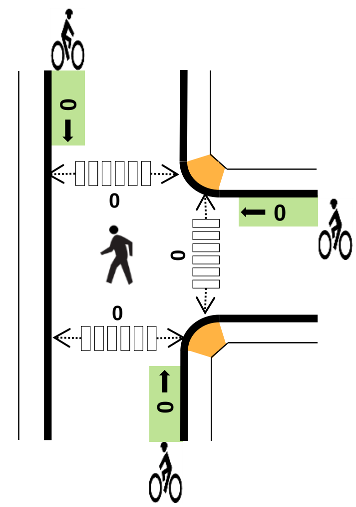
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	2	7	*10*	0	0	0	0	*0*	0	0	0	0	*0*
7:15 AM	**0**	**1**	**3**	**2**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:30 AM	**0**	**3**	**4**	**3**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
7:45 AM	**0**	**0**	**4**	**6**	***10***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:00 AM	**0**	**0**	**1**	**5**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
8:15 AM	0	0	4	10	*14*	0	0	0	0	*0*	0	0	0	0	*0*
8:30 AM	0	0	7	7	*14*	0	0	0	0	*0*	0	0	0	0	*0*
8:45 AM	0	0	2	5	*7*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	5	27	45	*77*	0	0	0	0	*0*	0	0	0	0	*0*
Peak Hr	**0**	**4**	**12**	**16**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

SR 3
SR 302

Date: Wed, May 01, 2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	-	-
WB	2.1%	0.83
NB	3.7%	0.94
SB	2.3%	0.91
TOTAL	2.7%	1.00

Two-Hour Count Summaries

Interval Start	0				SR 302				SR 3				SR 3				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	3	0	31	0	0	83	1	0	33	122	0	273	0
4:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**39**	**0**	**0**	**87**	**5**	**0**	**27**	**135**	**0**	**294**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**39**	**0**	**0**	**88**	**3**	**0**	**22**	**138**	**0**	**294**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**25**	**0**	**0**	**83**	**5**	**0**	**27**	**146**	**0**	**292**	1,153
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**29**	**0**	**0**	**75**	**1**	**0**	**32**	**155**	**0**	**292**	**1,172**
5:15 PM	0	0	0	0	0	3	0	26	0	0	76	8	0	35	130	0	278	1,156
5:30 PM	0	0	0	0	0	1	0	22	0	0	88	2	0	25	142	0	280	1,142
5:45 PM	0	0	0	0	0	6	0	22	0	0	64	5	0	31	154	0	282	1,132
Count Total	0	0	0	0	0	24	0	233	0	0	644	30	0	232	1,122	0	2,285	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**132**	**0**	**0**	**333**	**14**	**0**	**108**	**574**	**0**	**1,172**	**0**

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

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	5	6	*11*	0	0	0	0	*0*	0	0	0	0	*0*
4:15 PM	**0**	**1**	**2**	**5**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:30 PM	**0**	**1**	**3**	**7**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
4:45 PM	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**0**	**1**	**6**	**4**	***11***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
5:15 PM	0	0	2	2	*4*	0	0	0	0	*0*	0	1	0	0	*1*
5:30 PM	0	0	2	1	*3*	0	0	0	0	*0*	0	0	0	0	*0*
5:45 PM	0	1	2	1	*4*	0	0	0	0	*0*	0	0	0	0	*0*
Count Total	0	4	24	26	*54*	0	0	0	0	*0*	0	1	0	0	*1*
Peak Hr	**0**	**3**	**13**	**16**	***32***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***

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Appendix B

Traffic Operations Modeling Output

Intersection						
Int Delay, s/veh	2.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	45	780	100	10	400
Future Vol, veh/h	95	45	780	100	10	400
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	275	0	-	-	300	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	4	4	6	6
Mvmt Flow	101	48	830	106	11	426

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1331	883	0	0	936	0
Stage 1	883	-	-	-	-	-
Stage 2	448	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.16	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.254	-
Pot Cap-1 Maneuver	170	345	-	-	716	-
Stage 1	404	-	-	-	-	-
Stage 2	644	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	167	345	-	-	716	-
Mov Cap-2 Maneuver	294	-	-	-	-	-
Stage 1	398	-	-	-	-	-
Stage 2	644	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.4	0	0.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	294	345	716	-
HCM Lane V/C Ratio	-	-	0.344	0.139	0.015	-
HCM Control Delay (s)	-	-	23.5	17.1	10.1	-
HCM Lane LOS	-	-	C	C	B	-
HCM 95th %tile Q(veh)	-	-	1.5	0.5	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	15	5	775	355	5
Future Vol, veh/h	35	15	5	775	355	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	150	0	200	-	-	475
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	9	9	2	2	2	2
Mvmt Flow	35	15	5	775	355	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1140	355	355	0	-	0
Stage 1	355	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.12	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.218	-	-	-
Pot Cap-1 Maneuver	215	673	1204	-	-	0
Stage 1	694	-	-	-	-	0
Stage 2	437	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	214	673	1204	-	-	-
Mov Cap-2 Maneuver	332	-	-	-	-	-
Stage 1	691	-	-	-	-	-
Stage 2	437	-	-	-	-	-

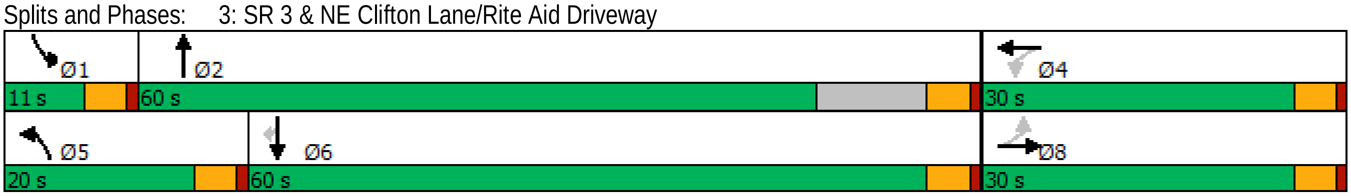
Approach	EB	NB	SB
HCM Control Delay, s	15.1	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	1204	-	332	673	-
HCM Lane V/C Ratio	0.004	-	0.105	0.022	-
HCM Control Delay (s)	8	-	17.1	10.5	-
HCM Lane LOS	A	-	C	B	-
HCM 95th %tile Q(veh)	0	-	0.3	0.1	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	400	25	5	5	60	490	5	330	135
Future Volume (vph)	400	25	5	5	60	490	5	330	135
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	27.2	27.2	27.2	27.2	8.9	44.4	6.6	35.8	35.8
Actuated g/C Ratio	0.33	0.33	0.33	0.33	0.11	0.53	0.08	0.43	0.43
v/c Ratio	1.02	0.13	0.01	0.05	0.35	0.56	0.07	0.86	0.34
Control Delay	85.7	15.2	28.8	14.9	45.6	14.4	47.2	43.1	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.7	15.2	28.8	14.9	45.6	14.4	47.2	43.1	4.9
LOS	F	B	C	B	D	B	D	D	A
Approach Delay		75.9		17.1		17.8		32.2	
Approach LOS		E		B		B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 83	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 40.0	Intersection LOS: D
Intersection Capacity Utilization 79.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	245	185	545	355	15
Future Vol, veh/h	10	245	185	545	355	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	9	9	3	3	7	7
Mvmt Flow	11	278	210	619	403	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1451	412	420	0	-	0
Stage 1	412	-	-	-	-	-
Stage 2	1039	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	139	625	1134	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	331	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	113	625	1134	-	-	-
Mov Cap-2 Maneuver	110	-	-	-	-	-
Stage 1	533	-	-	-	-	-
Stage 2	331	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	2.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1134	-	110	625	-	-
HCM Lane V/C Ratio	0.185	-	0.103	0.445	-	-
HCM Control Delay (s)	8.9	-	41.5	15.3	-	-
HCM Lane LOS	A	-	E	C	-	-
HCM 95th %tile Q(veh)	0.7	-	0.3	2.3	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	240	70	15	515	420	105
Future Volume (vph)	240	70	15	515	420	105
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	50.0	50.0
Total Split (%)	35.7%	35.7%	28.6%	35.7%	35.7%	35.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	19.1	19.1	7.1	34.5	30.7	60.0
Actuated g/C Ratio	0.29	0.29	0.11	0.53	0.47	0.92
v/c Ratio	0.60	0.17	0.10	0.66	0.63	0.09
Control Delay	29.0	7.2	37.6	15.0	19.5	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	7.2	37.6	15.0	19.5	0.6
LOS	C	A	D	B	B	A
Approach Delay	24.1			15.6	15.7	
Approach LOS	C			B	B	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 65.3
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 17.6 — Intersection LOS: B
Intersection Capacity Utilization 51.5% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: SR 3 & SR 106

Intersection						
Int Delay, s/veh	2.5					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	85	435	25	90	235
Future Vol, veh/h	10	85	435	25	90	235
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	4	4	3	3	5	5
Mvmt Flow	12	101	518	30	107	280

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1027	533	0	0	548	0
Stage 1	533	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.15	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.245	-
Pot Cap-1 Maneuver	257	543	-	-	1007	-
Stage 1	584	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	225	543	-	-	1007	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	609	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	2.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	473	1007	-
HCM Lane V/C Ratio	-	-	0.239	0.106	-
HCM Control Delay (s)	-	-	15	9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.4	-

Arterial Level of Service: NB SR 3

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
SR 106	II	49	119.7	15.0	134.7	1.64	43.7	A
Rite Aid Driveway	II	35	166.6	14.4	181.0	1.64	32.6	B
Total	II		286.3	29.4	315.7	3.27	37.3	A

Arterial Level of Service: SB SR 3

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
NE Clifton Lane	II	43	203.8	43.1	246.9	2.46	35.8	A
SR 106	II	35	168.2	19.5	187.7	1.64	31.4	B
Total	II		372.0	62.6	434.6	4.10	33.9	B

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	70	20	560	135	55	610
Future Vol, veh/h	70	20	560	135	55	610
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	275	0	-	-	300	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	4	3	3	4	4
Mvmt Flow	79	22	629	152	62	685

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1514	705	0	0	781	0
Stage 1	705	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	130	433	-	-	828	-
Stage 1	486	-	-	-	-	-
Stage 2	435	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	120	433	-	-	828	-
Mov Cap-2 Maneuver	240	-	-	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	435	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.1	0	0.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	240	433	828	-
HCM Lane V/C Ratio	-	-	0.328	0.052	0.075	-
HCM Control Delay (s)	-	-	27.1	13.8	9.7	-
HCM Lane LOS	-	-	D	B	A	-
HCM 95th %tile Q(veh)	-	-	1.4	0.2	0.2	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	25	5	505	665	5
Future Vol, veh/h	10	25	5	505	665	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	150	0	200	-	-	475
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	9	9	1	1	1	1
Mvmt Flow	10	26	5	521	686	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1217	686	686	0	-	0
Stage 1	686	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.11	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.209	-	-	-
Pot Cap-1 Maneuver	193	436	912	-	-	0
Stage 1	487	-	-	-	-	0
Stage 2	576	-	-	-	-	0
Platoon blocked, %				-	-	
Mov Cap-1 Maneuver	192	436	912	-	-	-
Mov Cap-2 Maneuver	326	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	576	-	-	-	-	-

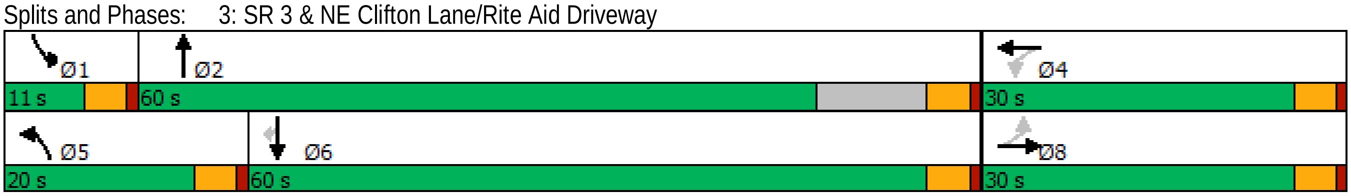
Approach	EB	NB	SB
HCM Control Delay, s	14.5	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT
Capacity (veh/h)	912	-	326	436	-
HCM Lane V/C Ratio	0.006	-	0.032	0.059	-
HCM Control Delay (s)	9	-	16.4	13.8	-
HCM Lane LOS	A	-	C	B	-
HCM 95th %tile Q(veh)	0	-	0.1	0.2	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	225	15	15	20	60	255	5	595	255
Future Volume (vph)	225	15	15	20	60	255	5	595	255
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	23.5	23.5	23.5	23.5	9.5	65.4	6.3	56.0	56.0
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.09	0.65	0.06	0.56	0.56
v/c Ratio	0.88	0.40	0.09	0.09	0.45	0.27	0.11	1.28	0.51
Control Delay	68.0	9.4	32.9	24.0	53.7	8.9	51.6	163.9	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	9.4	32.9	24.0	53.7	8.9	51.6	163.9	5.1
LOS	E	A	C	C	D	A	D	F	A
Approach Delay		43.2		27.0		17.2		115.9	
Approach LOS		D		C		B		F	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 100.2	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 76.0	Intersection LOS: E
Intersection Capacity Utilization 86.9%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection						
Int Delay, s/veh	13.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	365	250	365	640	15
Future Vol, veh/h	5	365	250	365	640	15
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	2	2	2	2
Mvmt Flow	5	392	269	392	688	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1630	700	706	0	-	0
Stage 1	698	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.12	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	111	436	892	-	-	-
Stage 1	490	-	-	-	-	-
Stage 2	380	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	77	434	890	-	-	-
Mov Cap-2 Maneuver	97	-	-	-	-	-
Stage 1	342	-	-	-	-	-
Stage 2	379	-	-	-	-	-

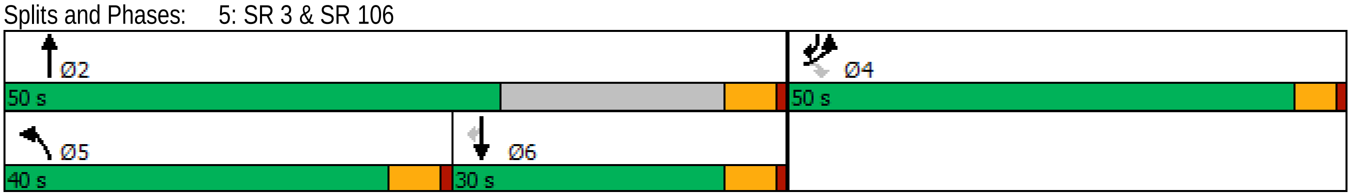
Approach	EB	NB	SB
HCM Control Delay, s	53.6	4.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	890	-	97	434	-	-
HCM Lane V/C Ratio	0.302	-	0.055	0.904	-	-
HCM Control Delay (s)	10.8	-	44.3	53.7	-	-
HCM Lane LOS	B	-	E	F	-	-
HCM 95th %tile Q(veh)	1.3	-	0.2	9.8	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	145	35	50	365	725	325
Future Volume (vph)	145	35	50	365	725	325
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	30.0	50.0
Total Split (%)	41.7%	41.7%	33.3%	41.7%	25.0%	41.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	11.5	11.5	7.3	32.3	24.9	37.2
Actuated g/C Ratio	0.21	0.21	0.13	0.59	0.46	0.68
v/c Ratio	0.43	0.11	0.23	0.36	0.94	0.30
Control Delay	24.9	8.8	26.5	6.9	41.0	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	8.8	26.5	6.9	41.0	1.3
LOS	C	A	C	A	D	A
Approach Delay	21.8			9.3	28.7	
Approach LOS	C			A	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 54.6	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 23.0	Intersection LOS: C
Intersection Capacity Utilization 61.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: SR 3 & SR 106



Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	130	335	15	110	575
Future Vol, veh/h	10	130	335	15	110	575
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	2	2	4	4	2	2
Mvmt Flow	10	130	335	15	110	575

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1138	343	0	0	350	0
Stage 1	343	-	-	-	-	-
Stage 2	795	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	223	700	-	-	1209	-
Stage 1	719	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	193	700	-	-	1209	-
Mov Cap-2 Maneuver	193	-	-	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	445	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	589	1209	-
HCM Lane V/C Ratio	-	-	0.238	0.091	-
HCM Control Delay (s)	-	-	13	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.3	-

Arterial Level of Service: NB SR 3

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
SR 106	II	49	119.7	6.9	126.6	1.64	46.5	A
Rite Aid Driveway	II	35	166.6	8.9	175.5	1.64	33.6	B
Total	II		286.3	15.8	302.1	3.27	39.0	A

Arterial Level of Service: SB SR 3

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
NE Clifton Lane	II	43	203.8	163.9	367.7	2.46	24.1	C
SR 106	II	35	168.2	41.0	209.2	1.64	28.2	B
Total	II		372.0	204.9	576.9	4.10	25.6	C

MOVEMENT SUMMARY

Site: 200 [SR 3/SR 302 - 2025 AM Build - West RAB]

Network: N101 [SR 3/SR 302 2025 AM Build]

Build - Opening Year
2025 AM Peak Hour
Double RAB
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3														
8	T1	226	3.0	226	3.0	0.548	4.9	LOS A	1.8	44.9	0.41	0.49	0.41	36.6
18	R2	417	3.0	417	3.0	0.548	4.9	LOS A	1.8	44.9	0.41	0.49	0.41	33.0
Approach		643	3.0	643	3.0	0.548	4.9	LOS A	1.8	44.9	0.41	0.49	0.41	34.8
East: SR 302														
1	L2	186	4.0	186	4.0	0.270	10.9	LOS B	0.6	15.4	0.44	0.65	0.44	32.6
16	R2	96	4.0	96	4.0	0.270	5.3	LOS A	0.6	15.4	0.44	0.65	0.44	31.4
Approach		282	4.0	282	4.0	0.270	9.0	LOS A	0.6	15.4	0.44	0.65	0.44	32.2
North: SR 3														
7	L2	95	5.0	95	5.0	0.241	10.7	LOS B	0.5	13.5	0.40	0.58	0.40	31.5
4	T1	161	5.0	161	5.0	0.241	5.1	LOS A	0.5	13.5	0.40	0.58	0.40	35.5
Approach		256	5.0	256	5.0	0.241	7.2	LOS A	0.5	13.5	0.40	0.58	0.40	34.5
All Vehicles		1181	3.7	1181	3.7	0.548	6.4	LOS A	1.8	44.9	0.42	0.55	0.42	34.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
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: 222 [SR 3/SR 302 - 2025 AM Build - East RAB]

Network: N101 [SR 3/SR 302 2025 AM Build]

Build - Opening Year
2025 AM Peak Hour
Double RAB
Site Category: -
Roundabout

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Bellwood Lane														
3	L2	1	3.0	1	3.0	0.006	12.2	LOS B	0.0	0.3	0.54	0.59	0.54	30.5
3a	L1	1	3.0	1	3.0	0.006	11.0	LOS B	0.0	0.3	0.54	0.59	0.54	34.5
8	T1	1	3.0	1	3.0	0.006	6.6	LOS A	0.0	0.3	0.54	0.59	0.54	34.8
18	R2	1	3.0	1	3.0	0.006	6.6	LOS A	0.0	0.3	0.54	0.59	0.54	33.9
Approach		5	3.0	5	3.0	0.006	9.1	LOS A	0.0	0.3	0.54	0.59	0.54	33.7
East: SR 302														
1	L2	1	4.0	1	4.0	0.139	11.8	LOS B	0.3	7.0	0.50	0.60	0.50	36.1
6	T1	89	4.0	89	4.0	0.139	6.2	LOS A	0.3	7.0	0.50	0.60	0.50	32.4
16a	R1	1	4.0	1	4.0	0.139	5.8	LOS A	0.3	7.0	0.50	0.60	0.50	35.8
16	R2	36	4.0	36	4.0	0.139	6.1	LOS A	0.3	7.0	0.50	0.60	0.50	35.0
Approach		127	4.0	127	4.0	0.139	6.2	LOS A	0.3	7.0	0.50	0.60	0.50	33.5
North: SR 3 Bypass														
7	L2	24	5.0	24	5.0	0.189	10.2	LOS B	0.4	10.3	0.28	0.51	0.28	36.7
4	T1	1	5.0	1	5.0	0.189	4.5	LOS A	0.4	10.3	0.28	0.51	0.28	36.7
14	R2	190	5.0	190	5.0	0.189	4.5	LOS A	0.4	10.3	0.28	0.51	0.28	33.3
14b	R3	1	5.0	1	5.0	0.189	4.7	LOS A	0.4	10.3	0.28	0.51	0.28	35.2
Approach		217	5.0	217	5.0	0.189	5.2	LOS A	0.4	10.3	0.28	0.51	0.28	33.9
NorthWest: School Driveway														
7bx	L3	1	3.0	1	3.0	0.005	12.4	LOS B	0.0	0.2	0.45	0.55	0.45	35.6
7ax	L1	1	3.0	1	3.0	0.005	10.0	LOS B	0.0	0.2	0.45	0.55	0.45	34.8
14ax	R1	1	3.0	1	3.0	0.005	5.2	LOS A	0.0	0.2	0.45	0.55	0.45	34.9
14bx	R3	1	3.0	1	3.0	0.005	5.7	LOS A	0.0	0.2	0.45	0.55	0.45	31.0
Approach		5	3.0	5	3.0	0.005	8.3	LOS A	0.0	0.2	0.45	0.55	0.45	34.4
West: SR 302														
5b	L3	1	4.0	1	4.0	0.426	11.1	LOS B	1.3	33.4	0.21	0.58	0.21	33.4
5	L2	404	4.0	404	4.0	0.426	9.9	LOS A	1.3	33.4	0.21	0.58	0.21	32.9
2	T1	118	4.0	118	4.0	0.426	4.3	LOS A	1.3	33.4	0.21	0.58	0.21	32.9
12	R2	1	4.0	1	4.0	0.426	4.3	LOS A	1.3	33.4	0.21	0.58	0.21	31.6
Approach		524	4.0	524	4.0	0.426	8.7	LOS A	1.3	33.4	0.21	0.58	0.21	32.9
All Vehicles		877	4.2	877	4.2	0.426	7.4	LOS A	1.3	33.4	0.27	0.56	0.27	33.2

Table title: Movement Performance - Vehicles

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
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: 200 [SR 3/SR 302 - 2025 PM Build - West RAB]

Network: N101 [SR 3/ SR 302 2025 PM Build]

Build - Opening Year
2025 AM Peak Hour
Double RAB
Site Category: -
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows Total	Demand Flows HV	Arrival Flows Total	Arrival Flows HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Aver. Back of Queue Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: SR 3														
8	T1	180	3.0	180	3.0	0.337	4.8	LOS A	0.9	22.2	0.39	0.50	0.39	36.6
18	R2	200	3.0	200	3.0	0.337	4.8	LOS A	0.9	22.2	0.39	0.50	0.39	33.1
Approach		380	3.0	380	3.0	0.337	4.8	LOS A	0.9	22.2	0.39	0.50	0.39	35.2
East: SR 302														
1	L2	246	4.0	246	4.0	0.352	10.8	LOS B	0.8	21.7	0.43	0.64	0.43	32.7
16	R2	136	4.0	136	4.0	0.352	5.2	LOS A	0.8	21.7	0.43	0.64	0.43	31.4
Approach		382	4.0	382	4.0	0.352	8.8	LOS A	0.8	21.7	0.43	0.64	0.43	32.2
North: SR 3														
7	L2	130	5.0	130	5.0	0.676	13.1	LOS B	2.7	71.0	0.72	0.73	0.79	30.5
4	T1	555	5.0	555	5.0	0.676	7.5	LOS A	2.7	71.0	0.72	0.73	0.79	34.8
Approach		685	5.0	685	5.0	0.676	8.5	LOS A	2.7	71.0	0.72	0.73	0.79	34.3
All Vehicles		1447	4.2	1447	4.2	0.676	7.6	LOS A	2.7	71.0	0.56	0.65	0.59	34.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
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.

Organisation: PARAMETRIX | Processed: Wednesday, August 21, 2019 4:33:04 PM
Project: U:\PSO\Projects\Clients\1631-WSDOT\234-1631-130 SR3FreightCorr TOAA\02WBS\07_OperationsAnalysis\SR3_RBTs_v3.sip8

MOVEMENT SUMMARY

Site: 222 [SR 3/SR 302 - 2025 PM Build - East RAB]

Network: N101 [SR 3/ SR 302 2025 PM Build]

Build - Opening Year
2025 AM Peak Hour
Double RAB
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Bellwood Lane														
3	L2	1	3.0	1	3.0	0.005	11.5	LOS B	0.0	0.2	0.48	0.57	0.48	30.9
3a	L1	1	3.0	1	3.0	0.005	10.4	LOS B	0.0	0.2	0.48	0.57	0.48	34.8
8	T1	1	3.0	1	3.0	0.005	5.9	LOS A	0.0	0.2	0.48	0.57	0.48	35.1
18	R2	1	3.0	1	3.0	0.005	5.9	LOS A	0.0	0.2	0.48	0.57	0.48	34.2
Approach		5	3.0	5	3.0	0.005	8.4	LOS A	0.0	0.2	0.48	0.57	0.48	34.1
East: SR 302														
1	L2	1	4.0	1	4.0	0.180	10.9	LOS B	0.4	9.1	0.40	0.52	0.40	36.4
6	T1	155	4.0	155	4.0	0.180	5.3	LOS A	0.4	9.1	0.40	0.52	0.40	32.8
16a	R1	1	4.0	1	4.0	0.180	4.9	LOS A	0.4	9.1	0.40	0.52	0.40	36.1
16	R2	30	4.0	30	4.0	0.180	5.3	LOS A	0.4	9.1	0.40	0.52	0.40	35.3
Approach		187	4.0	187	4.0	0.180	5.3	LOS A	0.4	9.1	0.40	0.52	0.40	33.5
North: SR 3 Bypass														
7	L2	42	5.0	42	5.0	0.315	10.7	LOS B	0.7	18.8	0.39	0.56	0.39	36.3
4	T1	1	5.0	1	5.0	0.315	5.0	LOS A	0.7	18.8	0.39	0.56	0.39	36.4
14	R2	298	5.0	298	5.0	0.315	5.0	LOS A	0.7	18.8	0.39	0.56	0.39	32.8
14b	R3	1	5.0	1	5.0	0.315	5.2	LOS A	0.7	18.8	0.39	0.56	0.39	34.9
Approach		342	5.0	342	5.0	0.315	5.7	LOS A	0.7	18.8	0.39	0.56	0.39	33.5
NorthWest: School Driveway														
7bx	L3	1	3.0	1	3.0	0.006	13.6	LOS B	0.0	0.3	0.57	0.59	0.57	35.0
7ax	L1	1	3.0	1	3.0	0.006	11.2	LOS B	0.0	0.3	0.57	0.59	0.57	34.3
14ax	R1	1	3.0	1	3.0	0.006	6.4	LOS A	0.0	0.3	0.57	0.59	0.57	34.4
14bx	R3	1	3.0	1	3.0	0.006	6.9	LOS A	0.0	0.3	0.57	0.59	0.57	30.2
Approach		5	3.0	5	3.0	0.006	9.5	LOS A	0.0	0.3	0.57	0.59	0.57	33.9
West: SR 302														
5b	L3	1	4.0	1	4.0	0.326	11.2	LOS B	0.9	22.9	0.24	0.55	0.24	33.9
5	L2	231	4.0	231	4.0	0.326	10.0	LOS B	0.9	22.9	0.24	0.55	0.24	33.4
2	T1	160	4.0	160	4.0	0.326	4.4	LOS A	0.9	22.9	0.24	0.55	0.24	33.4
12	R2	1	4.0	1	4.0	0.326	4.4	LOS A	0.9	22.9	0.24	0.55	0.24	32.1
Approach		393	4.0	393	4.0	0.326	7.7	LOS A	0.9	22.9	0.24	0.55	0.24	33.4
All Vehicles		931	4.4	931	4.4	0.326	6.5	LOS A	0.9	22.9	0.33	0.55	0.33	33.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
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: 221 [SR 3/SR 302 - 2040 AM Three Connector Build - West RAB]

Network: N101 [SR3 3/SR 302 2040 AM Build Three Connectors]

Build - Opening Year
2025 AM Peak Hour
Double RAB
Site Category: -
Roundabout

Movement Performance - Vehicles														
Mov ID	Turn	Demand Flows Total	HV	Arrival Flows Total	HV	Deg. Satn	Average Delay	Level of Service	Aver. Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed
		veh/h	%	veh/h	%	v/c	sec		veh	ft				mph
South: SR 3														
8	T1	292	3.0	292	3.0	0.711	5.2	LOS A	3.1	80.1	0.59	0.54	0.59	36.1
18	R2	613	3.0	613	3.0	0.711	5.2	LOS A	3.1	80.1	0.59	0.54	0.59	32.2
Approach		905	3.0	905	3.0	0.711	5.2	LOS A	3.1	80.1	0.59	0.54	0.59	34.0
East: SR 302														
1	L2	329	4.0	329	4.0	0.396	11.3	LOS B	1.0	27.0	0.56	0.70	0.56	31.9
16	R2	108	4.0	108	4.0	0.396	5.6	LOS A	1.0	27.0	0.56	0.70	0.56	30.7
Approach		437	4.0	437	4.0	0.396	9.9	LOS A	1.0	27.0	0.56	0.70	0.56	31.6
North: SR 3														
7	L2	119	5.0	119	5.0	0.298	11.3	LOS B	0.7	18.6	0.54	0.64	0.54	30.9
4	T1	196	5.0	196	5.0	0.298	5.7	LOS A	0.7	18.6	0.54	0.64	0.54	35.1
Approach		315	5.0	315	5.0	0.298	7.8	LOS A	0.7	18.6	0.54	0.64	0.54	34.0
All Vehicles		1657	3.6	1657	3.6	0.711	7.0	LOS A	3.1	80.1	0.57	0.60	0.57	33.3

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
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: 2 [SR 3/SR 302 - 2040 AM Three Connector Build - East RAB]

Network: N101 [SR3 3/SR 302 2040 AM Build Three Connectors]

Build - Opening Year
2025 AM Peak Hour
Double RAB
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Bellwood Lane														
3	L2	1	3.0	1	3.0	0.006	13.4	LOS B	0.0	0.4	0.68	0.61	0.68	29.6
3a	L1	1	3.0	1	3.0	0.006	12.3	LOS B	0.0	0.4	0.68	0.61	0.68	33.9
8	T1	1	3.0	1	3.0	0.006	7.8	LOS A	0.0	0.4	0.68	0.61	0.68	34.2
18	R2	1	3.0	1	3.0	0.006	7.8	LOS A	0.0	0.4	0.68	0.61	0.68	33.3
Approach		5	3.0	5	3.0	0.006	10.3	LOS B	0.0	0.4	0.68	0.61	0.68	33.1
East: SR 302														
1	L2	1	4.0	1	4.0	0.170	12.7	LOS B	0.4	9.8	0.63	0.68	0.63	35.6
6	T1	101	4.0	101	4.0	0.170	7.1	LOS A	0.4	9.8	0.63	0.68	0.63	31.7
16a	R1	1	4.0	1	4.0	0.170	6.7	LOS A	0.4	9.8	0.63	0.68	0.63	35.4
16	R2	48	4.0	48	4.0	0.170	7.1	LOS A	0.4	9.8	0.63	0.68	0.63	34.6
Approach		151	4.0	151	4.0	0.170	7.1	LOS A	0.4	9.8	0.63	0.68	0.63	33.1
North: SR 3 Bypass														
7	L2	42	5.0	42	5.0	0.301	10.2	LOS B	0.7	19.3	0.32	0.52	0.32	36.6
4	T1	1	5.0	1	5.0	0.301	4.6	LOS A	0.7	19.3	0.32	0.52	0.32	36.6
14	R2	333	5.0	333	5.0	0.301	4.6	LOS A	0.7	19.3	0.32	0.52	0.32	33.1
14b	R3	1	5.0	1	5.0	0.301	4.8	LOS A	0.7	19.3	0.32	0.52	0.32	35.1
Approach		377	5.0	377	5.0	0.301	5.2	LOS A	0.7	19.3	0.32	0.52	0.32	33.7
NorthWest: School Driveway														
7bx	L3	1	3.0	1	3.0	0.005	13.0	LOS B	0.0	0.3	0.55	0.57	0.55	35.3
7ax	L1	1	3.0	1	3.0	0.005	10.7	LOS B	0.0	0.3	0.55	0.57	0.55	34.5
14ax	R1	1	3.0	1	3.0	0.005	5.9	LOS A	0.0	0.3	0.55	0.57	0.55	34.6
14bx	R3	1	3.0	1	3.0	0.005	6.4	LOS A	0.0	0.3	0.55	0.57	0.55	30.6
Approach		5	3.0	5	3.0	0.005	9.0	LOS A	0.0	0.3	0.55	0.57	0.55	34.1
West: SR 302														
5b	L3	1	4.0	1	4.0	0.550	11.3	LOS B	2.0	52.6	0.31	0.57	0.31	32.9
5	L2	594	4.0	594	4.0	0.550	10.1	LOS B	2.0	52.6	0.31	0.57	0.31	32.4
2	T1	136	4.0	136	4.0	0.550	4.5	LOS A	2.0	52.6	0.31	0.57	0.31	32.4
12	R2	1	4.0	1	4.0	0.550	4.5	LOS A	2.0	52.6	0.31	0.57	0.31	31.2
Approach		732	4.0	732	4.0	0.550	9.1	LOS A	2.0	52.6	0.31	0.57	0.31	32.4
All Vehicles		1270	4.3	1270	4.3	0.550	7.7	LOS A	2.0	52.6	0.35	0.57	0.35	32.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Network Data dialog (Network 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).

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.

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: 200 [SR 3/SR 302 - 2040 PM Build - West RAB]

Build - Horizon Year
2040 PM Peak Hour
Split RAB
Site Category: -
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
8	T1	190	3.0	0.447	4.6	LOS A	3.5	89.3	0.49	0.52	0.49	36.6
18	R2	350	3.0	0.447	4.8	LOS A	3.5	89.3	0.49	0.52	0.49	33.5
Approach		540	3.0	0.447	4.7	LOS A	3.5	89.3	0.49	0.52	0.49	34.8
East: SR 302												
1	L2	492	4.0	0.542	11.0	LOS B	4.2	107.2	0.53	0.66	0.53	32.1
16	R2	150	4.0	0.542	5.2	LOS A	4.2	107.2	0.53	0.66	0.53	30.8
Approach		642	4.0	0.542	9.7	LOS A	4.2	107.2	0.53	0.66	0.53	31.8
North: SR 3												
7	L2	150	5.0	0.848	21.4	LOS C	14.2	368.4	1.00	1.18	1.57	23.8
4	T1	630	5.0	0.848	15.4	LOS B	14.2	368.4	1.00	1.18	1.57	31.4
Approach		780	5.0	0.848	16.6	LOS B	14.2	368.4	1.00	1.18	1.57	30.1
All Vehicles		1962	4.1	0.848	11.1	LOS B	14.2	368.4	0.71	0.83	0.93	31.7

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: 222 [SR 3/SR 302 - 2040 PM Build - East RAB]

Build - Horizon Year
2040 PM Peak Hour
Split RAB
Site Category: -
Roundabout

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
East: SR 302												
6	T1	151	4.0	0.202	5.4	LOS A	1.1	28.2	0.51	0.57	0.51	34.7
16	R2	70	4.0	0.202	5.6	LOS A	1.1	28.2	0.51	0.57	0.51	35.2
Approach		221	4.0	0.202	5.5	LOS A	1.1	28.2	0.51	0.57	0.51	34.9
North: SR 3 Bypass												
7	L2	75	5.0	0.467	10.7	LOS B	3.3	87.0	0.45	0.56	0.45	36.3
14	R2	491	5.0	0.467	4.9	LOS A	3.3	87.0	0.45	0.56	0.45	33.1
Approach		566	5.0	0.467	5.7	LOS A	3.3	87.0	0.45	0.56	0.45	33.7
West: SR 302												
5	L2	382	4.0	0.411	10.2	LOS B	3.1	81.0	0.33	0.58	0.33	32.8
2	T1	151	4.0	0.411	4.3	LOS A	3.1	81.0	0.33	0.58	0.33	32.8
Approach		533	4.0	0.411	8.6	LOS A	3.1	81.0	0.33	0.58	0.33	32.8
All Vehicles		1320	4.4	0.467	6.8	LOS A	3.3	87.0	0.41	0.57	0.41	33.5

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: 2 [SR 3/Lake Flora Road - 2025 AM Build - No PSIC Vols]

Build - Opening Year
2025 AM Peak Hour
No PSIC Volumes
Site Category: -
Roundabout

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
Movement Performance - Vehicles												
South: SR 3 Bypass												
3	L2	10	4.0	0.513	16.2	LOS B	4.1	104.5	0.85	0.95	0.99	34.0
8	T1	310	4.0	0.513	10.6	LOS B	4.1	104.5	0.85	0.95	0.99	34.0
18	R2	30	4.0	0.513	10.6	LOS B	4.1	104.5	0.85	0.95	0.99	33.1
Approach		350	4.0	0.513	10.7	LOS B	4.1	104.5	0.85	0.95	0.99	34.0
East: Lake Flora Road												
1	L2	25	2.0	0.274	16.4	LOS B	1.7	43.6	0.82	0.88	0.82	33.6
6	T1	85	2.0	0.274	10.8	LOS B	1.7	43.6	0.82	0.88	0.82	33.6
16	R2	50	2.0	0.274	10.8	LOS B	1.7	43.6	0.82	0.88	0.82	32.7
Approach		160	2.0	0.274	11.6	LOS B	1.7	43.6	0.82	0.88	0.82	33.3
North: SR 3												
7	L2	15	6.0	0.428	10.5	LOS B	3.0	79.8	0.42	0.52	0.42	36.4
4	T1	145	6.0	0.428	4.9	LOS A	3.0	79.8	0.42	0.52	0.42	36.4
14	R2	310	6.0	0.428	4.9	LOS A	3.0	79.8	0.42	0.52	0.42	35.3
Approach		470	6.0	0.428	5.1	LOS A	3.0	79.8	0.42	0.52	0.42	35.7
West: SR 3												
5	L2	565	4.0	0.616	11.4	LOS B	5.0	128.7	0.59	0.68	0.59	33.8
2	T1	85	4.0	0.616	5.8	LOS A	5.0	128.7	0.59	0.68	0.59	33.8
12	R2	10	4.0	0.616	5.8	LOS A	5.0	128.7	0.59	0.68	0.59	32.9
Approach		660	4.0	0.616	10.6	LOS B	5.0	128.7	0.59	0.68	0.59	33.8
All Vehicles		1640	4.4	0.616	9.2	LOS A	5.0	128.7	0.62	0.71	0.65	34.3

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: 2 [SR 3/Lake Flora Road - 2025 PM Build - No PSIC Vols]

Build - Opening Year
2025 PM Peak Hour
No PSIC Volumes
Site Category: -
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: SR 3 Bypass												
3	L2	11	3.0	0.350	14.1	LOS B	2.3	58.0	0.79	0.83	0.79	34.9
8	T1	191	3.0	0.350	8.5	LOS A	2.3	58.0	0.79	0.83	0.79	34.9
18	R2	34	3.0	0.350	8.5	LOS A	2.3	58.0	0.79	0.83	0.79	33.9
Approach		236	3.0	0.350	8.8	LOS A	2.3	58.0	0.79	0.83	0.79	34.8
East: Lake Flora Road												
1	L2	22	4.0	0.156	13.8	LOS B	0.9	23.0	0.71	0.76	0.71	34.7
6	T1	62	4.0	0.156	8.1	LOS A	0.9	23.0	0.71	0.76	0.71	34.7
16	R2	22	4.0	0.156	8.1	LOS A	0.9	23.0	0.71	0.76	0.71	33.7
Approach		107	4.0	0.156	9.3	LOS A	0.9	23.0	0.71	0.76	0.71	34.5
North: SR 3												
7	L2	62	4.0	0.688	10.8	LOS B	7.4	191.3	0.56	0.53	0.56	36.0
4	T1	225	4.0	0.688	5.2	LOS A	7.4	191.3	0.56	0.53	0.56	36.0
14	R2	506	4.0	0.688	5.2	LOS A	7.4	191.3	0.56	0.53	0.56	34.9
Approach		792	4.0	0.688	5.6	LOS A	7.4	191.3	0.56	0.53	0.56	35.3
West: SR 3												
5	L2	483	3.0	0.641	13.4	LOS B	6.0	154.3	0.73	0.82	0.82	33.4
2	T1	129	3.0	0.641	7.8	LOS A	6.0	154.3	0.73	0.82	0.82	33.4
12	R2	11	3.0	0.641	7.7	LOS A	6.0	154.3	0.73	0.82	0.82	32.5
Approach		624	3.0	0.641	12.1	LOS B	6.0	154.3	0.73	0.82	0.82	33.4
All Vehicles		1758	3.5	0.688	8.6	LOS A	7.4	191.3	0.66	0.69	0.69	34.5

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: 2 [Single Lane - SR 3/Lake Flora Road - 2040 AM Build - Three Connectors]

Three Connectors Build - Horizon Year
2040 AM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3 Bypass												
3	L2	10	4.0	1.373	199.3	LOS F	72.6	1873.1	1.00	3.02	6.34	9.0
8	T1	530	4.0	1.373	193.7	LOS F	72.6	1873.1	1.00	3.02	6.34	9.0
18	R2	105	4.0	1.373	193.7	LOS F	72.6	1873.1	1.00	3.02	6.34	8.9
Approach		645	4.0	1.373	193.8	LOS F	72.6	1873.1	1.00	3.02	6.34	9.0
East: Lake Flora Road												
1	L2	40	2.0	0.537	27.6	LOS C	5.0	127.9	1.00	1.12	1.32	28.8
6	T1	115	2.0	0.537	22.0	LOS C	5.0	127.9	1.00	1.12	1.32	28.8
16	R2	65	2.0	0.537	22.0	LOS C	5.0	127.9	1.00	1.12	1.32	28.1
Approach		220	2.0	0.537	23.0	LOS C	5.0	127.9	1.00	1.12	1.32	28.6
North: SR 3												
7	L2	15	6.0	0.578	10.9	LOS B	5.2	135.9	0.58	0.55	0.58	35.9
4	T1	285	6.0	0.578	5.3	LOS A	5.2	135.9	0.58	0.55	0.58	35.9
14	R2	375	6.0	0.578	5.3	LOS A	5.2	135.9	0.58	0.55	0.58	34.9
Approach		675	6.0	0.578	5.4	LOS A	5.2	135.9	0.58	0.55	0.58	35.3
West: SR 3												
5	L2	745	4.0	0.872	19.1	LOS D	16.2	417.3	1.00	1.05	1.43	30.8
2	T1	165	4.0	0.872	13.5	LOS D	16.2	417.3	1.00	1.05	1.43	30.8
12	R2	10	4.0	0.872	13.5	LOS D	16.2	417.3	1.00	1.05	1.43	30.1
Approach		920	4.0	0.872	18.1	LOS B	16.2	417.3	1.00	1.05	1.43	30.8
All Vehicles		2460	4.4	1.373	61.1	LOS E	72.6	1873.1	0.88	1.44	2.47	19.2

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: 2 [Single Lane - SR 3/Lake Flora Road - 2040 PM Build - Three Connectors]

Three Connectors Build - Horizon Year
2040 PM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3 Bypass												
3	L2	11	3.0	0.756	25.4	LOS C	9.5	244.2	1.00	1.21	1.54	29.9
8	T1	326	3.0	0.756	19.8	LOS B	9.5	244.2	1.00	1.21	1.54	29.9
18	R2	96	3.0	0.756	19.8	LOS B	9.5	244.2	1.00	1.21	1.54	29.2
Approach		433	3.0	0.756	20.0	LOS B	9.5	244.2	1.00	1.21	1.54	29.7
East: Lake Flora Road												
1	L2	219	4.0	0.893	40.9	LOS D	16.3	419.9	1.00	1.48	2.27	24.3
6	T1	270	4.0	0.893	35.3	LOS D	16.3	419.9	1.00	1.48	2.27	24.3
16	R2	28	4.0	0.893	35.3	LOS D	16.3	419.9	1.00	1.48	2.27	23.9
Approach		517	4.0	0.893	37.7	LOS D	16.3	419.9	1.00	1.48	2.27	24.3
North: SR 3												
7	L2	73	4.0	1.247	131.9	LOS F	88.2	2274.8	1.00	3.22	6.24	12.3
4	T1	444	4.0	1.247	126.2	LOS F	88.2	2274.8	1.00	3.22	6.24	12.3
14	R2	562	4.0	1.247	126.2	LOS F	88.2	2274.8	1.00	3.22	6.24	12.1
Approach		1079	4.0	1.247	126.6	LOS F	88.2	2274.8	1.00	3.22	6.24	12.2
West: SR 3												
5	L2	579	3.0	0.988	43.2	LOS E	27.8	712.1	1.00	1.71	2.77	23.4
2	T1	202	3.0	0.988	37.6	LOS E	27.8	712.1	1.00	1.71	2.77	23.4
12	R2	11	3.0	0.988	37.6	LOS E	27.8	712.1	1.00	1.71	2.77	23.0
Approach		792	3.0	0.988	41.7	LOS D	27.8	712.1	1.00	1.71	2.77	23.4
All Vehicles		2820	3.6	1.247	70.1	LOS E	88.2	2274.8	1.00	2.17	3.81	17.9

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: 2 [SR 3/Log Yard Road - 2025 AM No Build]

No Build - Opening Year
2025 AM Peak Hour
Site Category: -
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	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	5	2.0	0.888	11.4	LOS D	17.9	455.4	0.87	0.51	0.87	34.9
8	T1	975	2.0	0.888	5.8	LOS D	17.9	455.4	0.87	0.51	0.87	34.9
18	R2	95	2.0	0.888	5.8	LOS D	17.9	455.4	0.87	0.51	0.87	33.9
Approach		1075	2.0	0.888	5.8	LOS A	17.9	455.4	0.87	0.51	0.87	34.8
East: Park and Ride												
1	L2	50	2.0	0.287	18.1	LOS B	2.0	51.3	0.95	0.96	0.95	32.1
6	T1	5	2.0	0.287	12.5	LOS B	2.0	51.3	0.95	0.96	0.95	32.1
16	R2	60	2.0	0.287	12.4	LOS B	2.0	51.3	0.95	0.96	0.95	31.3
Approach		115	2.0	0.287	14.9	LOS B	2.0	51.3	0.95	0.96	0.95	31.6
North: SR 3												
7	L2	30	2.0	0.446	10.1	LOS B	3.5	89.8	0.31	0.43	0.31	36.6
4	T1	505	2.0	0.446	4.4	LOS A	3.5	89.8	0.31	0.43	0.31	36.6
14	R2	5	2.0	0.446	4.4	LOS A	3.5	89.8	0.31	0.43	0.31	35.5
Approach		540	2.0	0.446	4.8	LOS A	3.5	89.8	0.31	0.43	0.31	36.6
West: Log Yard Road												
5	L2	35	9.0	0.081	13.0	LOS B	0.4	10.6	0.59	0.72	0.59	34.0
2	T1	5	9.0	0.081	7.4	LOS A	0.4	10.6	0.59	0.72	0.59	34.1
12	R2	20	9.0	0.081	7.3	LOS A	0.4	10.6	0.59	0.72	0.59	33.1
Approach		60	9.0	0.081	10.6	LOS B	0.4	10.6	0.59	0.72	0.59	33.7
All Vehicles		1790	2.2	0.888	6.2	LOS A	17.9	455.4	0.70	0.52	0.70	35.0

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: 2 [SR 3/Log Yard Road - 2025 PM No Build]

No Build - Opening Year
2025 PM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles													
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	5	1.0	0.610	10.4	LOS B	5.6	140.1	0.43	0.46	0.43	36.4
8	T1	665	1.0	0.610	4.8	LOS A	5.6	140.1	0.43	0.46	0.43	36.3
18	R2	65	1.0	0.610	4.8	LOS A	5.6	140.1	0.43	0.46	0.43	35.3
Approach		735	1.0	0.610	4.9	LOS A	5.6	140.1	0.43	0.46	0.43	36.2
East: Park and Ride												
1	L2	90	1.0	0.204	13.6	LOS B	1.2	29.6	0.70	0.80	0.70	33.8
6	T1	5	1.0	0.204	8.0	LOS A	1.2	29.6	0.70	0.80	0.70	33.8
16	R2	55	1.0	0.204	8.0	LOS A	1.2	29.6	0.70	0.80	0.70	32.9
Approach		150	1.0	0.204	11.4	LOS B	1.2	29.6	0.70	0.80	0.70	33.5
North: SR 3												
7	L2	65	1.0	0.747	10.9	LOS B	9.3	233.9	0.63	0.52	0.63	35.5
4	T1	815	1.0	0.747	5.3	LOS A	9.3	233.9	0.63	0.52	0.63	35.5
14	R2	5	1.0	0.747	5.3	LOS A	9.3	233.9	0.63	0.52	0.63	34.5
Approach		885	1.0	0.747	5.7	LOS A	9.3	233.9	0.63	0.52	0.63	35.5
West: Log Yard Road												
5	L2	15	9.0	0.099	17.1	LOS B	0.6	16.0	0.83	0.84	0.83	32.6
2	T1	5	9.0	0.099	11.5	LOS B	0.6	16.0	0.83	0.84	0.83	32.7
12	R2	25	9.0	0.099	11.5	LOS B	0.6	16.0	0.83	0.84	0.83	31.8
Approach		45	9.0	0.099	13.4	LOS B	0.6	16.0	0.83	0.84	0.83	32.1
All Vehicles		1815	1.2	0.747	6.0	LOS A	9.3	233.9	0.56	0.53	0.56	35.5

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: 2 [SR 3/Log Yard Road - 2025 AM Build]

Build - Opening Year
2025 AM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	5	2.0	0.527	10.2	LOS B	4.0	100.9	0.33	0.44	0.33	36.7
8	T1	540	2.0	0.527	4.6	LOS A	4.0	100.9	0.33	0.44	0.33	36.7
18	R2	95	2.0	0.527	4.6	LOS A	4.0	100.9	0.33	0.44	0.33	35.6
Approach		640	2.0	0.527	4.7	LOS A	4.0	100.9	0.33	0.44	0.33	36.5
East: Park and Ride												
1	L2	50	2.0	0.141	12.7	LOS B	0.7	18.8	0.61	0.73	0.61	34.7
6	T1	5	2.0	0.141	7.1	LOS A	0.7	18.8	0.61	0.73	0.61	34.7
16	R2	60	2.0	0.141	7.1	LOS A	0.7	18.8	0.61	0.73	0.61	33.7
Approach		115	2.0	0.141	9.6	LOS A	0.7	18.8	0.61	0.73	0.61	34.2
North: SR 3												
7	L2	30	2.0	0.213	9.9	LOS A	1.2	30.0	0.22	0.44	0.22	36.8
4	T1	225	2.0	0.213	4.3	LOS A	1.2	30.0	0.22	0.44	0.22	36.7
14	R2	5	2.0	0.213	4.3	LOS A	1.2	30.0	0.22	0.44	0.22	35.7
Approach		260	2.0	0.213	5.0	LOS A	1.2	30.0	0.22	0.44	0.22	36.7
West: Log Yard Road												
5	L2	35	9.0	0.064	11.2	LOS B	0.3	7.5	0.42	0.63	0.42	34.8
2	T1	5	9.0	0.064	5.6	LOS A	0.3	7.5	0.42	0.63	0.42	34.9
12	R2	20	9.0	0.064	5.6	LOS A	0.3	7.5	0.42	0.63	0.42	33.9
Approach		60	9.0	0.064	8.9	LOS A	0.3	7.5	0.42	0.63	0.42	34.5
All Vehicles		1075	2.4	0.527	5.5	LOS A	4.0	100.9	0.34	0.48	0.34	36.2

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: 2 [SR 3/Log Yard Road - 2025 PM Build]

Build - Opening Year
2025 PM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	5	1.0	0.433	10.2	LOS B	2.9	72.3	0.32	0.44	0.32	36.8
8	T1	455	1.0	0.433	4.6	LOS A	2.9	72.3	0.32	0.44	0.32	36.7
18	R2	65	1.0	0.433	4.6	LOS A	2.9	72.3	0.32	0.44	0.32	35.7
Approach		525	1.0	0.433	4.7	LOS A	2.9	72.3	0.32	0.44	0.32	36.6
East: Park and Ride												
1	L2	90	1.0	0.166	12.0	LOS B	0.9	21.6	0.55	0.72	0.55	34.6
6	T1	5	1.0	0.166	6.4	LOS A	0.9	21.6	0.55	0.72	0.55	34.6
16	R2	55	1.0	0.166	6.4	LOS A	0.9	21.6	0.55	0.72	0.55	33.7
Approach		150	1.0	0.166	9.8	LOS A	0.9	21.6	0.55	0.72	0.55	34.3
North: SR 3												
7	L2	65	1.0	0.516	10.4	LOS B	4.0	101.9	0.40	0.48	0.40	36.2
4	T1	545	1.0	0.516	4.8	LOS A	4.0	101.9	0.40	0.48	0.40	36.2
14	R2	5	1.0	0.516	4.8	LOS A	4.0	101.9	0.40	0.48	0.40	35.1
Approach		615	1.0	0.516	5.4	LOS A	4.0	101.9	0.40	0.48	0.40	36.2
West: Log Yard Road												
5	L2	15	9.0	0.067	13.8	LOS B	0.3	9.3	0.65	0.73	0.65	34.2
2	T1	5	9.0	0.067	8.2	LOS A	0.3	9.3	0.65	0.73	0.65	34.3
12	R2	25	9.0	0.067	8.2	LOS A	0.3	9.3	0.65	0.73	0.65	33.3
Approach		45	9.0	0.067	10.1	LOS B	0.3	9.3	0.65	0.73	0.65	33.7
All Vehicles		1335	1.3	0.516	5.7	LOS A	4.0	101.9	0.40	0.50	0.40	36.0

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: 2 [SR 3/Log Yard Road - 2040 AM No Build]

No Build - Horizon Year
2040 AM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	5	2.0	1.106	63.4	LOS F	88.6	2250.3	1.00	1.33	2.14	19.9
8	T1	1295	2.0	1.106	57.8	LOS F	88.6	2250.3	1.00	1.33	2.14	19.9
18	R2	145	2.0	1.106	57.8	LOS F	88.6	2250.3	1.00	1.33	2.14	19.5
Approach		1445	2.0	1.106	57.8	LOS E	88.6	2250.3	1.00	1.33	2.14	19.8
East: Park and Ride												
1	L2	80	2.0	0.573	34.4	LOS C	5.6	141.4	1.00	1.12	1.33	26.0
6	T1	5	2.0	0.573	28.8	LOS C	5.6	141.4	1.00	1.12	1.33	26.0
16	R2	85	2.0	0.573	28.8	LOS C	5.6	141.4	1.00	1.12	1.33	25.4
Approach		170	2.0	0.573	31.5	LOS C	5.6	141.4	1.00	1.12	1.33	25.7
North: SR 3												
7	L2	60	2.0	0.553	10.3	LOS B	5.2	132.0	0.43	0.47	0.43	36.1
4	T1	655	2.0	0.553	4.7	LOS A	5.2	132.0	0.43	0.47	0.43	36.1
14	R2	5	2.0	0.553	4.6	LOS A	5.2	132.0	0.43	0.47	0.43	35.1
Approach		720	2.0	0.553	5.1	LOS A	5.2	132.0	0.43	0.47	0.43	36.1
West: Log Yard Road												
5	L2	40	9.0	0.094	14.3	LOS B	0.5	14.5	0.72	0.77	0.72	33.3
2	T1	5	9.0	0.094	8.6	LOS A	0.5	14.5	0.72	0.77	0.72	33.4
12	R2	20	9.0	0.094	8.6	LOS A	0.5	14.5	0.72	0.77	0.72	32.4
Approach		65	9.0	0.094	12.1	LOS B	0.5	14.5	0.72	0.77	0.72	33.0
All Vehicles		2400	2.2	1.106	38.9	LOS D	88.6	2250.3	0.82	1.04	1.53	23.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). 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.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
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: 2 [SR 3/Log Yard Road - 2040 PM No Build]

No Build - Design Year
2040 PM Peak Hour
Site Category: -
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: SR 3												
3	L2	10	1.0	0.811	11.7	LOS B	11.8	298.0	0.81	0.61	0.83	35.2
8	T1	755	1.0	0.811	6.1	LOS A	11.8	298.0	0.81	0.61	0.83	35.2
18	R2	255	1.0	0.811	6.1	LOS A	11.8	298.0	0.81	0.61	0.83	34.2
Approach		1020	1.0	0.811	6.1	LOS A	11.8	298.0	0.81	0.61	0.83	34.9
East: Park and Ride												
1	L2	280	1.0	0.620	18.4	LOS B	6.3	159.8	0.98	1.07	1.25	31.5
6	T1	10	1.0	0.620	12.8	LOS B	6.3	159.8	0.98	1.07	1.25	31.4
16	R2	135	1.0	0.620	12.8	LOS B	6.3	159.8	0.98	1.07	1.25	30.7
Approach		425	1.0	0.620	16.5	LOS B	6.3	159.8	0.98	1.07	1.25	31.2
North: SR 3												
7	L2	130	1.0	1.081	58.9	LOS F	57.1	1438.7	1.00	1.87	3.10	20.7
4	T1	1050	1.0	1.081	53.3	LOS F	57.1	1438.7	1.00	1.87	3.10	20.6
14	R2	10	1.0	1.081	53.2	LOS F	57.1	1438.7	1.00	1.87	3.10	20.3
Approach		1190	1.0	1.081	53.9	LOS D	57.1	1438.7	1.00	1.87	3.10	20.6
West: Log Yard Road												
5	L2	15	9.0	0.242	28.9	LOS C	1.8	48.5	1.00	0.98	1.00	27.9
2	T1	10	9.0	0.242	23.3	LOS C	1.8	48.5	1.00	0.98	1.00	28.0
12	R2	30	9.0	0.242	23.3	LOS C	1.8	48.5	1.00	0.98	1.00	27.3
Approach		55	9.0	0.242	24.8	LOS C	1.8	48.5	1.00	0.98	1.00	27.6
All Vehicles		2690	1.2	1.081	29.3	LOS C	57.1	1438.7	0.92	1.25	1.90	26.2

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: 2 [SR 3/Log Yard Road - 2040 AM Build - Three Connectors]

Three Connector Build - Horizon Year
2040 AM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	5	2.0	0.683	11.0	LOS B	6.3	160.5	0.56	0.54	0.56	36.0
8	T1	700	2.0	0.683	5.4	LOS A	6.3	160.5	0.56	0.54	0.56	35.9
18	R2	165	2.0	0.683	5.3	LOS A	6.3	160.5	0.56	0.54	0.56	34.9
Approach		870	2.0	0.683	5.4	LOS A	6.3	160.5	0.56	0.54	0.56	35.7
East: Park and Ride												
1	L2	80	2.0	0.262	13.9	LOS B	1.7	43.6	0.78	0.82	0.78	34.2
6	T1	10	2.0	0.262	8.3	LOS A	1.7	43.6	0.78	0.82	0.78	34.2
16	R2	110	2.0	0.262	8.2	LOS A	1.7	43.6	0.78	0.82	0.78	33.2
Approach		200	2.0	0.262	10.5	LOS B	1.7	43.6	0.78	0.82	0.78	33.7
North: SR 3												
7	L2	85	2.0	0.245	10.0	LOS B	1.5	37.7	0.29	0.49	0.29	36.1
4	T1	230	2.0	0.245	4.4	LOS A	1.5	37.7	0.29	0.49	0.29	36.1
14	R2	5	2.0	0.245	4.4	LOS A	1.5	37.7	0.29	0.49	0.29	35.1
Approach		320	2.0	0.245	5.9	LOS A	1.5	37.7	0.29	0.49	0.29	36.1
West: Log Yard Road												
5	L2	40	9.0	0.076	11.4	LOS B	0.4	9.5	0.47	0.64	0.47	34.8
2	T1	20	9.0	0.076	5.8	LOS A	0.4	9.5	0.47	0.64	0.47	34.8
12	R2	15	9.0	0.076	5.8	LOS A	0.4	9.5	0.47	0.64	0.47	33.8
Approach		75	9.0	0.076	8.8	LOS A	0.4	9.5	0.47	0.64	0.47	34.6
All Vehicles		1465	2.4	0.683	6.4	LOS A	6.3	160.5	0.52	0.57	0.52	35.5

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: 2 [SR 3/Log Yard Road - 2040 PM Build - Three Connectors]

Three Connectors Build - Horizon Year
2040 PM Peak Hour
Site Category: -
Roundabout

Movement Performance - Vehicles

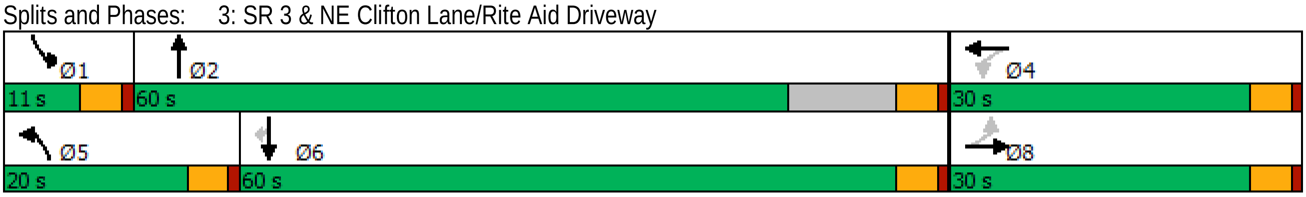
Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: SR 3												
3	L2	10	1.0	0.656	11.4	LOS B	6.2	157.0	0.67	0.60	0.68	35.8
8	T1	460	1.0	0.656	5.8	LOS A	6.2	157.0	0.67	0.60	0.68	35.7
18	R2	315	1.0	0.656	5.8	LOS A	6.2	157.0	0.67	0.60	0.68	34.7
Approach		785	1.0	0.656	5.8	LOS A	6.2	157.0	0.67	0.60	0.68	35.3
East: Park and Ride												
1	L2	315	1.0	0.545	13.3	LOS B	4.6	115.4	0.77	0.84	0.84	34.0
6	T1	30	1.0	0.545	7.7	LOS A	4.6	115.4	0.77	0.84	0.84	34.0
16	R2	185	1.0	0.545	7.6	LOS A	4.6	115.4	0.77	0.84	0.84	33.1
Approach		530	1.0	0.545	11.0	LOS B	4.6	115.4	0.77	0.84	0.84	33.7
North: SR 3												
7	L2	175	1.0	0.738	14.4	LOS B	9.2	231.7	0.86	0.86	1.03	34.3
4	T1	605	1.0	0.738	8.8	LOS A	9.2	231.7	0.86	0.86	1.03	34.3
14	R2	10	1.0	0.738	8.8	LOS A	9.2	231.7	0.86	0.86	1.03	33.4
Approach		790	1.0	0.738	10.1	LOS B	9.2	231.7	0.86	0.86	1.03	34.3
West: Log Yard Road												
5	L2	15	9.0	0.160	18.7	LOS B	1.1	29.4	0.92	0.89	0.92	32.2
2	T1	25	9.0	0.160	13.1	LOS B	1.1	29.4	0.92	0.89	0.92	32.2
12	R2	30	9.0	0.160	13.1	LOS B	1.1	29.4	0.92	0.89	0.92	31.4
Approach		70	9.0	0.160	14.3	LOS B	1.1	29.4	0.92	0.89	0.92	31.8
All Vehicles		2175	1.3	0.738	8.9	LOS A	9.2	231.7	0.77	0.76	0.85	34.4

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.

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	445	25	5	5	65	580	5	370	140
Future Volume (vph)	445	25	5	5	65	580	5	370	140
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	27.0	27.0	27.0	27.0	9.3	50.9	6.5	41.9	41.9
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.10	0.57	0.07	0.47	0.47
v/c Ratio	1.23	0.14	0.01	0.06	0.39	0.62	0.08	0.89	0.33
Control Delay	158.6	16.3	30.8	15.7	49.3	15.2	49.8	45.4	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.6	16.3	30.8	15.7	49.3	15.2	49.8	45.4	4.6
LOS	F	B	C	B	D	B	D	D	A
Approach Delay		140.6		18.1		18.6		34.3	
Approach LOS		F		B		B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 89.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay: 59.8	Intersection LOS: E
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	260	195	640	400	15
Future Vol, veh/h	10	260	195	640	400	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	9	9	3	3	7	7
Mvmt Flow	11	295	222	727	455	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1635	464	472	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	1171	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	107	584	1085	-	-	-
Stage 1	619	-	-	-	-	-
Stage 2	285	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	85	584	1085	-	-	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	492	-	-	-	-	-
Stage 2	285	-	-	-	-	-

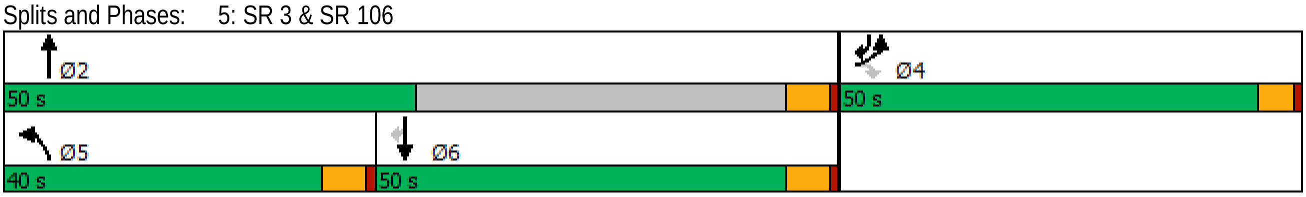
Approach	EB	NB	SB
HCM Control Delay, s	19.8	2.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1085	-	56	584	-	-
HCM Lane V/C Ratio	0.204	-	0.203	0.506	-	-
HCM Control Delay (s)	9.2	-	85	17.3	-	-
HCM Lane LOS	A	-	F	C	-	-
HCM 95th %tile Q(veh)	0.8	-	0.7	2.8	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	260	75	15	595	475	110
Future Volume (vph)	260	75	15	595	475	110
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	50.0	50.0
Total Split (%)	35.7%	35.7%	28.6%	35.7%	35.7%	35.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	20.3	20.3	6.7	47.7	43.4	73.0
Actuated g/C Ratio	0.26	0.26	0.08	0.60	0.55	0.92
v/c Ratio	0.73	0.20	0.13	0.67	0.61	0.10
Control Delay	38.5	7.1	41.4	15.3	19.1	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.5	7.1	41.4	15.3	19.1	0.5
LOS	D	A	D	B	B	A
Approach Delay	31.5			16.0	15.6	
Approach LOS	C			B	B	

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 79	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay: 19.2	Intersection LOS: B
Intersection Capacity Utilization 57.1%	ICU Level of Service B
Analysis Period (min) 15	

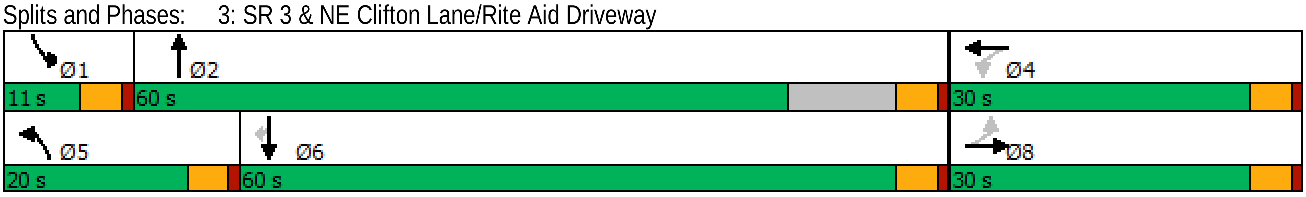
Splits and Phases: 5: SR 3 & SR 106



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	335	20	15	25	95	370	5	620	430
Future Volume (vph)	335	20	15	25	95	370	5	620	430
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	25.5	25.5	25.5	25.5	11.8	69.6	6.2	55.4	55.4
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.11	0.65	0.06	0.52	0.52
v/c Ratio	1.29	0.42	0.09	0.10	0.60	0.39	0.11	1.43	0.76
Control Delay	188.0	9.9	34.3	25.9	58.8	10.3	53.4	229.1	10.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	188.0	9.9	34.3	25.9	58.8	10.3	53.4	229.1	10.3
LOS	F	A	C	C	E	B	D	F	B
Approach Delay		125.7		28.4		20.0		139.1	
Approach LOS		F		C		B		F	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 106.4	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay: 106.1	Intersection LOS: F
Intersection Capacity Utilization 105.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	43

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	385	265	490	890	20
Future Vol, veh/h	5	385	265	490	890	20
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	2	2	2	2
Mvmt Flow	5	414	285	527	957	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2069	972	981	0	-	0
Stage 1	970	-	-	-	-	-
Stage 2	1099	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.12	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	59	~ 304	704	-	-	-
Stage 1	365	-	-	-	-	-
Stage 2	316	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	35	~ 303	703	-	-	-
Mov Cap-2 Maneuver	27	-	-	-	-	-
Stage 1	217	-	-	-	-	-
Stage 2	315	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	217.4	4.8	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	703	-	27	303	-	-
HCM Lane V/C Ratio	0.405	-	0.199	1.366	-	-
HCM Control Delay (s)	13.6	-	168.9	218	-	-
HCM Lane LOS	B	-	F	F	-	-
HCM 95th %tile Q(veh)	2	-	0.6	21.2	-	-

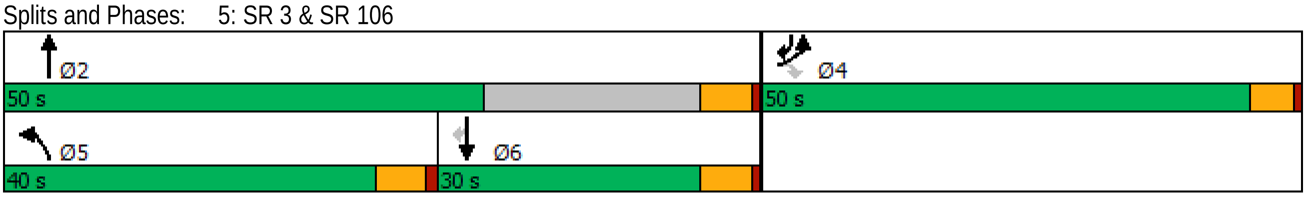
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	40	55	460	985	440
Future Volume (vph)	180	40	55	460	985	440
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	30.0	50.0
Total Split (%)	41.7%	41.7%	33.3%	41.7%	25.0%	41.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	12.6	12.6	7.5	32.5	25.0	38.4
Actuated g/C Ratio	0.22	0.22	0.13	0.58	0.45	0.69
v/c Ratio	0.48	0.11	0.24	0.45	1.26	0.39
Control Delay	25.4	8.2	27.5	8.5	149.6	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.4	8.2	27.5	8.5	149.6	2.0
LOS	C	A	C	A	F	A
Approach Delay	22.3			10.5	104.0	
Approach LOS	C			B	F	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 56
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.26
Intersection Signal Delay: 73.4 Intersection LOS: E
Intersection Capacity Utilization 74.1% ICU Level of Service D
Analysis Period (min) 15

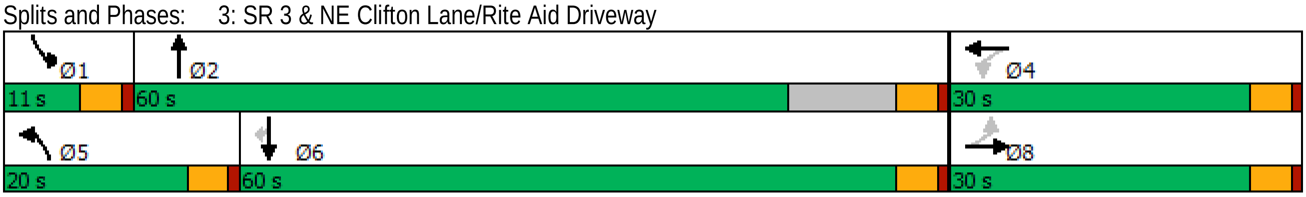
Splits and Phases: 5: SR 3 & SR 106



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	465	25	5	5	65	240	5	220	145
Future Volume (vph)	465	25	5	5	65	240	5	220	145
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	26.8	26.8	26.8	26.8	8.5	31.3	6.4	23.0	23.0
Actuated g/C Ratio	0.39	0.39	0.39	0.39	0.12	0.45	0.09	0.33	0.33
v/c Ratio	1.01	0.11	0.01	0.04	0.33	0.33	0.06	0.75	0.43
Control Delay	72.5	11.3	20.6	11.1	36.8	12.7	37.8	37.0	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.5	11.3	20.6	11.1	36.8	12.7	37.8	37.0	7.1
LOS	E	B	C	B	D	B	D	D	A
Approach Delay		65.0		12.6		17.7		25.2	
Approach LOS		E		B		B		C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 69.4	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 40.1	Intersection LOS: D
Intersection Capacity Utilization 72.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	260	195	300	250	15
Future Vol, veh/h	10	260	195	300	250	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	9	9	3	3	7	7
Mvmt Flow	11	295	222	341	284	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1078	293	301	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	235	730	1254	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	193	730	1254	-	-	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	437	-	-	-	-	-

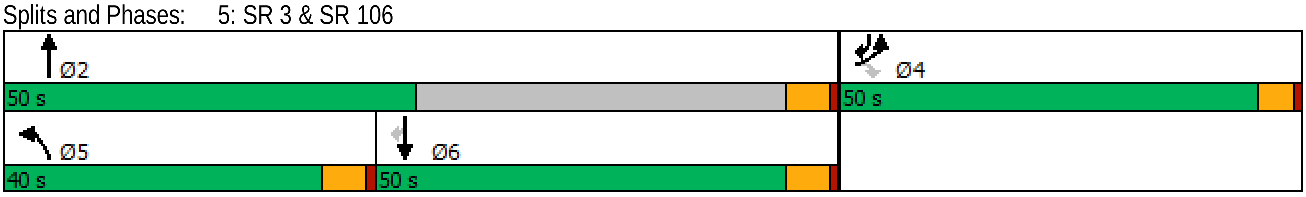
Approach	EB	NB	SB
HCM Control Delay, s	13.6	3.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1254	-	195	730	-	-
HCM Lane V/C Ratio	0.177	-	0.058	0.405	-	-
HCM Control Delay (s)	8.5	-	24.6	13.2	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.6	-	0.2	2	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	270	75	15	250	325	110
Future Volume (vph)	270	75	15	250	325	110
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	50.0	50.0
Total Split (%)	35.7%	35.7%	28.6%	35.7%	35.7%	35.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	19.5	19.5	7.4	24.6	20.9	51.4
Actuated g/C Ratio	0.35	0.35	0.13	0.44	0.37	0.91
v/c Ratio	0.57	0.16	0.08	0.39	0.62	0.10
Control Delay	22.3	5.7	33.5	12.2	21.9	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.3	5.7	33.5	12.2	21.9	0.6
LOS	C	A	C	B	C	A
Approach Delay	18.7			13.4	16.5	
Approach LOS	B			B	B	

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 56.4	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 16.5	Intersection LOS: B
Intersection Capacity Utilization 42.7%	ICU Level of Service A
Analysis Period (min) 15	

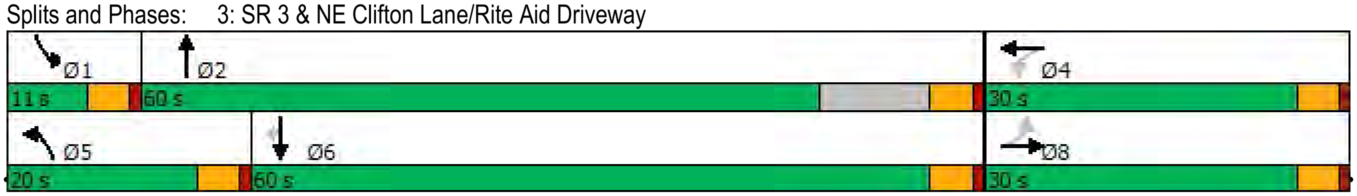
Splits and Phases: 5: SR 3 & SR 106



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	335	20	160	15	25	10	95	160	10	5	350	430
Future Volume (vph)	335	20	160	15	25	10	95	160	10	5	350	430
Satd. Flow (prot)	1660	1515	0	1710	1721	0	1676	1749	0	931	980	833
Flt Permitted	0.730			0.509			0.950			0.950		
Satd. Flow (perm)	1276	1515	0	916	1721	0	1674	1749	0	931	980	815
Satd. Flow (RTOR)		188			12			5				506
Lane Group Flow (vph)	394	212	0	18	41	0	112	200	0	6	412	506
Turn Type	Perm	NA		Perm	NA		Prot	NA		Prot	NA	Perm
Protected Phases		8			4		5	2		1	6	
Permitted Phases	8			4								6
Detector Phase	8	8		4	4		5	2		1	6	6
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		6.0	10.0		6.0	10.0	10.0
Minimum Split (s)	29.5	29.5		29.5	29.5		10.5	27.6		10.5	27.6	27.6
Total Split (s)	30.0	30.0		30.0	30.0		20.0	60.0		11.0	60.0	60.0
Total Split (%)	27.3%	27.3%		27.3%	27.3%		18.2%	54.5%		10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.6		3.5	3.6	3.6
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.6		4.5	4.6	4.6
Lead/Lag							Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Min		None	Min	Min
Act Effct Green (s)	26.7	26.7		26.7	26.7		11.5	56.3		6.5	45.4	45.4
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.12	0.60		0.07	0.48	0.48
v/c Ratio	1.09	0.38		0.07	0.08		0.55	0.19		0.10	0.87	0.77
Control Delay	112.3	9.5		33.1	25.2		53.6	8.6		52.0	43.9	11.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	112.3	9.5		33.1	25.2		53.6	8.6		52.0	43.9	11.1
LOS	F	A		C	C		D	A		D	D	B
Approach Delay		76.3			27.6			24.8			26.0	
Approach LOS		E			C			C			C	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 94.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 41.9	Intersection LOS: D
Intersection Capacity Utilization 78.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	180	40	55	255	710	440
Future Volume (vph)	180	40	55	255	710	440
Satd. Flow (prot)	1660	1485	1676	1765	1748	1485
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1660	1485	1675	1765	1748	1452
Satd. Flow (RTOR)		40				440
Lane Group Flow (vph)	180	40	55	255	710	440
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	30.0	50.0
Total Split (%)	41.7%	41.7%	33.3%	41.7%	25.0%	41.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	12.5	12.5	7.5	32.5	25.0	38.3
Actuated g/C Ratio	0.22	0.22	0.13	0.58	0.45	0.69
v/c Ratio	0.49	0.11	0.24	0.25	0.91	0.39
Control Delay	25.5	8.2	27.5	6.6	37.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	8.2	27.5	6.6	37.4	1.5
LOS	C	A	C	A	D	A
Approach Delay	22.4			10.3	23.7	
Approach LOS	C			B	C	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 55.9	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 21.0	Intersection LOS: C
Intersection Capacity Utilization 67.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: SR 3 & SR 106

Intersection	
Int Delay, s/veh	16.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	385	265	285	620	20
Future Vol, veh/h	5	385	265	285	620	20
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	2	2	2	2
Mvmt Flow	5	414	285	306	667	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1558	682	691	0	-	0
Stage 1	680	-	-	-	-	-
Stage 2	878	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.12	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	122	446	904	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	403	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	83	444	902	-	-	-
Mov Cap-2 Maneuver	206	-	-	-	-	-
Stage 1	341	-	-	-	-	-
Stage 2	402	-	-	-	-	-

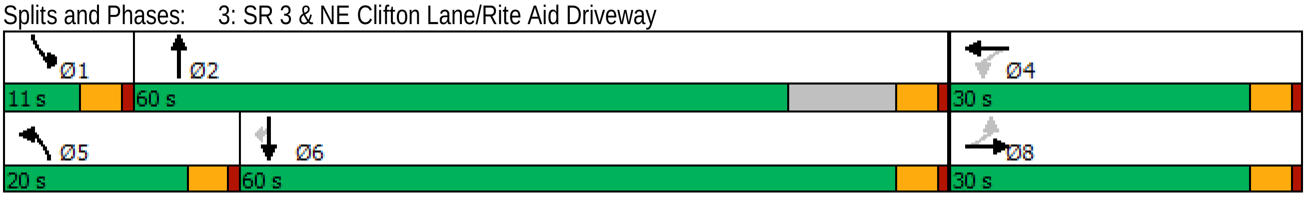
Approach	EB		NB		SB	
HCM Control Delay, s	57.7		5.2		0	
HCM LOS	F					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	902	-	206	444	-	-
HCM Lane V/C Ratio	0.316	-	0.026	0.932	-	-
HCM Control Delay (s)	10.8	-	22.9	58.2	-	-
HCM Lane LOS	B	-	C	F	-	-
HCM 95th %tile Q(veh)	1.4	-	0.1	10.7	-	-

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	540	30	5	10	75	790	5	495	170
Future Volume (vph)	540	30	5	10	75	790	5	495	170
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	25.6	25.6	25.6	25.6	10.0	65.8	6.2	55.7	55.7
Actuated g/C Ratio	0.25	0.25	0.25	0.25	0.10	0.64	0.06	0.54	0.54
v/c Ratio	1.83	0.20	0.02	0.09	0.49	0.75	0.09	1.03	0.36
Control Delay	412.1	16.5	31.8	16.7	54.8	18.8	52.0	74.0	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	412.1	16.5	31.8	16.7	54.8	18.8	52.0	74.0	4.4
LOS	F	B	C	B	D	B	D	E	A
Approach Delay		360.6		18.5		21.9		56.2	
Approach LOS		F		B		C		E	

Intersection Summary	
Cycle Length: 110	
Actuated Cycle Length: 102.6	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.83	
Intersection Signal Delay: 127.8	Intersection LOS: F
Intersection Capacity Utilization 104.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	300	225	870	535	15
Future Vol, veh/h	10	300	225	870	535	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	9	9	3	3	7	7
Mvmt Flow	11	341	256	989	608	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2118	617	625	0	-	0
Stage 1	617	-	-	-	-	-
Stage 2	1501	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	53	477	952	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	196	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	39	477	952	-	-	-
Mov Cap-2 Maneuver	~ -91	-	-	-	-	-
Stage 1	384	-	-	-	-	-
Stage 2	196	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s			2.1		0	
HCM LOS	-					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	952	-	+	477	-	-
HCM Lane V/C Ratio	0.269	-	-	0.715	-	-
HCM Control Delay (s)	10.2	-	-	29.3	-	-
HCM Lane LOS	B	-	-	D	-	-
HCM 95th %tile Q(veh)	1.1	-	-	5.6	-	-

Notes

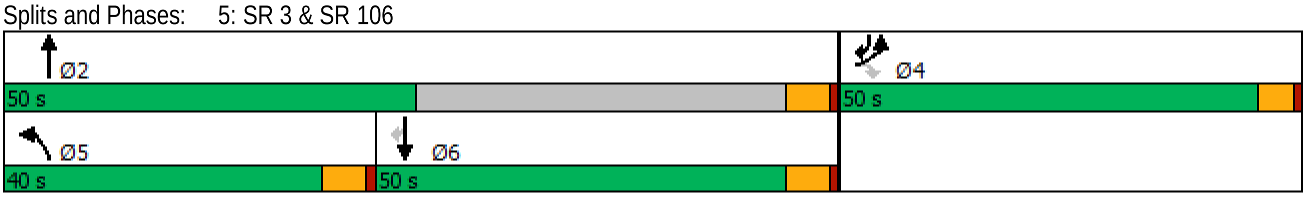
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	310	90	15	805	625	130
Future Volume (vph)	310	90	15	805	625	130
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	50.0	50.0
Total Split (%)	35.7%	35.7%	28.6%	35.7%	35.7%	35.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	23.9	23.9	6.8	50.0	45.5	78.7
Actuated g/C Ratio	0.28	0.28	0.08	0.59	0.54	0.93
v/c Ratio	0.80	0.22	0.14	0.93	0.82	0.12
Control Delay	42.0	6.1	44.5	34.3	30.1	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	42.0	6.1	44.5	34.3	30.1	0.5
LOS	D	A	D	C	C	A
Approach Delay	34.0			34.5	25.0	
Approach LOS	C			C	C	

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 84.8
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 30.7 Intersection LOS: C
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: SR 3 & SR 106

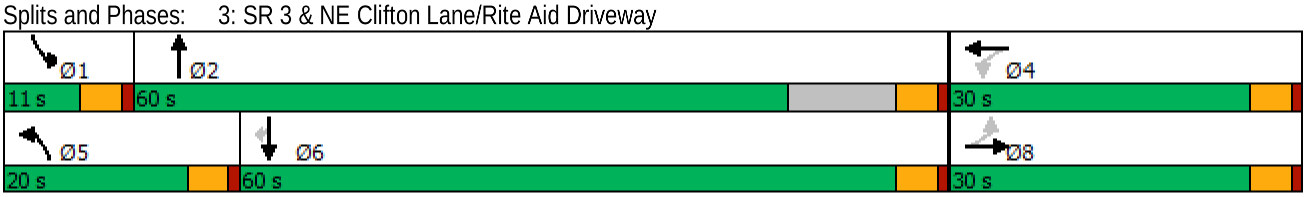


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	465	20	20	25	110	515	10	895	600
Future Volume (vph)	465	20	20	25	110	515	10	895	600
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	25.5	25.5	25.5	25.5	12.6	70.4	6.3	55.5	55.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.12	0.66	0.06	0.52	0.52
v/c Ratio	1.81	0.46	0.14	0.11	0.65	0.54	0.22	2.08	0.94
Control Delay	405.7	9.7	36.0	23.8	61.2	12.6	59.1	513.4	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	405.7	9.7	36.0	23.8	61.2	12.6	59.1	513.4	25.7
LOS	F	A	D	C	E	B	E	F	C
Approach Delay		284.2		27.9		20.9		315.9	
Approach LOS		F		C		C		F	

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 107.2
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.08
Intersection Signal Delay: 236.8 Intersection LOS: F
Intersection Capacity Utilization 137.9% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	126.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	445	305	655	1205	20
Future Vol, veh/h	5	445	305	655	1205	20
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	2	2	2	2
Mvmt Flow	5	478	328	704	1296	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2671	1311	1320	0	-	0
Stage 1	1309	-	-	-	-	-
Stage 2	1362	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.12	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	24	~ 192	524	-	-	-
Stage 1	250	-	-	-	-	-
Stage 2	236	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	9	~ 191	523	-	-	-
Mov Cap-2 Maneuver	465	-	-	-	-	-
Stage 1	93	-	-	-	-	-
Stage 2	236	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay,	$ 723.2	7.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	523	-	465	191	-	-
HCM Lane V/C Ratio	0.627	-	0.012	2.505	-	-
HCM Control Delay (s)	22.8	-	12.8	$ 731.2	-	-
HCM Lane LOS	C	-	B	F	-	-
HCM 95th %tile Q(veh)	4.3	-	0	40.4	-	-

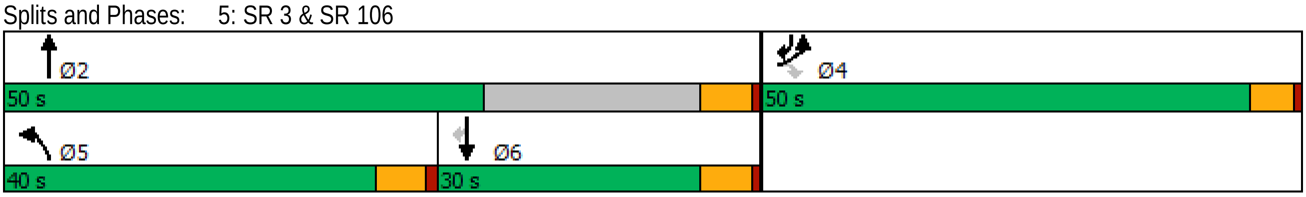
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	235	45	60	595	1255	565
Future Volume (vph)	235	45	60	595	1255	565
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	30.0	50.0
Total Split (%)	41.7%	41.7%	33.3%	41.7%	25.0%	41.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	15.3	15.3	8.0	33.1	25.4	41.6
Actuated g/C Ratio	0.26	0.26	0.13	0.56	0.43	0.70
v/c Ratio	0.55	0.11	0.27	0.61	1.68	0.50
Control Delay	25.9	7.4	29.8	12.4	333.2	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	7.4	29.8	12.4	333.2	3.1
LOS	C	A	C	B	F	A
Approach Delay	22.9			14.0	230.7	
Approach LOS	C			B	F	

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 59.5
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.68
Intersection Signal Delay: 158.1 Intersection LOS: F
Intersection Capacity Utilization 92.3% ICU Level of Service F
Analysis Period (min) 15

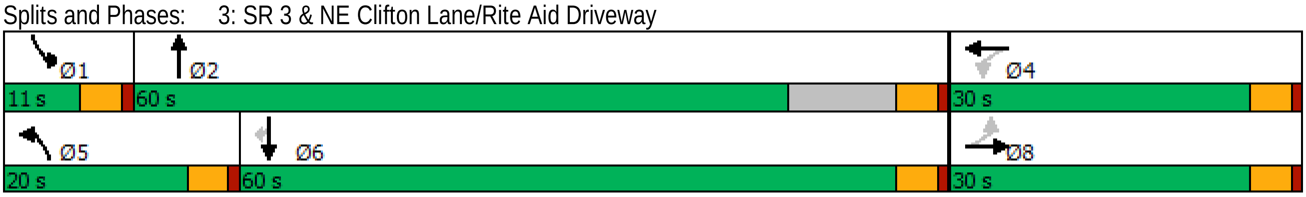
Splits and Phases: 5: SR 3 & SR 106



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	575	30	5	10	75	310	5	230	180
Future Volume (vph)	575	30	5	10	75	310	5	230	180
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	26.9	26.9	26.9	26.9	9.0	33.3	6.5	24.4	24.4
Actuated g/C Ratio	0.38	0.38	0.38	0.38	0.13	0.47	0.09	0.34	0.34
v/c Ratio	1.29	0.14	0.01	0.06	0.38	0.41	0.06	0.76	0.49
Control Delay	172.9	11.6	22.0	12.1	38.5	13.4	39.6	37.4	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	172.9	11.6	22.0	12.1	38.5	13.4	39.6	37.4	7.4
LOS	F	B	C	B	D	B	D	D	A
Approach Delay		153.1		13.3		18.3		24.4	
Approach LOS		F		B		B		C	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 71.5
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.29
Intersection Signal Delay: 78.8 Intersection LOS: E
Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	305	235	385	265	15
Future Vol, veh/h	10	305	235	385	265	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	9	9	3	3	7	7
Mvmt Flow	11	347	267	438	301	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1282	310	318	0	-	0
Stage 1	310	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Critical Hdwy	6.49	6.29	4.13	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.381	2.227	-	-	-
Pot Cap-1 Maneuver	176	714	1236	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	138	714	1236	-	-	-
Mov Cap-2 Maneuver	76	-	-	-	-	-
Stage 1	571	-	-	-	-	-
Stage 2	356	-	-	-	-	-

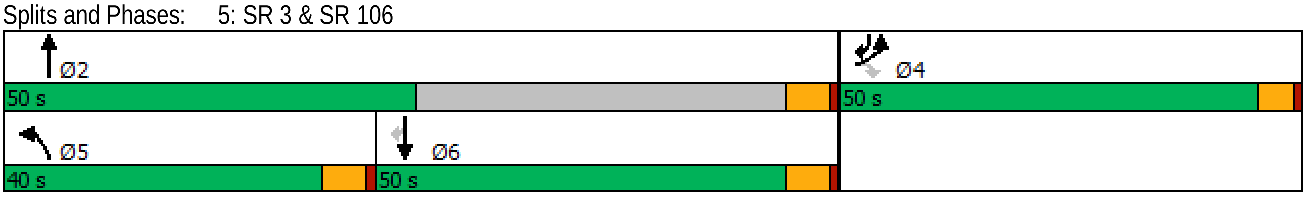
Approach	EB	NB	SB
HCM Control Delay, s	16.2	3.3	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1236	-	76	714	-	-
HCM Lane V/C Ratio	0.216	-	0.15	0.485	-	-
HCM Control Delay (s)	8.7	-	60.5	14.7	-	-
HCM Lane LOS	A	-	F	B	-	-
HCM 95th %tile Q(veh)	0.8	-	0.5	2.7	-	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	330	90	15	325	410	145
Future Volume (vph)	330	90	15	325	410	145
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	50.0	50.0
Total Split (%)	35.7%	35.7%	28.6%	35.7%	35.7%	35.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	25.9	25.9	7.3	36.0	32.2	68.6
Actuated g/C Ratio	0.35	0.35	0.10	0.49	0.44	0.93
v/c Ratio	0.68	0.18	0.11	0.45	0.67	0.13
Control Delay	30.1	5.8	43.6	14.5	24.5	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	5.8	43.6	14.5	24.5	0.5
LOS	C	A	D	B	C	A
Approach Delay	24.9			15.8	18.2	
Approach LOS	C			B	B	

Intersection Summary	
Cycle Length: 140	
Actuated Cycle Length: 73.8	
Natural Cycle: 85	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 50.9%	ICU Level of Service A
Analysis Period (min) 15	

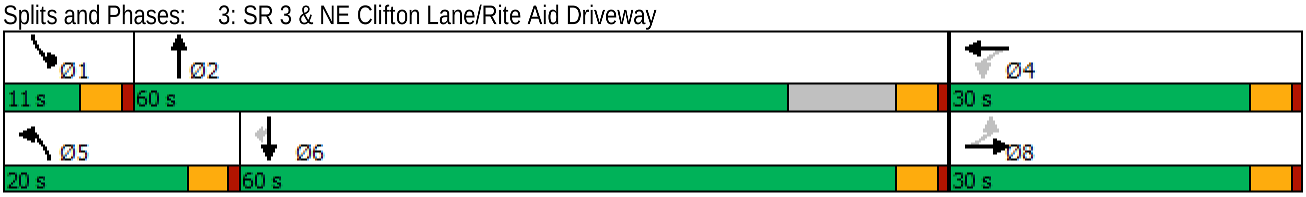
Splits and Phases: 5: SR 3 & SR 106



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	535	20	20	25	110	205	10	425	655
Future Volume (vph)	535	20	20	25	110	205	10	425	655
Turn Type	Perm	NA	Perm	NA	Prot	NA	Prot	NA	Perm
Protected Phases		8		4	5	2	1	6	
Permitted Phases	8		4						6
Detector Phase	8	8	4	4	5	2	1	6	6
Switch Phase									
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	10.0	6.0	10.0	10.0
Minimum Split (s)	29.5	29.5	29.5	29.5	10.5	27.6	10.5	27.6	27.6
Total Split (s)	30.0	30.0	30.0	30.0	20.0	60.0	11.0	60.0	60.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	18.2%	54.5%	10.0%	54.5%	54.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.6	3.5	3.6	3.6
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.6	4.5	4.6	4.6
Lead/Lag					Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?					Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	Min	None	Min	Min
Act Effct Green (s)	25.5	25.5	25.5	25.5	12.6	70.4	6.3	55.5	55.5
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.12	0.66	0.06	0.52	0.52
v/c Ratio	2.08	0.46	0.14	0.11	0.65	0.23	0.22	0.99	1.03
Control Delay	523.4	9.7	36.0	23.8	61.2	8.4	59.1	64.7	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	523.4	9.7	36.0	23.8	61.2	8.4	59.1	64.7	46.9
LOS	F	A	D	C	E	A	E	E	D
Approach Delay		380.7		27.9		25.9		54.0	
Approach LOS		F		C		C		D	

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 107.2
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 2.08
Intersection Signal Delay: 158.0 Intersection LOS: F
Intersection Capacity Utilization 99.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: SR 3 & NE Clifton Lane/Rite Aid Driveway



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	455	310	345	735	20
Future Vol, veh/h	5	455	310	345	735	20
Conflicting Peds, #/hr	2	2	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	300	0	100	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	2	2	2	2
Mvmt Flow	5	489	333	371	790	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1842	805	814	0	-	0
Stage 1	803	-	-	-	-	-
Stage 2	1039	-	-	-	-	-
Critical Hdwy	6.44	6.24	4.12	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	2.218	-	-	-
Pot Cap-1 Maneuver	82	~ 379	813	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	48	~ 378	811	-	-	-
Mov Cap-2 Maneuver	~ -7	-	-	-	-	-
Stage 1	257	-	-	-	-	-
Stage 2	337	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s		5.9	0
HCM LOS	-		

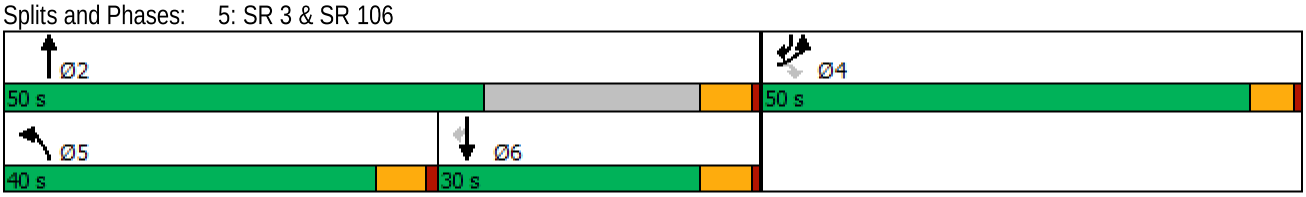
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	811	-	+	378	-	-
HCM Lane V/C Ratio	0.411	-	-	1.294	-	-
HCM Control Delay (s)	12.5	-	-	180.4	-	-
HCM Lane LOS	B	-	-	F	-	-
HCM 95th %tile Q(veh)	2	-	-	22.2	-	-

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

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	265	45	60	275	810	600
Future Volume (vph)	265	45	60	275	810	600
Turn Type	Prot	Perm	Prot	NA	NA	pm+ov
Protected Phases	4		5	2	6	4
Permitted Phases		4				6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	10.0	10.0	6.0	10.0	10.0	10.0
Minimum Split (s)	27.7	27.7	11.7	22.5	40.7	27.7
Total Split (s)	50.0	50.0	40.0	50.0	30.0	50.0
Total Split (%)	41.7%	41.7%	33.3%	41.7%	25.0%	41.7%
Yellow Time (s)	3.9	3.9	4.7	4.7	4.7	3.9
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.9	4.9	5.7	5.7	5.7	4.9
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	Min	Min	None
Act Effct Green (s)	16.5	16.5	8.0	33.0	25.3	42.6
Actuated g/C Ratio	0.27	0.27	0.13	0.55	0.42	0.70
v/c Ratio	0.59	0.10	0.27	0.29	1.11	0.50
Control Delay	26.0	7.0	30.7	9.0	92.1	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.0	7.0	30.7	9.0	92.1	1.9
LOS	C	A	C	A	F	A
Approach Delay	23.3			12.9	53.7	
Approach LOS	C			B	D	

Intersection Summary
Cycle Length: 120
Actuated Cycle Length: 60.5
Natural Cycle: 85
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 42.5 Intersection LOS: D
Intersection Capacity Utilization 77.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 5: SR 3 & SR 106



Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Thomas
Agency/Co.	Parametrix
Date Performed	9/3/2019
Analysis Time Period	PM Peak Hour
Highway	SR 3 Freight Corridor
From/To	North of Lake Flora
Jurisdiction	WSDOT
Analysis Year	Existing Conditions 2019
Description	SR 3 Freight Corridor LOS

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	6.0	ft	% Trucks and buses	4	%
Lane width	10.0	ft	% Trucks crawling	0.0	%
Segment length	1.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	30	%
Up/down	-	%	Access point density	0	/mi

Analysis direction volume, Vd	665	veh/h
Opposing direction volume, Vo	580	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.996		0.996	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	750	pc/h	654	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.1	mi/h
Adj. for access point density,(note-3) fA	0.0	mi/h
Free-flow speed, FFSd	58.9	mi/h
Adjustment for no-passing zones, fnp	1.0	mi/h
Average travel speed, ATSd	47.0	mi/h
Percent Free Flow Speed, PFFS	79.7	%

```
_________________________Percent Time-Spent-Following_________________________

Direction                                  Analysis(d)        Opposing (o)
PCE for trucks, ET                             1.0                 1.0
PCE for RVs, ER                                1.0                 1.0
Heavy-vehicle adjustment factor, fHV          1.000               1.000
Grade adjustment factor,(note-1) fg           1.00                1.00
Directional flow rate,(note-2) vi             747    pc/h         652     pc/h
Base percent time-spent-following,(note-4) BPTSFd  65.5   %
Adjustment for no-passing zones, fnp                21.4
Percent time-spent-following, PTSFd                 76.9   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                               D
Volume to capacity ratio, v/c                       0.44
Peak 15-min vehicle-miles of travel, VMT15          187     veh-mi
Peak-hour vehicle-miles of travel, VMT60            665     veh-mi
Peak 15-min total travel time, TT15                 4.0     veh-h
Capacity from ATS, CdATS                            1700    veh/h
Capacity from PTSF, CdPTSF                          1700    veh/h
Directional Capacity                                1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                          1.0     mi
Length of two-lane highway upstream of the passing lane, Lu   -       mi
Length of passing lane including tapers, Lpl                  -       mi
Average travel speed, ATSd (from above)                       47.0    mi/h
Percent time-spent-following, PTSFd (from above)              76.9
Level of service, LOSd (from above)                           D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde      -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld   -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                     -
Average travel speed including passing lane, ATSpl            -
Percent free flow speed including passing lane, PFFSpl        0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde     -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld     -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                      -
Percent time-spent-following
    including passing lane, PTSFpl                            -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl      E
Peak 15-min total travel time, TT15                 -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	50
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	747.2
Effective width of outside lane, We	22.00
Effective speed factor, St	4.62
Bicycle LOS Score, BLOS	4.33
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Thomas
Agency/Co.	Parametrix
Date Performed	9/3/2019
Analysis Time Period	PM Peak Hour
Highway	SR 3 Freight Corridor
From/To	North of Lake Flora
Jurisdiction	WSDOT
Analysis Year	No Build 2025 Conditions
Description	SR 3 Freight Corridor LOS

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	6.0	ft	% Trucks and buses	4	%
Lane width	10.0	ft	% Trucks crawling	0.0	%
Segment length	1.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	30	%
Up/down	-	%	Access point density	0	/mi

Analysis direction volume, Vd 705 veh/h
Opposing direction volume, Vo 620 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.996		0.996	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	795	pc/h	699	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.1	mi/h
Adj. for access point density,(note-3) fA	0.0	mi/h
Free-flow speed, FFSd	58.9	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATSd	46.4	mi/h
Percent Free Flow Speed, PFFS	78.7	%

```
_______________________Percent Time-Spent-Following______________________

Direction                               Analysis(d)        Opposing (o)
PCE for trucks, ET                          1.0                1.0
PCE for RVs, ER                             1.0                1.0
Heavy-vehicle adjustment factor, fHV        1.000              1.000
Grade adjustment factor,(note-1) fg         1.00               1.00
Directional flow rate,(note-2) vi           792    pc/h        697     pc/h
Base percent time-spent-following,(note-4) BPTSFd  68.3   %
Adjustment for no-passing zones, fnp                 20.4
Percent time-spent-following, PTSFd                  79.2   %

_______________Level of Service and Other Performance Measures______________

Level of service, LOS                                D
Volume to capacity ratio, v/c                        0.47
Peak 15-min vehicle-miles of travel, VMT15           198     veh-mi
Peak-hour vehicle-miles of travel, VMT60             705     veh-mi
Peak 15-min total travel time, TT15                  4.3     veh-h
Capacity from ATS, CdATS                             1700    veh/h
Capacity from PTSF, CdPTSF                           1700    veh/h
Directional Capacity                                 1700    veh/h

_____________________________Passing Lane Analysis___________________________

Total length of analysis segment, Lt                           1.0     mi
Length of two-lane highway upstream of the passing lane, Lu  -       mi
Length of passing lane including tapers, Lpl                   -       mi
Average travel speed, ATSd (from above)                        46.4    mi/h
Percent time-spent-following, PTSFd (from above)               79.2
Level of service, LOSd (from above)                            D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde       -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld    -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                      -
Average travel speed including passing lane, ATSpl             -
Percent free flow speed including passing lane, PFFSpl         0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde      -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld      -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                       -
Percent time-spent-following
    including passing lane, PTSFpl                             -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl      E
Peak 15-min total travel time, TT15                 -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	50
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	792.1
Effective width of outside lane, We	22.00
Effective speed factor, St	4.62
Bicycle LOS Score, BLOS	4.36
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Thomas
Agency/Co.	Parametrix
Date Performed	9/3/2019
Analysis Time Period	PM Peak Hour
Highway	SR 3 Freight Corridor
From/To	North of Lake Flora
Jurisdiction	WSDOT
Analysis Year	No Build 2040 Conditions
Description	SR 3 Freight Corridor LOS

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.89	
Shoulder width	6.0	ft	% Trucks and buses	4	%
Lane width	10.0	ft	% Trucks crawling	0.0	%
Segment length	1.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	30	%
Up/down	-	%	Access point density	0	/mi

Analysis direction volume, Vd	835	veh/h
Opposing direction volume, Vo	735	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		0.996	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	938	pc/h	829	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	1.1	mi/h
Adj. for access point density,(note-3) fA	0.0	mi/h
Free-flow speed, FFSd	58.9	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	44.5	mi/h
Percent Free Flow Speed, PFFS	75.5	%

```
________________________Percent Time-Spent-Following________________________

Direction                                   Analysis(d)         Opposing (o)
PCE for trucks, ET                              1.0                 1.0
PCE for RVs, ER                                 1.0                 1.0
Heavy-vehicle adjustment factor, fHV            1.000               1.000
Grade adjustment factor,(note-1) fg             1.00                1.00
Directional flow rate,(note-2) vi               938    pc/h         826     pc/h
Base percent time-spent-following,(note-4) BPTSFd  74.5   %
Adjustment for no-passing zones, fnp                17.3
Percent time-spent-following, PTSFd                 83.7   %

_______________Level of Service and Other Performance Measures______________

Level of service, LOS                               E
Volume to capacity ratio, v/c                       0.55
Peak 15-min vehicle-miles of travel, VMT15          235     veh-mi
Peak-hour vehicle-miles of travel, VMT60            835     veh-mi
Peak 15-min total travel time, TT15                 5.3     veh-h
Capacity from ATS, CdATS                            1700    veh/h
Capacity from PTSF, CdPTSF                          1700    veh/h
Directional Capacity                                1700    veh/h

____________________________Passing Lane Analysis___________________________

Total length of analysis segment, Lt                          1.0      mi
Length of two-lane highway upstream of the passing lane, Lu   -        mi
Length of passing lane including tapers, Lpl                  -        mi
Average travel speed, ATSd (from above)                       44.5     mi/h
Percent time-spent-following, PTSFd (from above)              83.7
Level of service, LOSd (from above)                           E

___________________Average Travel Speed  with Passing Lane___________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde      -        mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld   -        mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                     -
Average travel speed including passing lane, ATSpl            -
Percent free flow speed including passing lane, PFFSpl        0.0      %

________________Percent Time-Spent-Following with Passing Lane_______________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde     -        mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld     -        mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                      -
Percent time-spent-following
    including passing lane, PTSFpl                            -        %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl     E
Peak 15-min total travel time, TT15                -       veh-h

__________________________ Bicycle Level of Service __________________________
```

Posted speed limit, Sp	50
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	938.2
Effective width of outside lane, We	22.00
Effective speed factor, St	4.62
Bicycle LOS Score, BLOS	4.44
Bicycle LOS	D

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Thomas
Agency/Co.	Parametrix
Date Performed	9/3/2019
Analysis Time Period	PM Peak Hour
Highway	SR 3 Freight Corridor
From/To	Lake Flora/SR 302
Jurisdiction	WSDOT
Analysis Year	Alta Build 2025 Conditions
Description	SR 3 Freight Corridor LOS

Input Data

Highway class	Class 1		Peak hour factor, PHF	1.00	
Shoulder width	6.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	5.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	25	%
Up/down	-	%	Access point density	1	/mi

Analysis direction volume, Vd	230	veh/h
Opposing direction volume, Vo	210	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.5		1.5	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.980		0.980	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	235	pc/h	214	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.3	mi/h
Free-flow speed, FFSd	59.8	mi/h
Adjustment for no-passing zones, fnp	2.1	mi/h
Average travel speed, ATSd	54.2	mi/h
Percent Free Flow Speed, PFFS	90.7	%

Percent Time-Spent-Following

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.1	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	0.996		0.996	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	231	pc/h	211	pc/h

Base percent time-spent-following,(note-4) BPTSFd	24.0	%
Adjustment for no-passing zones, fnp	42.3	
Percent time-spent-following, PTSFd	46.1	%

Level of Service and Other Performance Measures

Level of service, LOS	B	
Volume to capacity ratio, v/c	0.14	
Peak 15-min vehicle-miles of travel, VMT15	288	veh-mi
Peak-hour vehicle-miles of travel, VMT60	1150	veh-mi
Peak 15-min total travel time, TT15	5.3	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	5.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	54.2	mi/h
Percent time-spent-following, PTSFd (from above)	46.1	
Level of service, LOSd (from above)	B	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	50
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	230.0
Effective width of outside lane, We	24.00
Effective speed factor, St	4.62
Bicycle LOS Score, BLOS	3.27
Bicycle LOS	C

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	Thomas
Agency/Co.	Parametrix
Date Performed	8/19/2019
Analysis Time Period	PM Peak Hour
Highway	SR 3 Freight Corridor
From/To	Lake Flora/SR 302
Jurisdiction	WSDOT
Analysis Year	2040
Description	SR 3 Freight Corridor LOS

Input Data

Highway class	Class 1		Peak hour factor, PHF	1.00	
Shoulder width	6.0	ft	% Trucks and buses	4	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	5.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	0	%
Grade: Length	-	mi	% No-passing zones	25	%
Up/down	-	%	Access point density	1	/mi

Analysis direction volume, Vd	755	veh/h
Opposing direction volume, Vo	515	veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.1		1.2	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	0.996		0.992	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	758	pc/h	519	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	0.3	mi/h
Free-flow speed, FFSd	59.8	mi/h
Adjustment for no-passing zones, fnp	1.3	mi/h
Average travel speed, ATSd	48.5	mi/h
Percent Free Flow Speed, PFFS	81.2	%

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________________________Percent Time-Spent-Following________________________

Direction                                    Analysis(d)         Opposing (o)
PCE for trucks, ET                               1.0                 1.0
PCE for RVs, ER                                  1.0                 1.0
Heavy-vehicle adjustment factor, fHV             1.000               1.000
Grade adjustment factor,(note-1) fg              1.00                1.00
Directional flow rate,(note-2) vi                755    pc/h         515     pc/h
Base percent time-spent-following,(note-4) BPTSFd  64.7   %
Adjustment for no-passing zones, fnp                      21.9
Percent time-spent-following, PTSFd                       77.7   %

________________Level of Service and Other Performance Measures_______________

Level of service, LOS                                     D
Volume to capacity ratio, v/c                             0.44
Peak 15-min vehicle-miles of travel, VMT15                944     veh-mi
Peak-hour vehicle-miles of travel, VMT60                  3775    veh-mi
Peak 15-min total travel time, TT15                       19.4    veh-h
Capacity from ATS, CdATS                                  1700    veh/h
Capacity from PTSF, CdPTSF                                1700    veh/h
Directional Capacity                                      1700    veh/h

_____________________________Passing Lane Analysis____________________________

Total length of analysis segment, Lt                                5.0     mi
Length of two-lane highway upstream of the passing lane, Lu         -       mi
Length of passing lane including tapers, Lpl                        -       mi
Average travel speed, ATSd (from above)                             48.5    mi/h
Percent time-spent-following, PTSFd (from above)                    77.7
Level of service, LOSd (from above)                                 D

___________________Average Travel Speed  with Passing Lane____________________

Downstream length of two-lane highway within effective
    length of passing lane for average travel speed, Lde            -       mi
Length of two-lane highway downstream of effective
    length of the passing lane for average travel speed, Ld         -       mi
Adj. factor for the effect of passing lane
    on average speed, fpl                                           -
Average travel speed including passing lane, ATSpl                  -
Percent free flow speed including passing lane, PFFSpl              0.0     %

________________Percent Time-Spent-Following with Passing Lane________________

Downstream length of two-lane highway within effective length
    of passing lane for percent time-spent-following, Lde           -       mi
Length of two-lane highway downstream of effective length of
    the passing lane for percent time-spent-following, Ld           -       mi
Adj. factor for the effect of passing lane
    on percent time-spent-following, fpl                            -
Percent time-spent-following
    including passing lane, PTSFpl                                  -       %

______Level of Service and Other Performance Measures with Passing Lane ______

Level of service including passing lane, LOSpl            E
Peak 15-min total travel time, TT15                       -       veh-h

__________________________ Bicycle Level of Service __________________________
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Posted speed limit, Sp	50
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3
Flow rate in outside lane, vOL	755.0
Effective width of outside lane, We	24.00
Effective speed factor, St	4.62
Bicycle LOS Score, BLOS	3.87
Bicycle LOS	D

Notes:

1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.