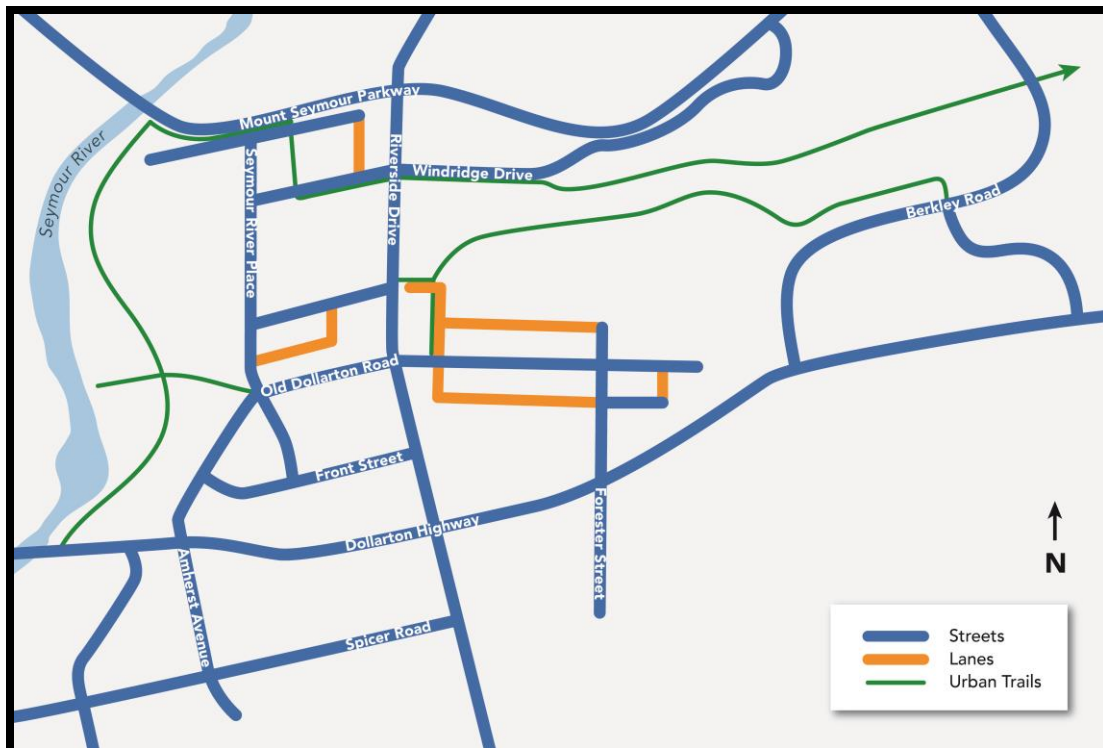


Maplewood Village Transportation Study Update (December 2017) Maplewood Village Functional Design Report (April 2018)

The District of North Vancouver (DNV) undertook an implementation planning and engagement process for Maplewood to develop a detailed design concept and design guidelines to guide development, the form and character of buildings and public realm elements in Maplewood. Council approved the *Maplewood Village Centre and Innovation District Implementation Plan & Design Guidelines* (Implementation Plan) on November 6, 2017. The growth and revitalization anticipated in the Implementation Plan to 2030 triggered the need to update the transportation study to ensure the transportation network aligns with the community vision for Maplewood. The transportation analyses completed as part of this work includes: *Maplewood Village Transportation Study Update* (Study, 2017) and *Maplewood Village Functional Design Report* (Design Report, 2018).

The Study addresses the transportation system to accommodate all users - people walking, cycling, taking transit and driving. The Study includes an analysis of existing conditions, future base conditions, options analysis and recommendations. The consultant conducted the traffic analysis based on land use assumptions developed by DNV staff. These assumptions were based on the information available at the time. Outcomes of the Study include new walking, cycling and road connections needed to support the vision and goals outlined in the Implementation Plan as well as providing traffic data (e.g., volumes, queues) to guide the functional design.

Figure 1: Maplewood Transportation Network



In addition to cross-sections and conceptual plans for key roads, the Design Report contains information about the design principles, including key considerations about lane configuration, cycling network, transit facilities, cross-section requirements, etc. The Design Report also includes issues and constraints uncovered through the process, and cost estimates.

It is intended that these two documents are to be used in conjunction with one another.

Key Findings from the Study include:

- Extending Berkley Road from Mount Seymour Parkway to Dollarton Highway, prioritizing through movements for all users by minimizing intersections and no driveways. The new connection accommodates transit, and provides high quality walking and cycling facilities. The new facility provides an alternative to using Riverside Drive, allowing Riverside Drive to be redesigned for the village.
- Extending Seymour River Place from Old Dollarton Road to Front Street as a shared street. Traffic volumes on this facility should be slow moving to allow for all users to share the same space.
- The proposed land use changes enable improvements for active and healthy transportation. The Study identifies improvements for walking and cycling, including all-ages-and-ability cycling facilities on Old Dollarton Road, Dollarton Highway, Berkley Road and Riverside Drive.
- Extending the Spirit Trail from Lynn Creek Town Centre through the Village and Innovation District east towards Deep Cove.

Highlights from the Design Report include:

- Traffic signals assumed in several locations. Formal warrant analysis will be required to verify the level of traffic control needed.
- Level of traffic control (e.g., 2-way stop, all way stop, pedestrian signal) assumed at specific locations. Formal analysis will be required to verify level of traffic control needed.
- Identifies key laning and recommended turn lanes with associated storage lengths.
- Supports the extension of B-Line service to the Village and Innovation District by identifying and accommodating B-Line bus stations along Old Dollarton Road in the Village. All roads were also designed to accommodate articulated buses used by B-Lines.

A full copy of the Transportation Study follows.



MAPLEWOOD VILLAGE TRANSPORTATION STUDY UPDATE

December 21, 2017

1333.0036.01

Suite 1250, 13401-108th Ave, Surrey, BC V3T 5T3 | T: 604-235-1701

Contact: Allison Clavelle, P.Eng.

T: 604.235.1701

aclavelle@urbansystems.ca

urbansystems.ca

This report is prepared for the sole use of the District of North Vancouver. No representations of any kind are made by Urban Systems Ltd. or its employees to any party with whom Urban Systems Ltd. does not have a contract. Copyright 2016.

Maplewood Village Transportation Study Update

Final Report

Client: District of North Vancouver
355 West Queens
North Vancouver, BC
V7N 4N5

Attention: Ingrid Weisenbach
Transportation Planner, District of North Vancouver

Prepared by: Urban Systems Ltd.
Suite 1250, 13401 – 108th Avenue
Surrey, BC V3T 5T3
Tel: (604) 235-1701

Prepared by: _____
Allison Clavelle, P.Eng.
Senior Transportation Engineer

Niraj Sunuwar, P.Eng.
Transportation Engineer

Date issued: December 20, 2017

Project No.: 1333.0036.01

This report was prepared by Urban Systems Ltd. for the account of District of North Vancouver. The material reflects Urban Systems Ltd.'s best judgement in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Urban Systems Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
Developing a Network	3
Recommended Transportation Network	8
1. INTRODUCTION	1
1.1 Study Scope and Method	2
1.2 Relevant Plans and Policies	3
2. EXISTING CONDITIONS	6
2.1 Existing Land Use	6
2.2 Transportation Network summary	8
2.2.1 Transportation Network	8
2.2.2 Existing Travel Characteristics	9
2.3 Driving and Goods Movement	10
2.3.1 Existing Conditions	10
2.3.2 Summary of Existing Issues	12
2.4 Walking	13
2.4.1 Existing Conditions	13
2.4.2 Existing Issues	14
2.5 Cycling	14
2.5.1 Existing Conditions	14
2.5.2 Existing Issues	15
2.6 Transit	15
2.6.1 Existing Conditions	15
2.6.2 Existing Issues	16
2.7 Existing Conditions Summary	16
3. FUTURE BASE CONDITIONS	18
3.1 External Transportation Network Changes	18
3.2 Future Land Use	19
3.3 Future Travel Patterns	20
3.4 Future Base Transportation Network	20
3.5 Future Base Transportation Network Assessment	23
3.5.1 Future Base Goods Movement and Driving Assessment	23
3.5.2 Future Base Walking Assessment	25
3.5.3 Future Base Cycling Assessment	25
3.5.4 Future Base Transit Assessment	25
3.6 Future Base Conditions Summary – Issues and Opportunities	26

4. OPTIONS ANALYSIS.....	27
4.1 Option 1 – Limited New Network	27
4.1.1 Option 1 Goods Movement and Driving Assessment.....	28
4.1.2 Option 1 Walking Assessment.....	30
4.1.3 Option 1 Cycling Assessment.....	30
4.1.4 Option 1 Transit Assessment.....	31
4.1.5 Option 1 Conditions Summary – Issues and Opportunitites.....	31
4.2 Option 2 – New Berkley Road Connection.....	32
4.2.1 Option 2 Goods Movement and Driving Assessment.....	33
4.2.2 Option 2 Walking Assessment.....	34
4.2.3 Option 2 Cycling Assessment.....	35
4.2.4 Option 2 Transit Assessment.....	35
4.2.5 Option 2 Conditions Summary – Issues and Opportunitites.....	35
4.3 Option 3 – New Berkley Road Connectino Plus New Seymour Boulevard Connection	36
4.3.1 Option 3 Base Goods Movement and Driving Assessment.....	37
4.3.2 Option 3 Walking Assessment.....	37
4.3.3 Option 3 Cycling Assessment.....	37
4.3.4 Option 3 Transit Assessment.....	37
4.3.5 Option 3 Conditions Summary – Issues and Opportunitites.....	37
4.4 Option Evaluation.....	38
4.4.1 Guiding Principles for Evaluation	38
4.4.2 Option Comparison.....	39
5. RECOMMENDED NETWORK.....	42
5.1 Recommended Walking Network.....	44
5.2 Recommended Cycling Network.....	45
5.3 Recommended Transit Network	46
5.4 Recommended Road Network.....	46

6. SUMMARY	50
APPENDIX A: EXISTING ROAD NETWORK CHARACTERISTICS	A-1
APPENDIX B: LAND USE DETAILS	B-1
APPENDIX C: TRIP GENERATION AND DISTRIBUTION SUMMARY C-1	
APPENDIX D: SYNCHRO REPORTS	D-1
APPENDIX E: PROPOSED ROADWAY CHARACTERISTICS AND PRIORITIES	E-1

LIST OF ABBREVIATIONS

AAA	All Ages and Abilities
DGR	Dangerous Goods Route
FTN	Frequent Transit Network
LOS	Level of Service
MoTI	Ministry of Transportation and Infrastructure
MRN	Major Road Network
MUP	Multi Use Pathway
OCP	Official Community Plan
V/C	Volume to Capacity

EXECUTIVE SUMMARY

The District of North Vancouver (District) is undertaking neighbourhood planning work in the Maplewood Area. This area includes the Maplewood Village Centre, as well as the surrounding industrial and employment lands and the undeveloped lands to the east (future Innovation District). Through the planning process, which included consultation with community members, the District has identified future potential for increased land use density in this neighbourhood. This report presents a recommended transportation network to accommodate the potential increase in residents and businesses and meet the community's goals for a complete, balanced, liveable, and connected community.

The Maplewood neighbourhood can be considered as three sub-areas: the Maplewood Village, which is the existing community surrounding Riverside Drive; the Undeveloped Lands (future Innovation District) in the east side of the study area; and Dollarton Highway Light Industrial, south of Dollarton Highway. The planning process for Maplewood included a design charrette, where community stakeholders worked together to build a vision for the future of Maplewood. The concept plan was presented to the public and modified by technical experts and District staff to create a 'refined concept' plan for Maplewood. This 'refined concept' is shown in Figure E-1 and was used as a basis for the development of the recommended transportation network.

The plan shows the concentration of commercial / mixed use and live work land use around Old Dollarton Road and Front Street in the Village Heart, an 'artisan industrial' area around Old Dollarton Road east of Riverside Drive, and a diverse mix of residential uses through the neighbourhood. It also shows an emerging Innovation District with light industrial & commercial businesses and employee dedicated housing in the east portion of the neighbourhood along with a new District fire facility.

Vision for Maplewood (OCP)

- Complete and balanced community
- Local jobs, for those living in the community, especially jobs for young people
- A high environmental standard and high aesthetic standards
- Reflect the community's outstanding natural environment
- Variety of housing for all ages and incomes and family circumstances
- Walkable Maplewood village centre, convenient for transit, extensive system of trails connecting community and nearby destinations



Figure E-1: Maplewood Concept Plan

The intent is to create a community with diverse employment opportunities and community amenities, a walkable core, and access to the natural environment, which remains connected to the urban streetscape. The community engagement process undertaken by the District envisions a vibrant Village Heart with a commercial High Street, high quality public spaces, an artisan industrial area, and a range of residential types and densities, including flexible live-work space. The transportation network must respond to this vision by creating roadways that are vibrant, walkable, public spaces, facilitate cycling for all ages and abilities, accommodate future frequent and rapid transit, and provide access for local goods movement.

The Maplewood neighbourhood is located between two major arterial roadways within the District – Mount Seymour Parkway and Dollarton Road. These roadways provide access to Maplewood, but they are also important connections between communities to the east and the rest of the District, the region, and Highway 1. Efficient and reliable travel eastbound and westbound along these roadways is an important transportation priority.

The existing transportation network in Maplewood has a number of issues that prevent the community from reaching its vision. Some of the most significant issues include:

- Limited local and regional connectivity for walking,
- Lack of local cycling infrastructure
- Low network resiliency
- Limited north-south connectivity
- Shortcutting traffic through the Village Centre
- Traffic delays at key intersections.

The proposed increase in the number of people that work and live in Maplewood will also increase the number of people walking, biking, taking transit, and driving, as well as the number of local goods deliveries. Without improvements to the transportation network, this increased activity can be expected to worsen existing issues and increasing traffic volumes can be expected to erode the liveability of the neighbourhood. Planning for a walkable village core, high quality cycling connections, improved transit service, and increased road capacity at key location is essential to deliver a vibrant and liveable community. TransLink plans to increase the frequency of transit service in Maplewood as part of the North Shore Area Transit Plan; however, vehicle delay on the arterial road network is also expected to have a negative effect on the efficiency and reliability of transit service. Existing and future issues and opportunities that are expected in the 'do nothing' or future base case are illustrated in Figure E-2: Future Base Issues and Opportunities.

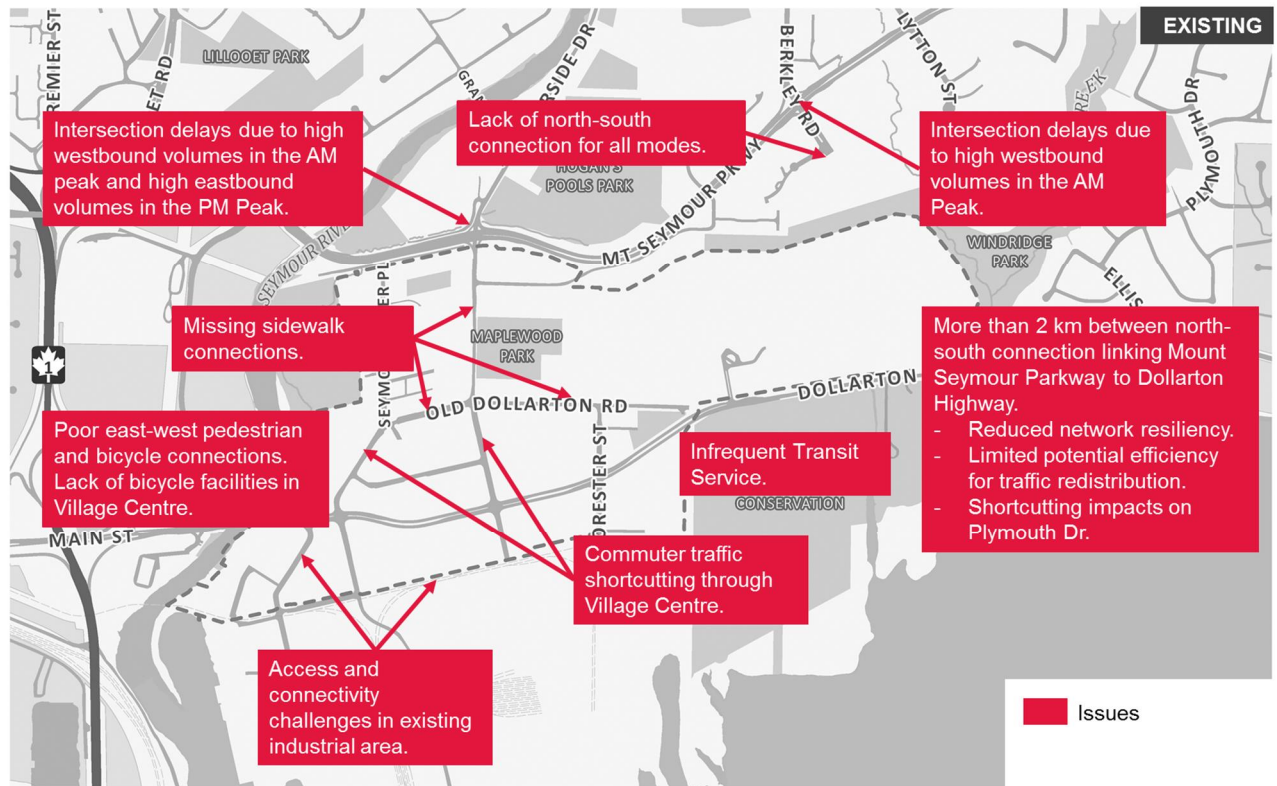


Figure E-2: Future Base Issues and Opportunities

DEVELOPING A NETWORK

The transportation network as a whole must be planned and designed to address existing issues, achieve the vision and objectives of the community, and to respond to proposed changes in land use. This means identifying desire lines for different modes of transportation and identifying corridors to accommodate the anticipated demand. The proposed land uses in the east part of the study area are located in an area that is undeveloped – i.e. with limited existing transportation infrastructure. Before finalizing the overall transportation network needs and recommended improvements to existing infrastructure, it is important to identify the connections made by new corridors and to determine the shape of the overall network at a high level. This study evaluated three high level options to determine which overall transportation network provided the greatest benefit to the Maplewood Area. The three options are described and illustrated below.

Option 1 – Limited New Network

- Improvements to walking, cycling, and intersection geometry based on the recommendations of the Maplewood Village Centre Transportation Plan (Urban Systems, 2013).
- Access to the Innovation District provided via two accesses on Dollarton Highway.



Option 2 – New Berkley Road Connection

- Improvements to walking, cycling, and intersection geometry based on the recommendations of the Maplewood Village Centre Transportation Plan (Urban Systems, 2013).
- Berkley Road to connect Dollarton Highway to Mount Seymour Parkway and provide access to North Lands.



Option 3 – New Berkley Road Connection plus New Seymour Boulevard Connection

- Improvements to walking, cycling, and intersection geometry based on the recommendations of the Maplewood Village Centre Transportation Plan (Urban Systems, 2013).
- Berkley Road to connect Dollarton Highway to Mount Seymour Parkway and provide access to North Lands.
- Seymour Boulevard connected from Mount Seymour Parkway to the Highway 1 interchange at Dollarton Highway / Main Street.



Each option resolves some of the issues identified in the future base case and moves towards the vision identified for Maplewood. Key findings of the analysis of each option are summarized below:

Option 1 – Limited New Network

Investments in the local walking and cycling network within the Village Centre are expected to create a more pleasant, liveable, walkable, and bikeable core for the community. Improved regional walking and cycling connections will create transportation choice for residents and employees in Maplewood and represent an opportunity to reduce reliance on single occupancy vehicles. Reducing traffic speeds and prioritizing walking and biking on Riverside Drive can also be expected to reduce shortcutting; however, because there is limited network redundancy, shortcutting is expected to be a continuing issue. Traffic volumes on Riverside Drive in Option 1 are approaching the threshold for four lanes. Option 1 does not provide any increase in network connectivity or resiliency. Connectivity to emergency services is limited to Dollarton Highway, with no alternative access in case of an

incident or congestion. This option does little to address delays to transit caused by increased traffic congestion or to limit the impacts of goods movement through the Village Centre. The issues and opportunities associated with Option 1 are illustrated in Figure E-3.

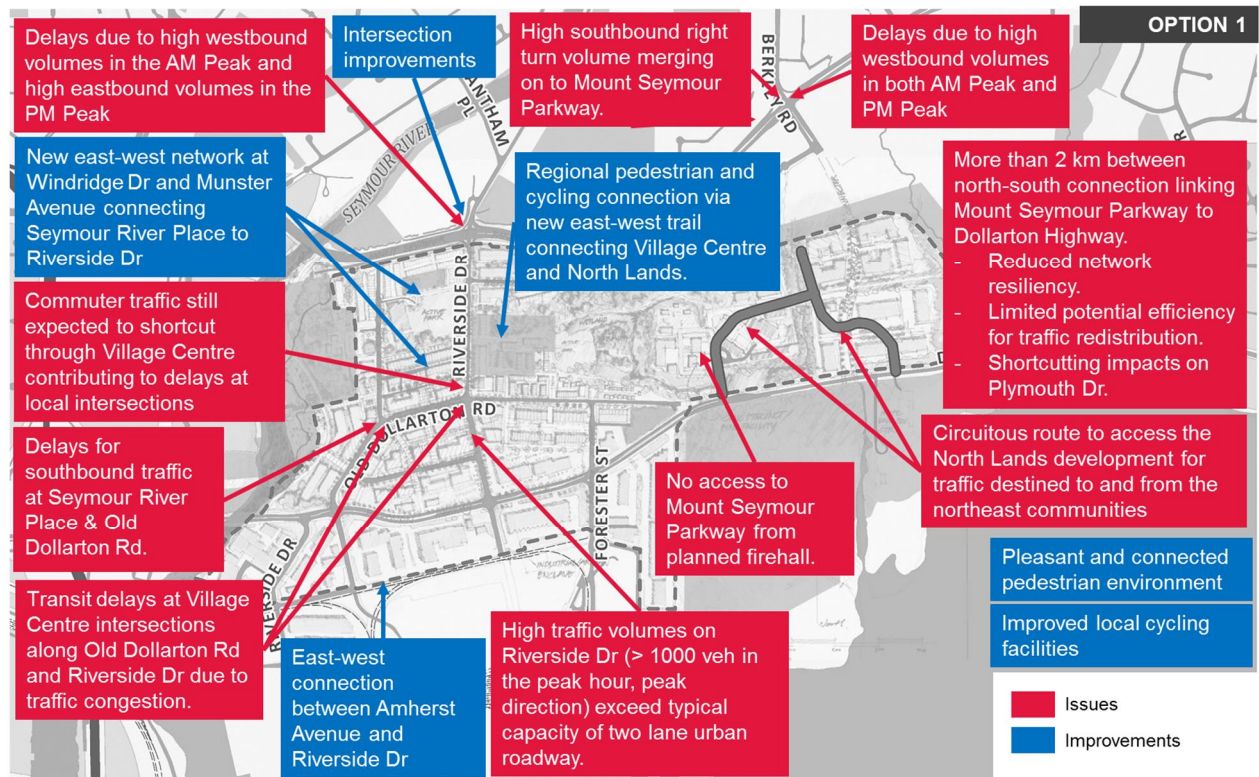


Figure E-3: Option 1 Issues and Improvements

Option 2 – New Berkley Road Connection

The District has identified the need for a new connection along the Berkley Road alignment connected to development throughout historic transportation planning work, including in the 2011 Road Network Study. The addition of a new north-south connection at Berkley Road will become the new route for local and regional traffic travelling between Mount Seymour Parkway and Dollarton Highway. Providing this new connection is expected to reduce travel time for through traffic, as well as improve traffic operations and allow for the development of a vibrant, walkable village core on Riverside Drive. When combined with traffic mitigation measures on Riverside Drive, the Berkley Road connection is expected to reduce short-cutting traffic and truck movements through the village core, since Berkley Road will have fewer accesses and is designed to prioritize traffic flow. The reduction in vehicle volumes through the Village Centre, and especially along Riverside Drive and Old Dollarton Road provides an opportunity to further enhance community livability and reduce conflicts between vehicles, trucks, pedestrians, and cyclists. The new connection will also increase the resiliency of the network, improve access to emergency services, and reduce vehicle delay at key intersections.

In this option, volumes on Riverside Drive are within reasonable levels for a two-lane roadway. Delays to transit are expected to be lower and less frequent in Option 2, and goods movement can be rerouted to the new Berkley Connector. While traffic volumes within the Village Centre are

expected to decrease, traffic volumes on Dollarton Highway east of Riverside Drive are expected to increase and to exceed available capacity for the two-lane section of Dollarton Highway. The issues and opportunities associated with Option 2 are illustrated in Figure E-4.

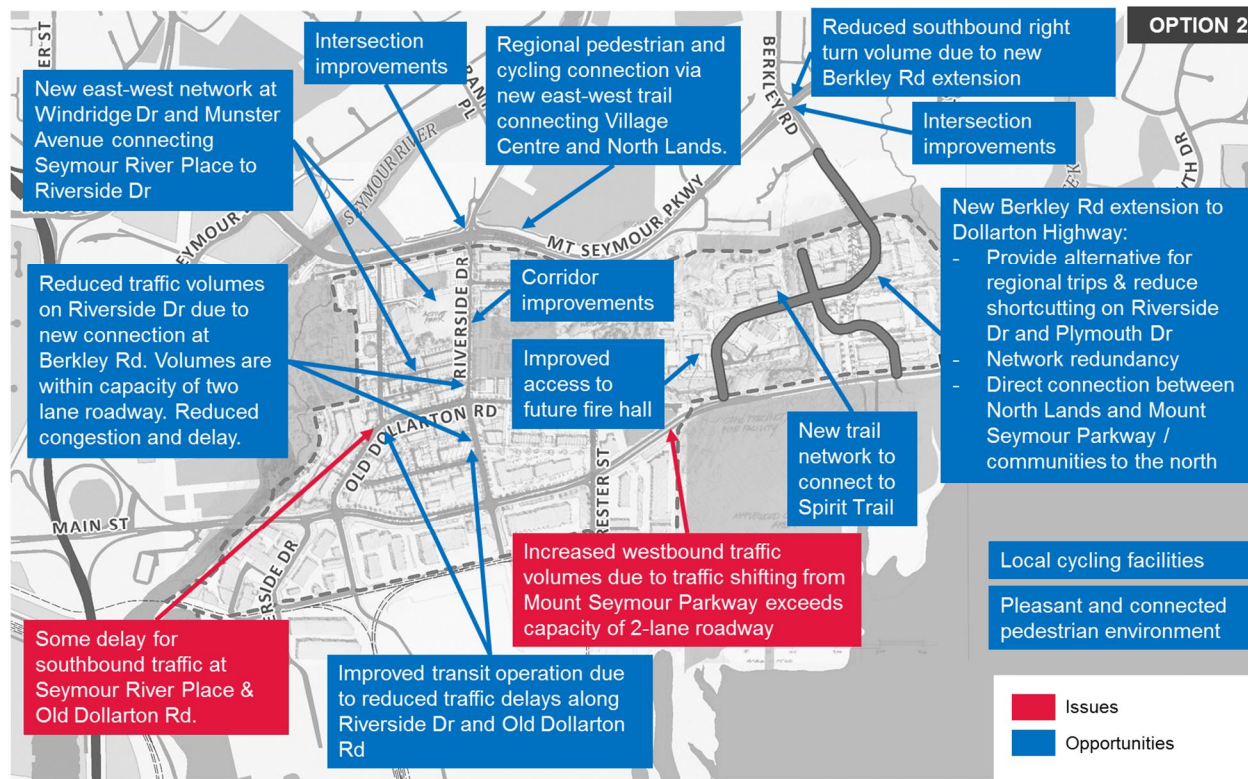


Figure E-4: Option 2 Issues and Opportunities

Option 3 – New Berkley Road Connection plus New Seymour Boulevard Connection

The issues and opportunities associated with the Seymour Boulevard Connector were found to be largely outside of the Maplewood Area. There may be some benefits to the balance of traffic between Dollarton Highway and Mount Seymour Parkway, but these are difficult to quantify and are not expected to result in significant changes to expected operation within the study area. Seymour Boulevard does provide some additional network resiliency, but this will largely benefit the transportation network east of the Seymour River. Because of this, issues and opportunities were not summarized separately for this option.

The results of the evaluation of the options described above is summarized in Table E- 1. The options were evaluated based on five categories: overall connectivity / network resilience, driving and goods movement, walking, cycling, and transit. Within Maplewood, Option 2 and Option 3 were found to have similar benefits. Option 3 is outside of the Maplewood Centre and is understood to be dependent on other projects and partners. For this reason, we have identified Option 2 as the recommended network for Maplewood. This work does not suggest that the District should not pursue the Seymour Boulevard Connector and it does not suggest that benefits identified through other work are not valid. Decisions concerning the Seymour Boulevard connector should be made independently from planning for the Maplewood Village Centre.

Table E- 1: Option Evaluation Summary

	Future Base	Option 1	Option 2	Option 3
Overall Connectivity / Network Resilience				
Driving and Goods Movement				
Walking				
Cycling				
Transit				
 Less Favourable Somewhat Less Favourable Neutral Somewhat Favourable More Favourable				Recommended

Overall, it is clear that providing a new connection between Mount Seymour Parkway and Dollarton Highway through the proposed new developments in the east part of the Maplewood neighbourhood has many transportation benefits. This connection allows for traffic travelling from the neighbourhoods east of Maplewood to choose the most efficient route through this area – Mount Seymour Parkway or Dollarton Highway – without negatively impacting existing residential neighbourhoods or the Maplewood Village Core. It provides strong, multimodal access to the proposed new Innovation District and access to the proposed District fire facility with a resilient network in case of incidents or congestion. Based on the results of the evaluation, the Berkley Road connection was included in the recommended transportation network, which is described further below.

RECOMMENDED TRANSPORTATION NETWORK

The Maplewood neighbourhood will be served by a multimodal transportation network, which will be constructed over time in conjunction with changes in land development. Safe and efficient connections for walking and cycling will contribute to neighbourhood livability and vibrancy and encourage residents, employees, and visitors of all ages to choose active modes of transportation for short trips. Convenient, accessible, and frequent transit service to connect destinations within Maplewood and between Maplewood and other communities will support mode choice, reduce vehicle trips, and improve the accessibility of the neighbourhood for all people. The District is working with TransLink to provide frequent, and eventually, rapid transit service to Maplewood. The transportation network and public realm must be designed to accommodate high quality, high frequency transit. The vehicle network in and through Maplewood prioritizes efficient east-west through movements, discourages short-cutting, and provides appropriate local access for private vehicles and the movement of goods and services.

The recommended network identifies specific facilities for each mode of transportation. These facilities have been chosen because they work towards achieving the overall goals identified for Maplewood Village and the Innovation District. They provide connections that are appropriate for the planned land use and intent for each roadway corridor, and are consistent with the findings of the technical work. Through traffic analysis, a number of improvements to individual intersections were also identified. The recommended connections, connection types, and improvements for each mode are illustrated in Figure E-5.

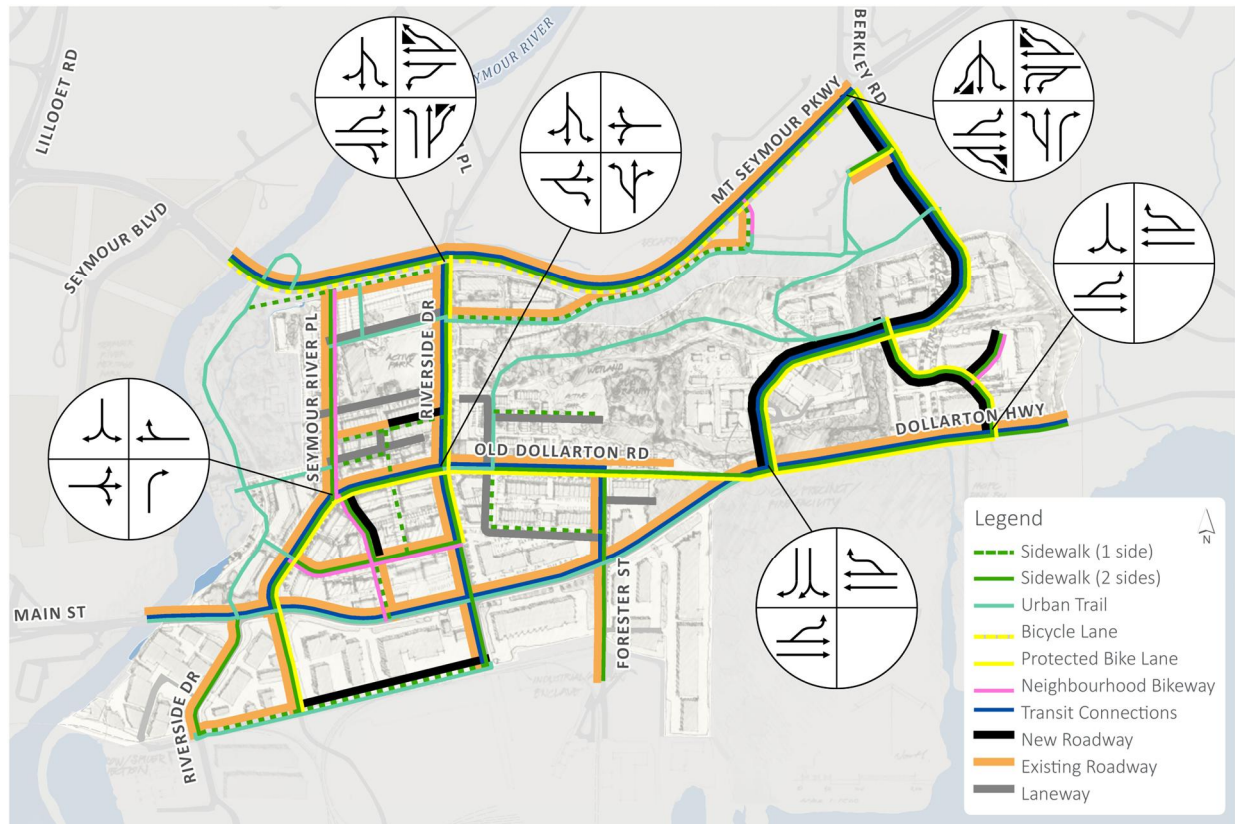


Figure E-5: Recommended Transportation Network

With this network in place, the proposed land use can be accommodated within the study area with an increase in overall multi-modal mobility and reliability. Pedestrians and cyclists of all ages and abilities will have dedicated networks connecting east-west and north-south across the study area. The Berkley Road connection will reduce traffic volumes through the Village Centre, provide access to the new Innovation District and District fire facility, and increase the reliance of the network in times of congestion, during incidents, and during emergencies. The overall average delay at all intersections within the Study Area is expected to remain at acceptable levels at the long-term horizon. While some movements at the most congested intersections will see higher levels of delay, the proposed improvements and signal timings allow the District to prioritize through traffic along Mount Seymour Parkway and Dollarton Road, while providing adequate storage for vehicles queuing to enter and exit the Village Centre. Within the Village Centre itself, operations of all movements are expected to be adequate with limited delay, which will allow for more efficient and reliable transit service.

1. INTRODUCTION

The Maplewood Area is a long-established community in the District of North Vancouver, located east of Seymour River between Mount Seymour Parkway and Dollarton Highway. This location is illustrated in Figure 1-1. The Maplewood neighbourhood can be considered as three sub-areas: the Maplewood Village, which is the existing community surrounding Riverside Drive; the Undeveloped Lands (future Innovation District) in the east side of the study area; and Dollarton Highway Light Industrial, south of Dollarton Highway.

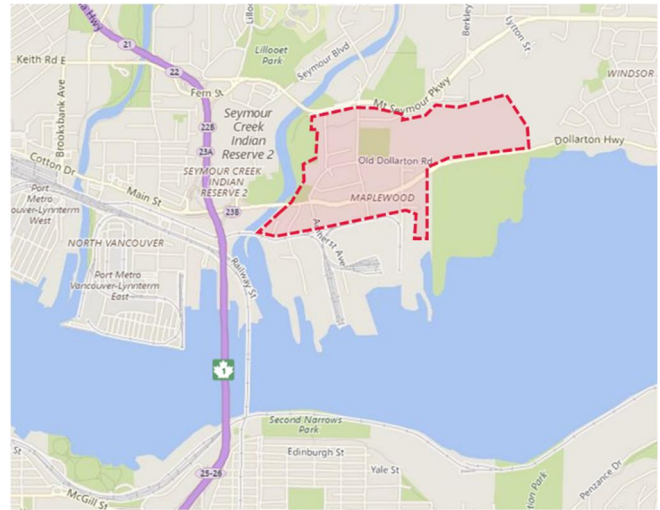


Figure 1-1: Maplewood Neighbourhood

Approximately 1,000 people live in Maplewood today in a mix of older, more affordable rental townhouses and low-rise apartments, and a blend of old and new single-family homes. Area residents enjoy some commercial development along Old Dollarton Road and a recreation centre that is located nearby in the Seymour Area. Maplewood is also a significant North Shore employment node, with established industrial and commercial uses to the south and with established and recently developed business parks along the new Dollarton Highway. Over 220 businesses are located here, and contribute significantly to the District's job base and economy. The area includes — and is bordered by — significant green spaces and ecological areas including Maplewood Farm, Maplewood Conservation Area, forested lands, creeks and wetlands.

The Maplewood Village is the heart of the Maplewood Area. The Maplewood Village surrounds Riverside Drive between Mount Seymour Parkway and Dollarton Highway. The vision for the Maplewood Village was established in the District's new Official Community Plan (OCP, Bylaw 7900) adopted by the District of North Vancouver Council in 2011. It is envisioned as **a complete and balanced community** with local jobs and business that reflect high environmental and aesthetic standards, complementing the community's historic and natural character, which distinguishes this centre from other areas in the District. The Village Centre is expected to include a wide range of housing types along with local shops and services and business park type use.

In 2016, the District undertook a new study to develop an Implementation Plan for the Maplewood Area and Village Centre. This plan is intended to implement the direction set out in the OCP and include design guidelines for the area. The intent of the Maplewood Implementation Plan and Design Guidelines (Implementation Plan) is to create a community with diverse employment opportunities and community amenities, a walkable core, and access to the natural environment, which remains connected to the urban streetscape. The community engagement process undertaken by the District envisions a vibrant Village Heart with a commercial High Street, high quality public spaces, an

artisan industrial area, and a range of residential types and densities, including flexible live-work space. The transportation network must respond to this vision by creating roadways that are vibrant, walkable, public spaces, facilitate cycling for all ages and abilities, accommodate future frequent and rapid transit, and provide access for local goods movement. This Transportation Study Update was developed in conjunction with the Implementation Plan and reflects the policies and guidelines outlined in that document. The Implementation Plan was approved by Council on November 6, 2017.

The Transportation Study Update identifies a recommended transportation network in the Maplewood Area, including within the Maplewood Village Centre and the proposed Innovation District. The recommendations will identify infrastructure to continue to develop a more livable and walkable Village Centre, improved bicycle connections that accommodate all ages and abilities, convenient access to transit, and a balanced transportation system. The overall purpose of this study is to create a planning level outline for a transportation network, supported by strong road network and traffic analysis in order to ensure that the community's vision for a vibrant and complete Village Centre is upheld. The functionality of the transportation network is central to the success of any livable, vibrant community and is a major factor in achieving the District's objectives for the Maplewood Area.

1.1 STUDY SCOPE AND METHOD

This report documents Phase 1 of the Maplewood Village Transportation Study and Functional Plan – the Maplewood Village Centre Transportation Plan Update. The study area included in this analysis is shown in **Figure 1-1**. The Highway 1 interchanges and a possible future Seymour Boulevard connection are excluded from the study area – this report does not include recommendations for Highway 1, the Lower Lynn interchanges, or Seymour Boulevard; however, the impacts of changes to this infrastructure has been included in the analysis.

The scope includes the following key items:

- Updating the assessment of the existing transportation network, completed in 2013, to include the Innovation District and to updated traffic data and land use and travel assumptions.
- Identification of existing and potential future transportation issues if the transportation network is not improved.
- Assessing the need for new major roadway connections between Mount Seymour Parkway and Dollarton Highway.
- Developing a planning-level multi-modal transportation network, including recommended facility types for walking and cycling, accommodation for planned transit, and identification of traffic and goods movement needs.
- Using traffic engineering tools to identify key network components, including the number of lanes required on roadways, recommended geometric improvements at existing intersections, and the preferred configuration for new intersections, if applicable.

- Mapping and documentation of the recommended transportation network.

The assessment documented in this report are based on existing and future land use information provided by the District based on a conservative estimate of the built area that could be accommodated by parcels within the study area. It is not intended to dictate land use or accurately reflect the exact nature of future development, instead, the goal of the analysis is to determine the transportation needs of the Maplewood Area with development within a given envelope.

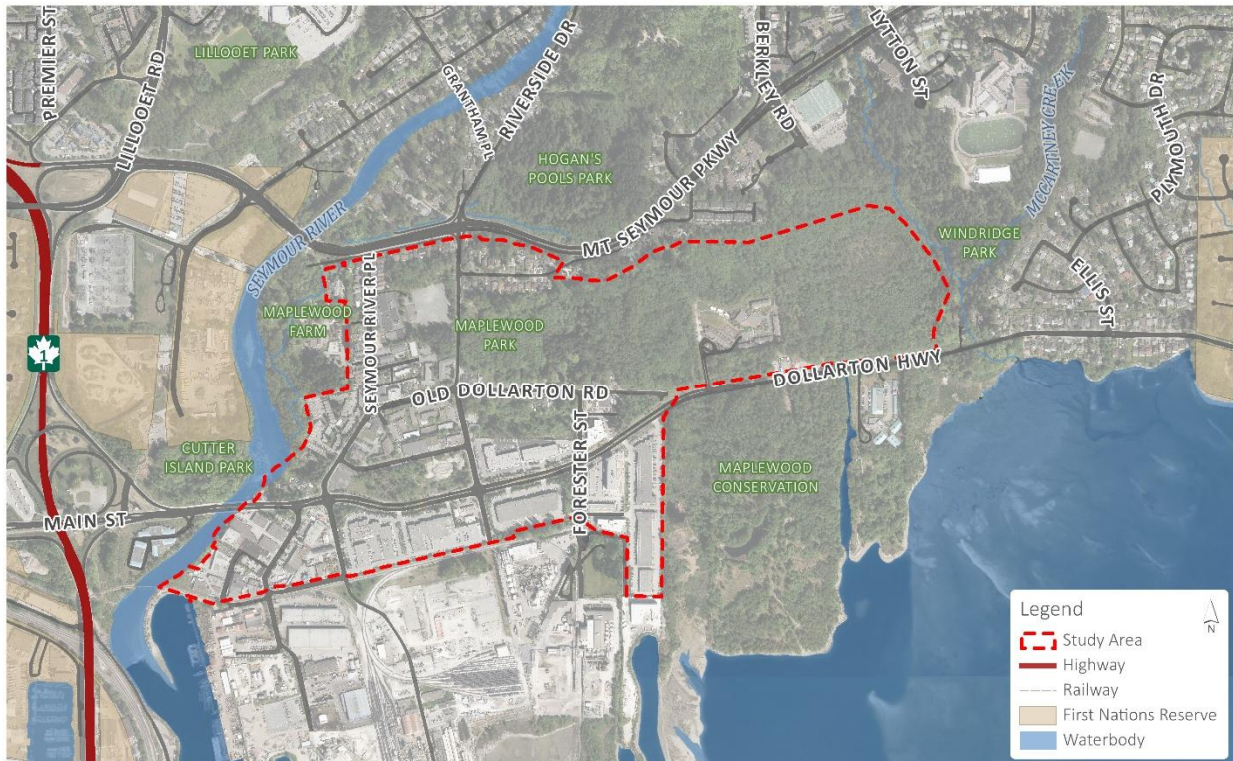


Figure 1-1: Study Area

1.2 RELEVANT PLANS AND POLICIES

The Maplewood Transportation Plan is informed by many of the District's key planning documents that contain several development guidelines and policies, plans, and goals related to transportation.

- **District of North Vancouver Transportation Plan (2011)** – This transportation plan identified priorities to deliver a sustainable transportation network in the District of North Vancouver in support of the vision outlined in the OCP. Intersection safety improvements along Dollarton Highway and Riverside Drive, bike route connecting to Mount Seymour Parkway, and transit stop improvements were identified as focus areas for Maplewood.
- **Maplewood Area Plan (2002)** - this plan is based on a long-term vision developed by Maplewood community representatives to outline the form and character of future land use

patterns within Maplewood. It addresses local concerns and needs as identified by local representatives. Amongst other priorities, the main transportation objectives identified were to provide accessible and widespread pedestrian/cycling routes, minimize commuter vehicle trips within a sustainable community, and realize the benefits of Maplewood's location as a transportation axis for transit, rail, water, and road transportation.

- **Maplewood Village Centre Transportation Study (2013)**– this transportation study for the Village Centre was completed in 2013 and that provided a planned network to accommodate the level of development established at the time for Village Centre. The study outlined a multimodal transportation network, identified intersection and corridor improvements within the Village Centre, and included conceptual drawing of the recommended transportation network. The current work is based on the technical foundation of this study.
- **Maplewood Village Centre and Innovation District Implementation Plan & Design Guidelines (2017)** – As noted earlier, the Implementation Plan and the Transportation Study Update were prepared in parallel. Because of the close relationship between land-use and transportation planning, this parallel process allowed for the proposed transportation plan to be fully responsive to the planned land use changes and community policies and guidelines and for the Implementation Plan to reflect the findings of the transportation planning work.

As part of the development of the Implementation Plan the District held a design charrette to develop a concept plan for the Maplewood Village and surrounding area. The process included representation from the design and planning team, community stakeholders that represent a variety of interests, and District staff. The planning process for Maplewood included a design charrette, where community stakeholders worked together to build a vision for the future of Maplewood. The concept plan was presented to the public and modified by technical experts and District staff to create a 'refined concept' plan for Maplewood. This 'refined concept' is shown in **Figure 1-2** and was used as a basis for the development of the recommended transportation network.

The plan shows the concentration of commercial / mixed use and live work land use around Old Dollarton Road and Front Street in the Village Heart, an 'artisan industrial' area around Old Dollarton Road east of Riverside Drive, and a diverse mix of residential uses through the neighbourhood. It also shows an emerging Innovation District with light industrial & commercial businesses and employee dedicated housing in the east portion of the neighbourhood along with a new District fire facility.



Figure 1-2: Maplewood Concept Plan

2. EXISTING CONDITIONS

Maplewood is an area with existing development and services, including a road network and transit service. This section describes the existing land use, transportation network, walking, cycling, and transit facilities in Maplewood.

2.1 EXISTING LAND USE

The most significant factor affecting how people travel is the proximity of where people live to where they work, shop, and play. The type, scale and mixture of land uses along with the densities of those uses, will largely determine how far, and consequently what mode of transportation, people will use to get to their destinations. The closer people are to their desired destination, the more opportunities there are for them to use sustainable modes of transportation such as walking, cycling, or transit.

Maplewood can be divided into three distinct areas as illustrated in **Figure 2-1** and described below.

- **Village Area** – Maplewood village is currently made up of a combination of residential, commercial, and mixed land uses. The existing residential land uses in the village include single family homes, purpose-built rental apartments, and a mix of strata apartments and townhouses. The west village area has seen the most recent redevelopment, with new townhouses along Seymour River Place, Heritage Park Lane, new mixed-use buildings along Old Dollarton Road and Front Street, and new commercial development along Dollarton Highway. Maplewood Farm is a well visited site, with cultural and historic importance for the Maplewood Village and draws local and regional visitors. The iHope Centre and the North Vancouver Arts Council are important established services/group in the area, which are currently leasing space inside the Maplewood Farm site. Kenneth Gordon Maplewood School is located on the east side of Seymour River Place.
- **Undeveloped Lands (Innovation District)** – Located on the east side of the study area, there are largely undeveloped lands that are currently identified as light industrial commercial in the OCP. The *Maplewood Village Centre and Innovation District Implementation Plan & Design Guidelines (2017)* has identified this land as a proposed Innovation District. Current land uses on the developed portion of this area include an international school currently being rented by another educational facility, and recreation facilities, including Canlan Ice Sports Centre, Seymour Youth Center, and Ron Andrews Community Centre.
- **Light Industrial - Business Lands** – South of Dollarton Highway is a concentration of light industrial lands and commercial uses. The business park located on the southeast corner of Dollarton Highway/Forester Street consists of cafes and small restaurants.

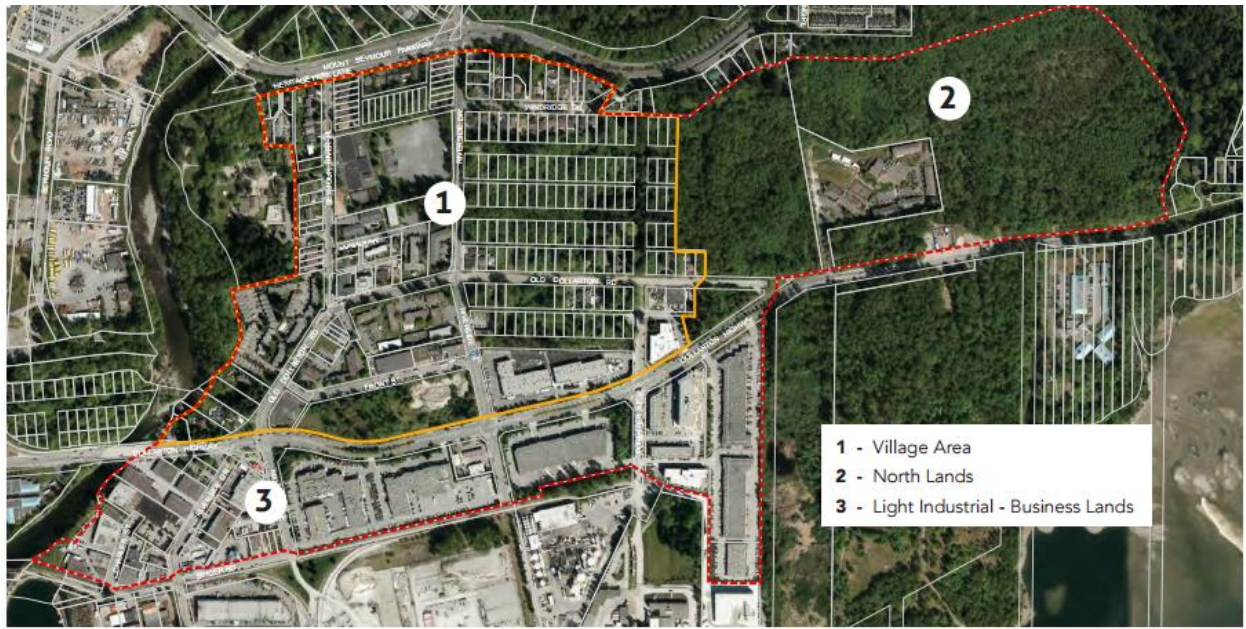


Figure 2-1: Maplewood Planning Areas

A detailed table with the current land use and densities are attached in **Appendix A**. The land uses assigned to the Maplewood area in the District's OCP are shown in **Figure 2-2**.

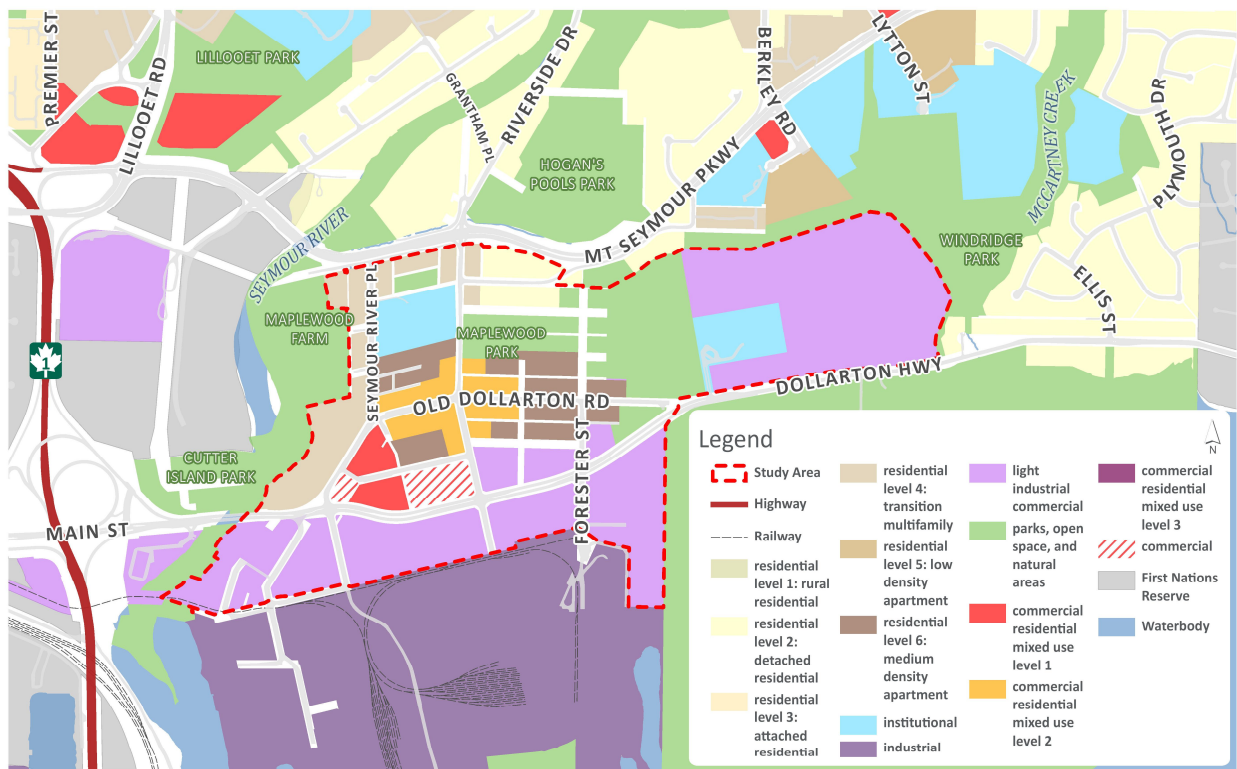


Figure 2-2: Maplewood OCP Land Use Area

2.2 TRANSPORTATION NETWORK SUMMARY

Maplewood is bounded by Mount Seymour Parkway to the north, Dollarton Highway to the south, Seymour River to the west, and Windridge Park to the east. The road network within the study area is generally comprised of local and collector roads with the exception of Mount Seymour, Dollarton Highway, and Riverside Drive being major arterial roadways.

2.2.1 TRANSPORTATION NETWORK

The Maplewood Village is located between two major arterial roadways: Mount Seymour Parkway and Dollarton Highway. These roadways are part of the Major Road Network (MRN) that have a regional role connecting the eastern portion of the District to Highway 1, the rest of the North Shore, and all of Metro Vancouver. Dollarton Highway has pathways on both sides of the roadway which also serve both pedestrians and off-road cyclists in the same space. Mount Seymour Parkway has sidewalks and on-street cycle lanes that are suitable for regional travel by confident cyclists. Both roadways are part of the transit network. This area is not currently part of the Frequent Transit Network (FTN).

Riverside Drive is also a major arterial roadway and part of the MRN; it is the only north-south connection between Mount Seymour Parkway and Dollarton Highway within approximately 3 km. There is limited network redundancy in this area and little ability for traffic to redistribute to make the most effective use of the road network. Riverside Drive's role as a north-south connector results in through traffic that is not destined for the Village Centre. It is also a goods movement connection and an official Dangerous Goods Route (DGR) as outlined in District Bylaw. There are no sidewalks on Riverside Drive between Old Dollarton Road and Mount Seymour Parkway and sidewalks on both sides of the road between Old Dollarton Road and Dollarton Highway. There are no existing cycling facilities on Riverside Drive.

South of Dollarton Highway there are a series of local roadways that act as connections to the industrial area. Riverside Drive south of Dollarton Highway is a minor arterial with no transit and no active transportation infrastructure.

Between Dollarton Highway and Mount Seymour Parkway is a network of local and collector roadways with a mix of pedestrian infrastructure. There is limited on-street cycling infrastructure. On the east and west sides of the study area there are some existing trails; however, there is limited connectivity and the utility of these trails for mobility is limited.

The roadway characteristics in the study area are illustrated in **Figure 2-3** and summarized in table form in **Appendix B**.

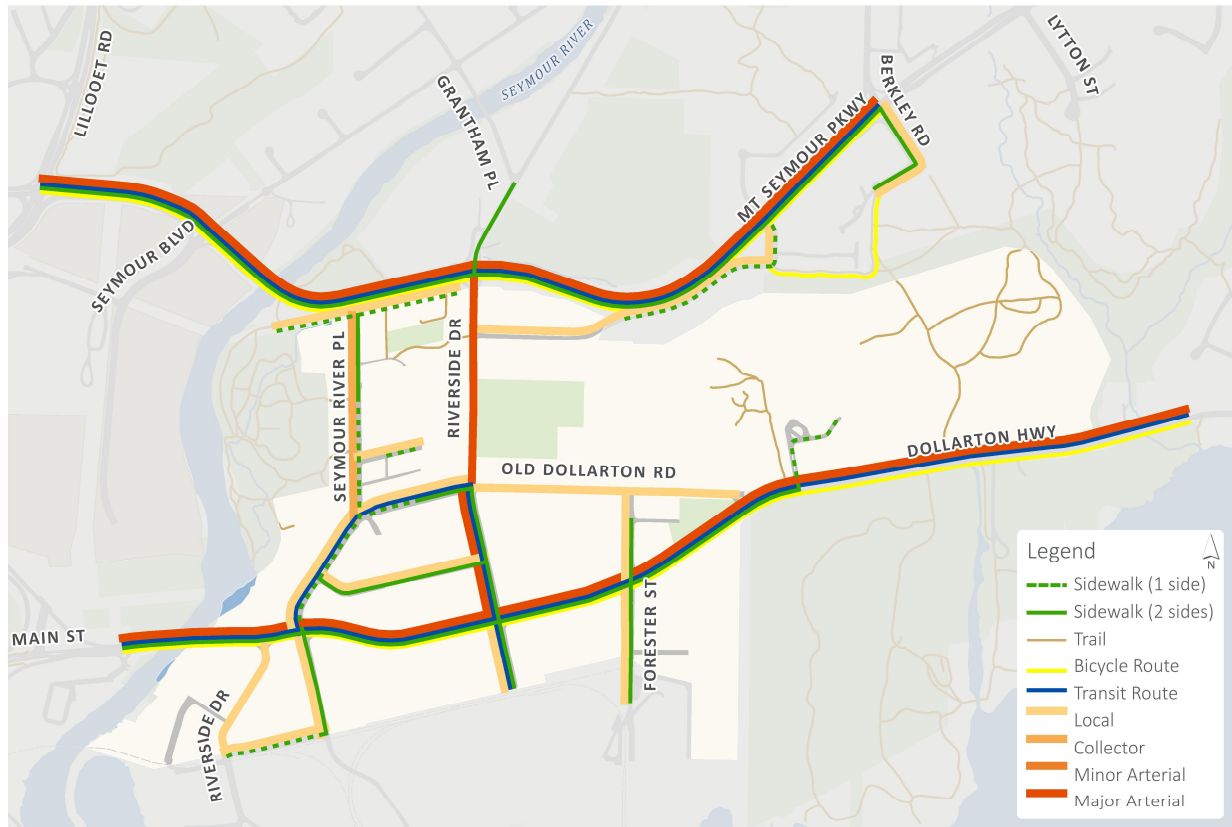


Figure 2-3: Existing Transportation Network

2.2.2 EXISTING TRAVEL CHARACTERISTICS

Key facts about the current travel characteristics include the following.

- **Mode Split:** According to the 2011 TransLink Trip Diary survey, 79% of all weekday trips made in the District are made by auto. Walking trips account for 12%, transit trips account for another 8%, while only 1% of all trips is made by cycling. Although the detailed data for Maplewood is not available, mode share for walking and cycling is typically higher in village centres where multiple land uses are co-located and distances for some trips are less than two kilometres.
- **Travel Patterns:** The traffic pattern is directional during the morning and afternoon peak hours - In the morning peak, westbound traffic volumes are significantly higher than the eastbound traffic volumes. Likewise, eastbound volumes are higher in the afternoon peak hour. Shortcutting through Riverside Drive to access the Highway were found to be prevalent in existing conditions. Most of the traffic destined for Maplewood comes from the east on Mount Seymour Parkway and the west on Dollarton Highway.
- **Goods Movement:** Due to the location of industrial uses on the south side of Dollarton Highway, most trucks access these site from Dollarton Highway. Riverside Drive is the existing Dangerous Goods Route (DGR) in the area and the only north-south route for trucks to access Mount Seymour Parkway, which is also designated as DGR.

There is an existing chemical plant south of the Study Area, which has generated discussion at community events regarding egress in case of emergency. The need for, and feasibility of, additional emergency egress locations was not specifically included in this study, but may be considered as recommendations for the future network are considered. Network redundancy positively contributes to emergency egress and the resiliency and completeness of the network is included in the evaluation of network options later in this report.

2.3 DRIVING AND GOODS MOVEMENT

The current conditions for driving and goods movement in Maplewood area are summarized in the sections below.

2.3.1 EXISTING CONDITIONS

Traffic volumes on Mount Seymour Parkway and Dollarton Highway are consistent with their roles as regionally significant roads connecting communities in the east of the District with other neighbourhoods on the North Shore and across the Lower Mainland. Peak hour peak direction volumes on Mount Seymour Parkway are between 1,650 to 1,850 vehicles and peak hour peak direction volumes on Dollarton Highway are between 950 and 1,650. Both of these arterials have two through lanes per direction, medians and left turn lanes, and right turn bays at intersections. Traffic volumes are higher on Mount Seymour Parkway, especially east of Riverside Drive. High turn volumes into Maplewood (e.g. over 400 vehicles turning left from westbound Mount Seymour Parkway to southbound on Riverside Drive) utilize a high percentage of green time and contribute to delay for all vehicles on the roadway network. This is symptomatic of the use of Riverside Drive as a 'shortcut' to travel between Mount Seymour Parkway and Old Dollarton Road as drivers find the most efficient travel patterns across the District and to the Ironworks Memorial Bridge. Although data is not available to determine the volume of shortcutting traffic, it is likely that drivers may also be using Plymouth Drive to travel between Mount Seymour Parkway and Dollarton Highway during times of congestion.

In order to understand these conditions, existing mobility for vehicles and goods movement was assessed based on vehicle delay and capacity throughout the existing network. Due to the proximity to the highway interchanges, traffic on Mount Seymour Parkway and Dollarton Highway have higher volumes in the peak direction during peak periods. During the morning peak hour, westbound traffic volumes are around 1,850 vehicles on Mount Seymour Parkway and 1,600 vehicles on Dollarton Highway. Both roadways have four lanes at Riverside Drive; however, Dollarton Highway has two lanes at the east border of the study area. Work done by others indicates that regional traffic westbound on Dollarton Highway has a higher amount of delay than westbound traffic on Mount Seymour Parkway / Highway 1. This may explain the imbalance of traffic on these two arterial roadways. Because of the limited number of north-south connections, there is little opportunity for traffic to balance between the two roadways for efficient use of the network.

The results of the morning and afternoon peak period Synchro assessment are indicated that all intersections are operating at a Level of Service (LOS) 'E' or better in the morning and afternoon peak hours.

The existing traffic volumes and the results of the analysis are shown in **Figure 2-4**. Overall, all intersections in the study area operate with a LOS of 'E' or better in both peak periods; however, there are a number of individual movements, that experience longer delays with LOS of 'F'. The most significant of these delays are at the intersection of Mount Seymour Parkway and Riverside Drive, where the westbound left turn in the morning peak period and the eastbound thru and right turn movements in the afternoon peak hour experience LOS 'F'. This is related to the volume of traffic travelling *through* the Maplewood Village to find the most efficient route to the remainder of the District and/or to the Ironworkers Memorial Bridge.



Figure 2-4: Existing Traffic Volumes and Level of Service

The unsignalized intersection at Mount Seymour Parkway/Browning Place experiences LOS 'F' in the peak periods. This is typical of a two-way stop control intersection where the major corridor (Mount Seymour Parkway) experiences over 2,000 vehicles during the peak period. The number of vehicles making this movement is very small (less than ten in both peak periods). Delay at this intersection makes it difficult for residents along this corridor to access Mount Seymour Parkway via

Browning Place; however, it also discourages shortcutting and reinforces the role of Windridge Drive as a local road. The volumes on Browning Place are not high enough to warrant signalization.

Movements exceeding these desired performance thresholds of LOS 'D' and / or volume to capacity (v/c) of 0.90 or greater are summarized below:

Morning Peak:

- **Mount Seymour Parkway & Riverside Drive**
Westbound Left, LOS 'F', v/c >1
- **Mount Seymour Parkway & Browning Place**
Southbound Left/Through/Right, LOS 'F', v/c >1

Afternoon Peak:

- **Mount Seymour Parkway & Riverside Drive**
Eastbound Through/Right, LOS 'F', v/c >1
- **Mount Seymour Parkway & Browning Place**
Northbound Left/Through/Right, LOS 'E'
Southbound Left/Through/Right, LOS 'F'

Traffic operations within the study area may be affected by operation at the nearby Main Street / Dollarton & Highway 1 and Mount Seymour Parkway & Highway 1 interchanges. Observations indicate that congestion on Highway 1 south of the study area causes queuing on Mount Seymour Parkway and Dollarton Highway. However, this problem is expected to be alleviated with proposed improvements planned at these interchanges by the Ministry.

Riverside Drive is currently classified as the DGR in the District's Transportation Master Plan. Currently, this roadway provides a direct connection from the Industrial area south of Dollarton Highway to Mount Seymour Parkway. Goods movement is subject to the same delays as other vehicles in the network.

2.3.2 SUMMARY OF EXISTING ISSUES

The traffic analysis and review of driving and goods movement conditions identified the following key issues:

- Regional travel patterns and challenges, including high peak period peak direction travel on east-west corridors, limited east-west routes across the North Shore, and congestion on the highway interchanges negatively impacts operation on arterial roads.
- Delays at intersections along Mount Seymour Parkway due to high westbound volumes in the morning peak and high eastbound volumes in the afternoon peak
- Lack of north-south road connection between Mount Seymour Parkway and Dollarton Highway does not provide opportunity for drivers to choose the most efficient route and results in traffic diverting to the small number of available north-south connections. This results in:
 - Potential for shortcutting through the residential neighbourhoods along Plymouth Drive.

- Non-local traffic using Riverside Drive, which contributes to delay for movements in to, out of, and through Maplewood Village and decreases the livability of Maplewood Village Centre.
 - No network redundancy in case of incidents and / or emergencies.
-

2.4 WALKING

The ability to safely and comfortably walk to and between key destinations is essential to community vibrancy and livability. This section explores existing walking conditions in Maplewood.

2.4.1 EXISTING CONDITIONS

The existing walking network in Maplewood is focused in Maplewood Village and is made up of sidewalks and trails. There are some traffic calming measures in place to improve the safety and appeal of walking. The existing walking conditions are explored in more detail below:

- **Sidewalks** – Although most of the area are well connected with sidewalks present on at least one side of the street, there are several streets currently missing sidewalks. The newer developments have contributed to adding sidewalk connections in Maplewood namely along Seymour River Place, Heritage Park Lane, Old Dollarton Road south of Front Street and Front Street between Old Dollarton Road and Riverside Drive. The following locations are currently missing sidewalks.
 - Riverside Drive between Old Dollarton Road and Mount Seymour Parkway (both sides)
 - Seymour River Place between Old Dollarton Road and Maplewood Farm Access (west side)
 - Old Dollarton Road west of Riverside Drive (both sides)
 - Old Dollarton Road between Front Street and Riverside Drive (east/south side)
 - Windridge Drive between Riverside Drive and Browning Place (south side)
- **Trails** – There are several existing trails on the eastern and western limits of the study area. The trails on the west links Maplewood Creek Park north of Mount Seymour Parkway to Maplewood Farm. This trail continues south. The trails on the east links Berkley Road to south of Dollarton Highway into Maplewood Conservations Area. There are also trails connecting to the off-street pathway located at the transition of Windridge Drive to Browning Place. The east-west trail network linking Maplewood Village with the future Innovation District and beyond is not well developed at this time.
- **Traffic Calming** – There are currently speed bumps along Windridge Drive. A 30 km/hr speed limit during school days signage is posted along Seymour River Place near Kenneth Gordon Maplewood School, however, no other traffic calming measures are implemented in the vicinity.

2.4.2 EXISTING ISSUES

The review of walking conditions identified the following key issues:

- Poor walking connections to major destinations and along key desire lines. Sidewalks are not continuous through the commercial area in the Village Core and there are no sidewalks on Riverside Drive north of Old Dollarton Road. This makes it difficult to safely and comfortably access important retail and community destinations.
 - The walking network in Maplewood is incomplete. There are several roadways with missing sidewalks, which makes it difficult to safely walk to key destinations. This is especially problematic for people using mobility devices, children, and seniors.
 - Poor east-west trail connections.
-

2.5 CYCLING

Cycling is a growing mode for Metro Vancouver municipalities, with many people interested in cycling more often for more trip types. The type of cycling facility influences cycling choice – confident cyclists may choose routes that are different than cyclists with a broader range of ages and abilities. This section explores the existing cycling infrastructure in Maplewood.

2.5.1 EXISTING CONDITIONS

Maplewood's bicycle network is made up of variety of both on-street and off-street infrastructure. There are several off-street trails suitable for recreational cycling, however, on-street facilities are more limited. The current conditions for cycling in Maplewood area are summarized in the sections below.

- **Urban Trails** – The bridge over Seymour River was recently widened to provide a multi-use pathway on the south side of Mount Seymour Parkway. This route forms part of the Seymour River Greenway route, which will connect to the future Spirit Trail in Maplewood. The trails on either side of Dollarton Highway serve as urban trails; however, cyclists and pedestrians must share the trails, which are relatively narrow to accommodate both uses.
- **Protected Bicycle Lanes** – There are no existing protected bicycle lanes in Maplewood.
- **Bicycle Lanes** – There are painted bicycle lanes along Mount Seymour Parkway. Within the Village Centre, there is lack of dedicated on-street bicycle infrastructure.
- **Neighbourhood Bikeways** – Due to lower traffic volumes and low vehicle speeds along Seymour River Place, this is currently the most suitable north-south route within Maplewood. However, parking is allowed on both sides of the street, which could make cyclist vulnerable to a door zone or provide a feeling of being squeezed.

2.5.2 EXISTING ISSUES

The review of cycling conditions identified the following key issues:

- Limited All Ages and Abilities (AAA) cycling network to, from, and through the Maplewood Village restricts cycling opportunities to the most confident cyclists. For more people to feel safe and comfortable cycling, more protected cycling facilities and neighbourhood bikeways on low volume roadways would be required.
 - Lack of north-south bicycle connections between regional cycling routes. There are no north-south dedicated bike connections between the bicycle lanes on Mount Seymour Parkway and the urban trails on Dollarton Highway. Riverside Drive between Old Dollarton Road and Mount Seymour Parkway is narrow with gravel shoulder making it an unattractive north-south route.
 - Limited crossing treatments at intersections.
-

2.6 TRANSIT

Providing frequent, convenient transit improves travel choice for residents and employees, and encourages people to consider transit instead of driving for some or all trips. This section explores the existing transit service in Maplewood.

2.6.1 EXISTING CONDITIONS

Transit service is currently limited in Maplewood area and it is not part of the Frequent Transit Network (FTN) service area. There are few routes running through this region at low frequencies. TransLink currently provides bus service to Maplewood via four routes: the 214 and 211 on Mount Seymour Parkway and Riverside Drive; the 212 on Dollarton Highway, and the C15 on Old Dollarton Road and Riverside Drive. There is also a school special – the 880 Windsor School Special – on Mount Seymour Parkway. These routes have low frequencies and / or limited service hours, making transit inconvenient for many residents and employees. TransLink typically considers increasing service to communities with a higher density of residents and / or businesses.

The 214, 211, and C15 are subject to delays at some turning movements on their routes due to traffic congestion to, from, and within Maplewood Village. This type of delay can reduce transit reliability and has travel time costs for transit passengers.

Some bus stops within Maplewood do not have sidewalks and are not fully accessible for all passengers.

Phibbs Exchange serves as a transit hub for local and regional connections. It is located on the west side of Highway 1, within one kilometre from the Maplewood Village. The walk or cycling connections to Phibbs Exchange may discourage some residents from accessing transit service at Phibbs and

may result in driving being a more attractive option for regional trips, especially during off-peak hours.

2.6.2 EXISTING ISSUES

The review of transit conditions identified the following key issues:

- Existing service is infrequent and / or has limited service hours, reducing the convenience of transit and increasing transit travel times.
- Delays due to traffic congestion may impact transit reliability and efficiency.
- Missing sidewalk connection to the bus stops reduces accessibility, safety, and comfort for transit passengers.

2.7 EXISTING CONDITIONS SUMMARY

In the existing condition, lack of pedestrian and bicycle infrastructure were found throughout the Village Centre. High traffic volumes on Mount Seymour Parkway were found to cause intersection delays along Mount Seymour Parkway during both morning and afternoon peak. Traffic patterns indicate some non-local traffic in the Village Core, with some drivers using Riverside Drive to travel through Maplewood. This increases delay at some core movements, and reduces the livability of the neighbourhood.

Multimodal north-south connectivity is limited in this area. Vehicles can currently use Riverside Drive to connect between Dollarton Highway and Mount Seymour Parkway, however, there are missing sidewalk connections along Seymour River Place, Old Dollarton Road, and Riverside Drive. Although separated bicycle facilities exist on both sides of Dollarton Highway, there are generally poor connections in the study area to connect cyclists to major destinations around Maplewood.

Existing issues are illustrated in **Figure 2-5**.

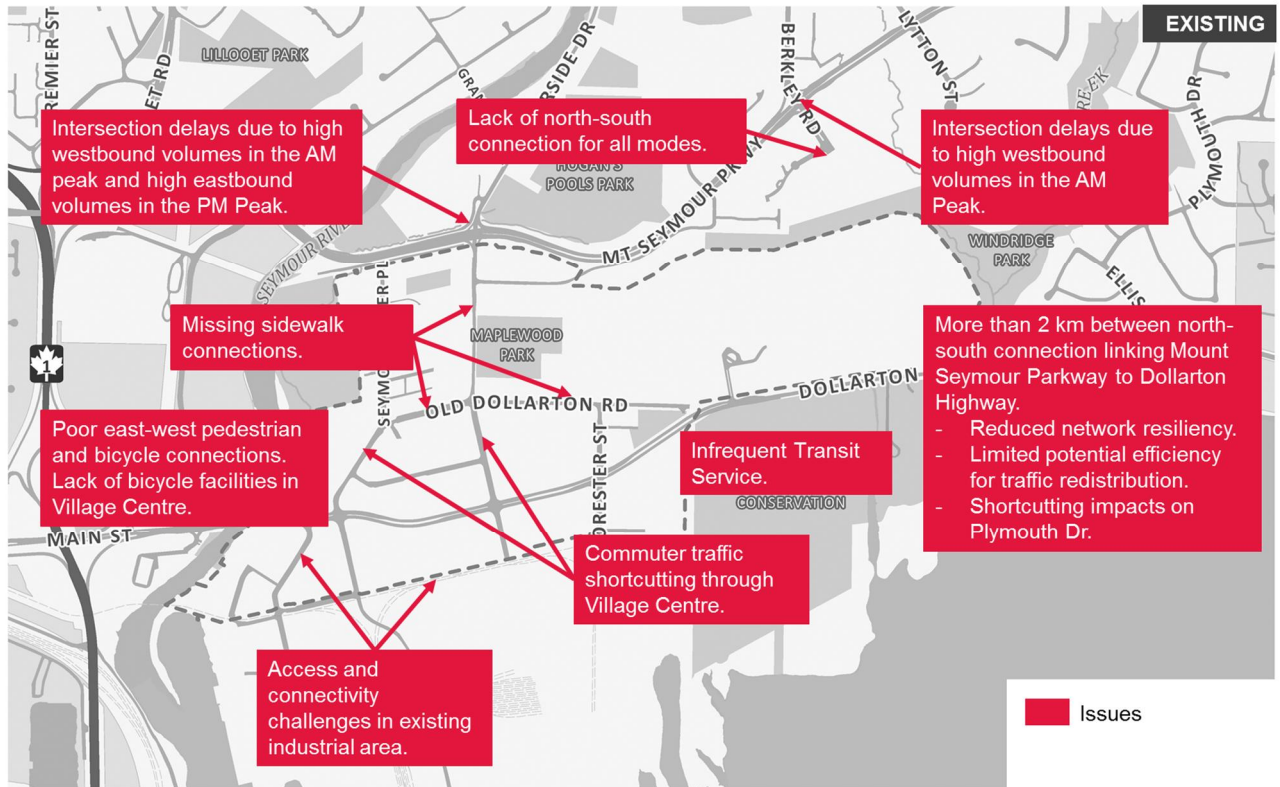


Figure 2-5: Existing Condition Issues Map

3. FUTURE BASE CONDITIONS

This section of the report describes future conditions without any improvements to the existing transportation network. The scope of this transportation study includes one future time horizon (2031) which reflects a full buildout of the planned OCP land use, however, the full build out of Maplewood could occur past that horizon.

As noted earlier, the land use assumptions for Maplewood in the future are based on a conservative approach, considering the likely highest possible use of each parcel of land. This land use scenario was prepared by the District for use by Urban Systems in the development of the traffic forecast that support this work.

3.1 EXTERNAL TRANSPORTATION NETWORK CHANGES

Other agencies have planned and approved significant network changes to major infrastructure located west of Maplewood. The Ministry of Transportation and Infrastructure (MoTI) is planning improvements to the system of three interchanges on Highway 1 immediately north of the Ironworkers Memorial Bridge. These interchanges, which are located at Mountain Highway, Keith Road/Seymour Parkway and Main Street/Dollarton Highway are collectively referred to as the “Lower Lynn Interchanges”. The planned improvements are being delivered as part of the Ministry of Transportation’s “BC on the Move” plan and will address safety, queuing and delays. The proposed improvements are intended to increase east-west capacity on the municipal road network and reduce delay at the highway ramps.

Within Maplewood, these network changes are expected to result in reduced queuing and improved traffic flow along Mount Seymour Parkway and Dollarton Highway. Mount Seymour Parkway is expected to become more attractive for east-west traffic destined for the North Shore, while Dollarton Highway is expected to become more attractive for traffic to and from the Ironworkers Memorial Bridge. The analysis carried out in this section of the report assumes that these improvements are in place by 2031.

The long-term plan for the Lower Lynn Interchanges also includes the completion of Seymour Boulevard to connect Mount Seymour Parkway to Dollarton Highway near Highway 1. The impact of this proposed connection has been assessed separately and is documented later in the report. This link is not part of the study area. The analysis did not include the development of recommended geometry for this link; rather, it assessed the impacts of the Seymour Boulevard connection on the Maplewood transportation network.

3.2 FUTURE LAND USE

The Village Centre is expected to include a wide range of housing types, along with local shops and services and business park type uses. The District completed the **Maplewood Village Centre and Innovation District Implementation Plan & Design Guidelines** in 2017 and this work, along with the preliminary findings on the employment and environmental studies, informed the development of potential land use types and densities to be used for the transportation analysis. These are listed in **Table 3-1**.

Table 3-1: Summary of Land Use Assumptions

	Detached Residential (Dwelling Units)	Medium Density Residential (Dwelling Units)	Transitional Multifamily (Dwelling Units)	Commercial (sq. ft.)	Institutional (sq. ft.)	Light Industrial (sq. ft.)
Village Centre (West)	-35	+135	+1,290	0	+5,000	0
Village Centre (East)	-40	+510	+580	+40,000	+10,000	+40,000
Dollarton Highway Light Industrial	0	0	0	0	0	+50,000
Innovation District ¹	0	0	+500 to +1000	0	0	+650,000
Total	-75	+645	+2,370 to +2,870	+40,000	+15,000	+740,000

The detailed table of land use is included in **Appendix A**. It is to be noted that the analysis included sensitivity analyses of two land use scenarios for the Innovation District in order to determine the road network requirements based on a low to high range of residential density. The results of these sensitivity analyses are discussed in further sections and documented in **Appendix D**.

¹ The Innovation District sensitive analysis considered two scenarios for residential development: 500 multifamily units and 1,000 multifamily units.

3.3 FUTURE TRAVEL PATTERNS

A review of the District's EMME transportation demand forecasting model resulted in a recommended a growth rate of 1%. This is a conservative² assumption that accounts for all potential growth east of Maplewood (both within the District and in other jurisdictions) and mode choice that is consistent with existing conditions. This growth rate was applied to the existing traffic in order to determine background traffic volumes in 2031.

Because Maplewood has existing development that will be transformed and replaced over time, some existing trips were removed from the network and replaced with the trips generated by the future development. The details of the existing and future trip generation are summarized in **Appendix C**.

Trip generation was estimated using the revised land use summary provided by the District. No internal trip reduction factor was applied, however a non-auto mode share of 20% was applied to the total person trips generated by Maplewood Village and the Innovation District. This reflects the District's current share of non-auto modes and is a conservative approach, since town and village centres are expected to have the lowest auto mode shares within the District. This provided the number of new trips based on the densification strategy and the number of existing trips to be removed based on the deconstruction of existing developments. Future trip distribution was estimated using the District's EMME model and engineering judgement. Trips were assigned based on most likely route during the peak hours. Appendix C provide more detail about the development of the traffic forecast.

The results of the forecast were applied to the future base road network for an analysis of traffic operations; the results of this analysis are provided in a later section.

3.4 FUTURE BASE TRANSPORTATION NETWORK

In order to determine the opportunities and issues associated with different network options and to develop recommended improvements, it is important to first assess the 'do nothing' conditions. The assessment of the future base transportation network reflects a future where the projected land use has been achieved, but where minimal improvements have been made to the transportation network.

The future base scenario assumes the existing transportation network is in place with no intersection and/or corridor improvements. New corridors are limited to those required to provide access to

² For the traffic analysis, conservative indicates developing traffic volumes that are likely a 'high' estimate. This allows for investigation of potential network improvements in a higher volume scenario. Traffic volumes in the study area are not expected to reach these levels if investment in walking, cycling, and transit, as well as new mobility (e.g. carshare, rideshare, etc.) reduce single occupancy vehicle trips.

developing parcels. This scenario assumes that the Lower Lynn Interchange improvements are in place, but that the Seymour Boulevard connection is not complete. The future base network is shown in **Figure 3-1**.



Figure 3-1: Future Base Transportation Network

The North Shore Area Transit Plan was completed in 2012 after extensive consultation with the North Shore Communities. Through this process, a network vision was identified to serve projected land use on the North Shore and achieve a 50 percent increase in transit mode share from 10 to 15 percent for the entire North Shore by 2040. The plan included improved frequent transit service to Maplewood. The vision for transit is shown in **Figure 3-2**.

Although improvements in service are subject to funding and planning by TransLink, the Maplewood Village Centre Transportation Plan included accommodation for improved transit. Frequent transit proposed in the North Shore Area Transit Plan would require a route to 'turn around' since frequent service is expected to terminate in or near Maplewood. Potential transit routes along Forester Street, Old Dollarton Road, and Riverside Drive would provide direct connections within the Village and support this proposed service. Because these improvements have been identified through the North Shore Area Transit Plan, the Future Base Transportation network includes some improvements to transit service to Maplewood.

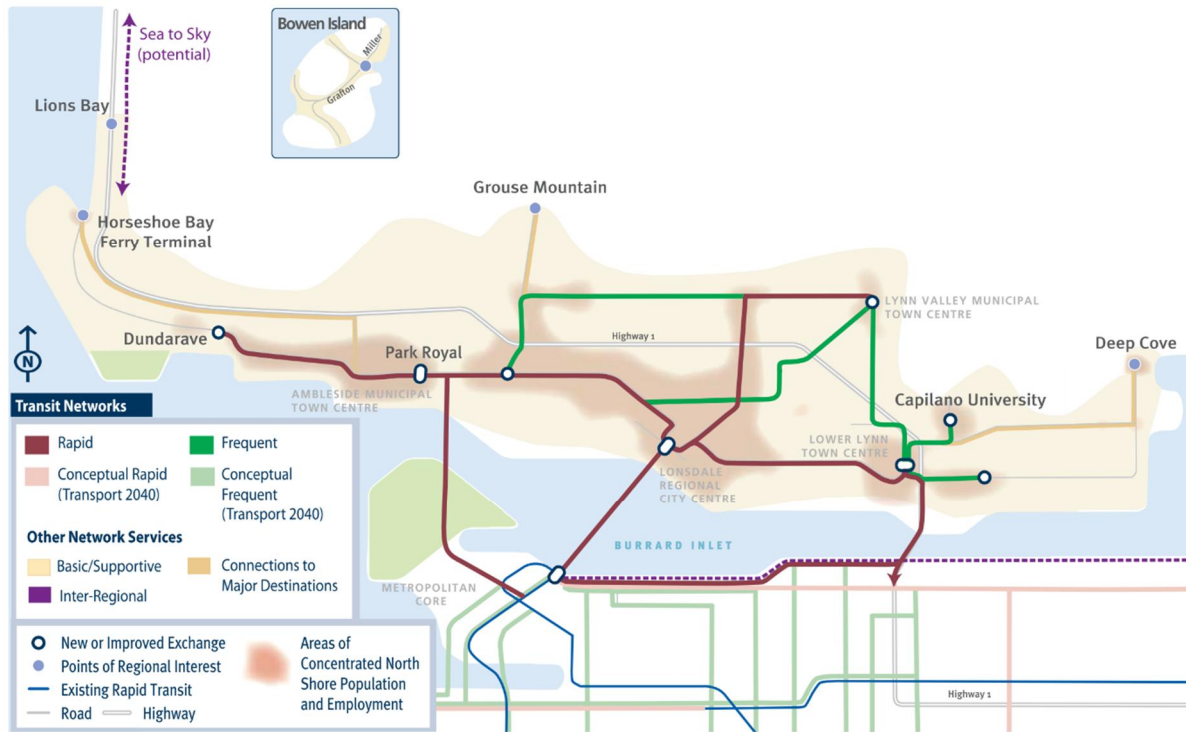


Figure 3-2: North Shore Transit Vision (Source: TransLink)

Two potential alignments through Maplewood have been identified for the North Shore Spirit Trail. There is an opportunity to provide regional walking and cycling connectivity through the inclusion of this east-west trail in the plan for the future Maplewood; however, because there is no committed alignment, it has not been included within the future base network.

Key features of the base network include:

- Two new accesses to the proposed Innovation District from Dollarton Highway - The western access is connected to Dollarton Highway near the current International School access and would also provide egress from the District's fire facility. The second access would be located further east and form a 'T' intersection with the roadway forming the first access. This eastern access would also allow for connections to the industrial uses within Innovation District via smaller local roads.
- More frequent transit service along Dollarton Highway with potential for service on Riverside Drive / Old Dollarton Road and / or Forester Street. In this condition, Maplewood becomes part of the FTN.
- No road network geometry improvements to existing intersections or corridors.
- No new trails, sidewalks, or cycling connections.

3.5 FUTURE BASE TRANSPORTATION NETWORK ASSESSMENT

This section summarizes the results of the assessment of future conditions on the future base network, as described above. The assessment is presented by mode, followed by an overall summary of issues and opportunities.

3.5.1 FUTURE BASE GOODS MOVEMENT AND DRIVING ASSESSMENT

With growth in both the background traffic and traffic generated by the Maplewood Village and Innovation District, the volume of traffic along all major arterials in the study area is expected to increase beyond the typical capacity per lane for urban arterials. If no improvements are made to the network, either as new links, increased capacity, or intersection improvements, traffic delays, queues, and volume / capacity ratios are expected to increase beyond acceptable levels. The assessment of the future base indicated a number of areas where improvements are required to support efficiency, reliability, and livability.

Traffic volumes along Mount Seymour Parkway and Riverside Drive are expected to exceed 1,000 vehicles per lane per hour; traffic operations on signalized urban arterials typically start to degrade between 900 and 1,200 vehicles per lane per hour, depending on the other characteristics of the roadway. Due to lack of network redundancy and high westbound movements at Mount Seymour Parkway, Riverside Drive is still expected to be used by commuter traffic to access Dollarton Highway to the south. Slow traffic in urban centre is acceptable, however, there are no alternate routes for traffic to access Dollarton Highway (or on to Ironworkers Memorial Bridge) when Mount Seymour Parkway is congested. Intersection improvements at locations with delays or v/c ratios that exceed the accepted level can be expected to reduce delay, but may not be sufficient to address growing volumes. These volumes indicate that some improvement measure is needed – this could be the addition of a new north-south link to better distribute traffic between Mount Seymour Parkway and Dollarton Highway east of Riverside Drive, or additional east-west capacity along Mount Seymour Parkway.

The lack of network redundancy in the future base is expected to result in other issues and challenges. Any incident that disrupts traffic along Riverside, Mount Seymour Parkway, or Dollarton Highway could be expected to have significant network implications due to the lack of alternative routes and the high level of recurring congestion. During times of congestion, it is likely that drivers would continue to use Plymouth Drive to travel between Mount Seymour Parkway and Dollarton Highway, worsening conditions for residents along this collector road.

The future base traffic volumes and results of the traffic analysis are shown in **Figure 3-3**. There are a number of intersections that are expected to operate with LOS of 'E' or 'F' in the morning or

afternoon peak periods. These are largely focused on intersections along Mount Seymour Parkway and Dollarton Highway.

Delays along Mount Seymour Parkway are expected to increase with increasing traffic volumes on through movements and turning movements. The intersection LOS is expected to be 'F' in the morning peak hour at Mount Seymour Parkway intersections with Berkley Road, Riverside Drive, and Browning Place. The intersection of Mount Seymour Parkway and Riverside Drive is also expected to experience an LOS 'F' in the afternoon peak hour. High peak period, peak direction volumes and high left turn volumes result in a number of movements with LOS 'F' and v/c greater than 0.9 and queues in this condition can be expected to exceed the available storage in some locations.

Traffic volumes are expected to increase along Dollarton Highway, with more traffic using this route following changes to the Highway 1 interchanges. Some major intersections with Dollarton Highway are expected to operate at LOS 'F' during morning and afternoon peak hours and several minor movements along Dollarton Highway are expected to experience increasing delays with LOS 'E' or 'F'. At Old Dollarton Road & Dollarton Highway, the LOS 'F' in the morning peak hour is linked to high the southbound right turn volume, which conflicts with the high westbound through movement.

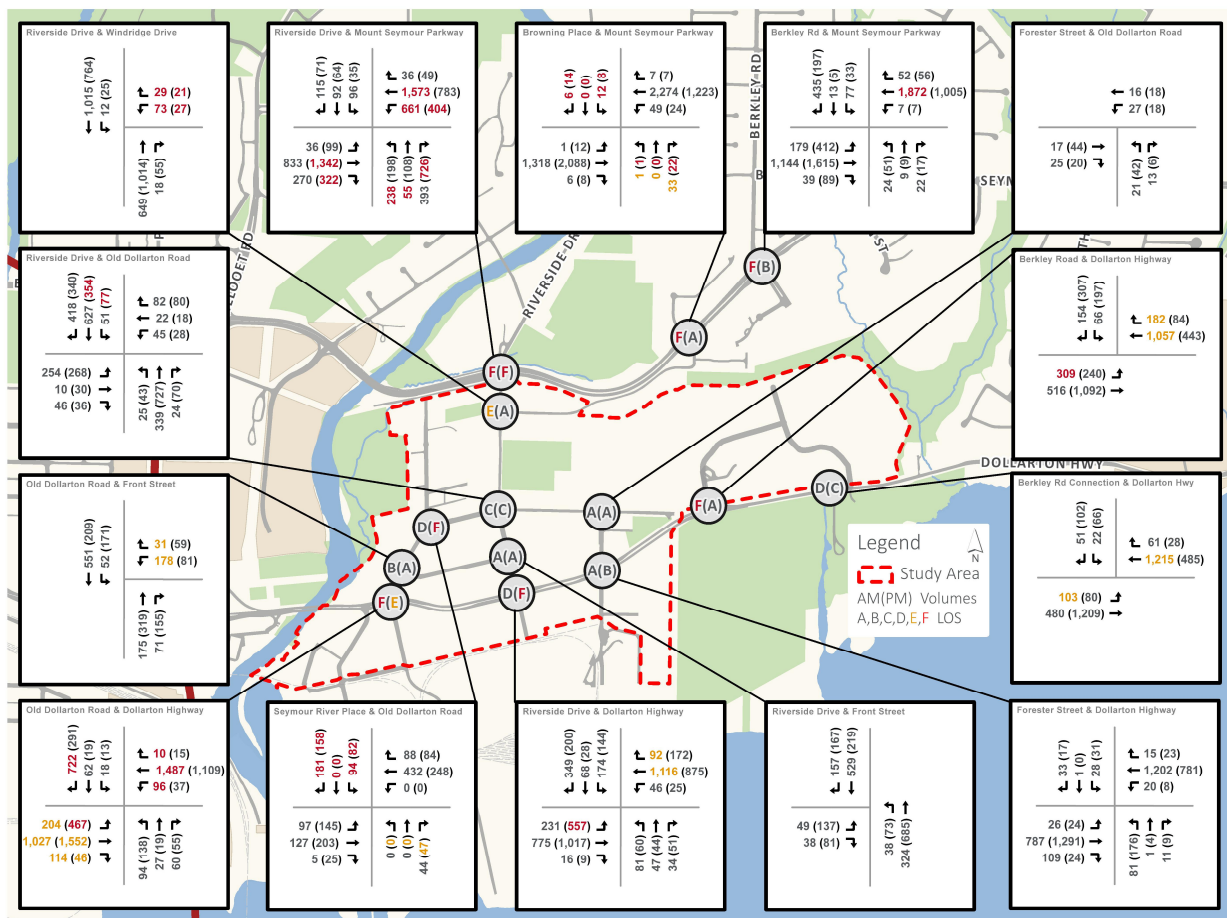


Figure 3-3: Future Base Traffic Volumes and Operations

A District fire station and training facility is expected in the Innovation District. This facility would have access to Dollarton Highway via the proposed new roadway; however, there would be no access to Mount Seymour Parkway from the fire hall in case of an incident on Dollarton Highway.

3.5.2 FUTURE BASE WALKING ASSESSMENT

The future base case assumes limited improvements to the walking network with an increase in land use density. This means that the issues identified in the existing condition will continue to exist under this scenario; however, the walking environment can be expected to be worsened by the expected increase in traffic volumes through the Village Centre. Not providing improvements to the pedestrian realm can also be expected to reduce the attractiveness of walking as a mode of transportation and limit the potential for mode shift to walking from driving.

3.5.3 FUTURE BASE CYCLING ASSESSMENT

The future base case assumes no improvements to cycling facilities with an increase in land use density. Similar to walking, the issues identified in the existing condition will continue to exist under this scenario and cycling comfort and safety can be expected to decrease as traffic volumes increase. Not providing improved cycling facilities, and especially AAA facilities, can be expected to reduce the attractiveness of cycling as a mode of transportation.

3.5.4 FUTURE BASE TRANSIT ASSESSMENT

Based on the North Shore Area Transit Plan, the frequency of service to Maplewood can be expected to increase. This should lead to increased transit mode share as trips destined within the North Shore and over the Ironworkers' Memorial Bridge shift to transit. The potential for transit mode share may be limited by incomplete or poor walking connections, which are essential for transit accessibility.

Increased traffic volumes and delay on Riverside Drive, Mount Seymour Parkway, and Dollarton Highway are expected to negatively impact transit in the future base. Without transit priority measures, delays to vehicles also delay transit. This can result in reduced transit efficiency and reliability.

To maximize the effectiveness of the investment in transit service, it should be supported by strong walking and cycling infrastructure and transit supportive infrastructure, such as improved stops and local services, which is not provided in the future base network.

3.6 FUTURE BASE CONDITIONS SUMMARY – ISSUES AND OPPORTUNITIES

The key issues and opportunities for future base scenario are illustrated in **Figure 3-4**. In the absence of road network and intersection improvements, delays to traffic, goods movement, and transit are expected to increase at major intersections within the study area. These delays will be especially significant along Mount Seymour Parkway and Dollarton Highway, and can be expected to impact both local and regional traffic. Infrastructure and services for non-auto modes of transportation are poor, with missing connections for cycling and walking. The only connection between the Innovation District and Village Centre is via Dollarton Highway, which can be expected to add additional traffic through the Village Area and on intersections along Dollarton Highway.

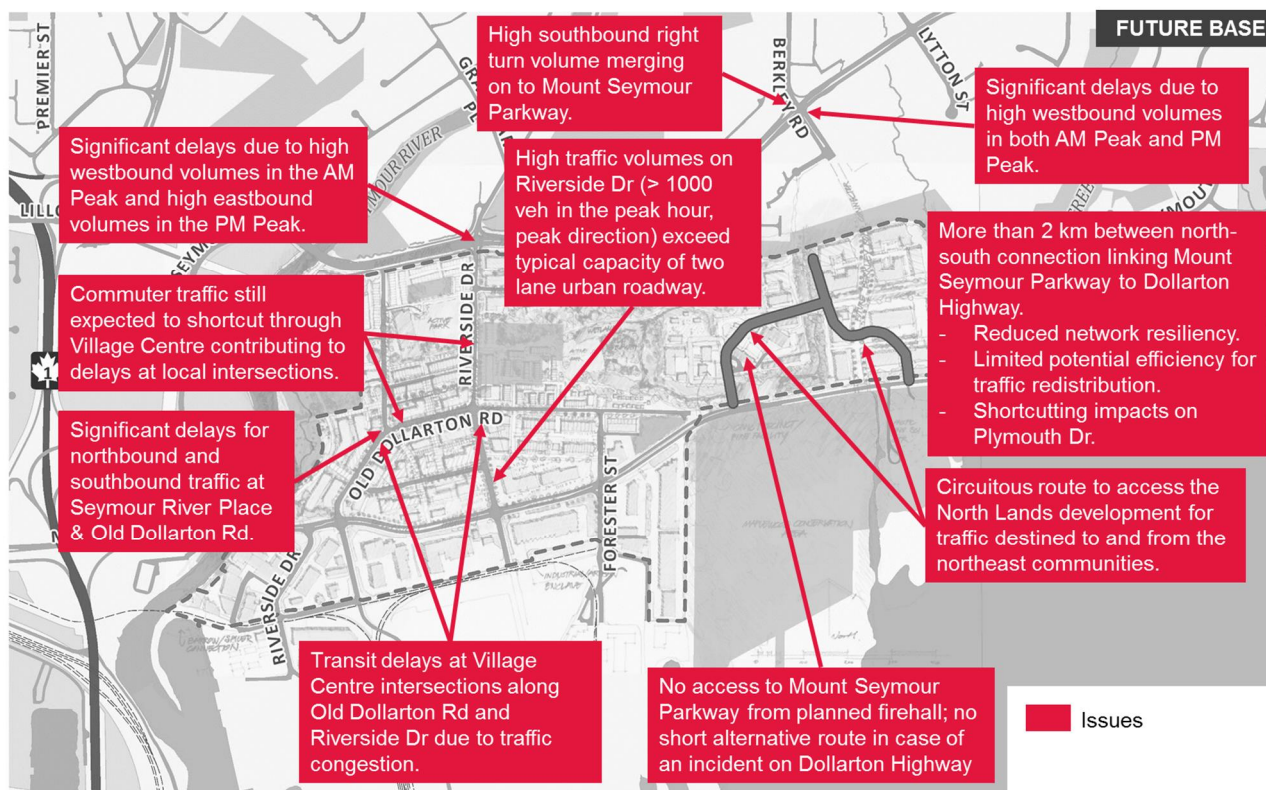


Figure 3-4: Future Base Issues and Opportunities Map

4. OPTIONS ANALYSIS

The transportation network as a whole must be planned and designed to address existing issues, achieve the vision and objectives of the community, and to respond to proposed changes in land use. This means identifying desire lines for different modes of transportation and identifying corridors to accommodate the anticipated demand. The Innovation District in the east part of the study area is currently undeveloped – i.e. with limited existing transportation infrastructure. Before finalizing the overall transportation network needs and recommended improvements to existing infrastructure, it is important to identify, at a high level, the recommended connections to be made by new corridors and to determine the shape of the overall network at a high level.

This study evaluated three high level options to determine which overall transportation network provided the greatest benefit to the Maplewood Area. The three options were chosen as a way to determine the impact of different network configurations, focusing on the number of north-south roadway connection between Mount Seymour Parkway and Dollarton Highway. These connections have been identified by the District and other agencies through previous work, including in the 2011 Transportation Plan and 2011 Road Network Study. The summary of the options are as follows:

- **Option 1** is an ‘improved status quo’ condition with some local improvements for all modes of transportation, but no new north-south connections.
- **Option 2** provides a new connection along the Berkley Road alignment, which had been identified through previous work as required to support development in the undeveloped lands east of Maplewood Village. This option also includes all the local multimodal improvements included in Option 1.
- **Option 3** includes the Berkley Road connection, as well as a second north-south connection at Seymour Boulevard, which had been identified by the District, as well as by MoTI in previous work. This option also includes all the local multimodal improvements included in Option 1.

This section presents a description of each network option, evaluation of the impact of each option on different modes of transportation, and presentation of a recommended option. The options were evaluated based on the 2031 horizon with full build-out of the proposed land uses in the study area.

4.1 OPTION 1 – LIMITED NEW NETWORK

Option 1 includes improvements to the existing intersection geometries, sidewalks, cycling network, and transit facilities. This option represents the improvements recommended as part of the *Maplewood Village Transportation Plan* (Urban Systems, 2013).

Key features of this network include:

- **Improvements at Mount Seymour Parkway & Riverside Drive:** Additional northbound and southbound left turn storage lanes with protected/permitted phasing, along with longer

northbound and southbound right turn lanes. Dual westbound left turn lanes with dual southbound receiving lanes. Additional eastbound merge lane on east approach to improve northbound right turn operation.

- **Spicer Road Connection:** Spicer Road connected between Amherst Avenue and Riverside Drive as a 2-lane local road with sidewalks on the north side.
- **Windridge Drive Extension:** Building on the recommendation from the previous *Maplewood Transportation Plan* (Urban Systems, 2013), Windridge Drive was assumed to be extended to Riverside Drive as one-way local road with sidewalks and bicycle lane.
- **Munster Avenue Extension:** Two-way local road with right-in/right-out operation at Riverside Drive with sidewalk on one side of the road.
- East-west off-street pathway between Riverside Drive and the Innovation District
- Continued off-street pathway along Dollarton Highway from the west access to Berkley Road.

4.1.1 OPTION 1 GOODS MOVEMENT AND DRIVING ASSESSMENT

Mount Seymour Parkway, Dollarton Road, and Riverside Drive continue to serve both regional and local traffic in this option. Riverside Drive remains the only north-south arterial and accommodates both regional traffic seeking the most efficient route for east-west travel or to the Ironworkers Memorial Bridge, as well as trips destined for Maplewood. This 'shortcutting' through the village centre can be expected to result in traffic volumes on Mount Seymour Parkway and Riverside Drive that exceed the typical capacity per lane for arterial roads. Some of these volumes can be accommodated with the intersection improvements identified above; however, proposed road widenings and intersection improvements have property impacts and some may not be consistent with other goals of a walkable community.

In Option 1, traffic volumes on both Mount Seymour Parkway and Riverside Drive exceed 1,000 vehicles / lane / hour; traffic operations on signalized urban arterials typically start to degrade between 900 and 1,200 vehicles per lane per hour, depending on the other characteristics of the roadway. On Riverside Drive, this would translate to a near-continuous stream of traffic during peak periods, with queues entering, leaving, and within the community. Due to lack of network redundancy and high westbound movements at Mount Seymour Parkway, Riverside Drive is still expected to be used by commuter traffic to access Dollarton Highway to the south. Slow traffic in urban centre is acceptable, however, there are no alternate routes for traffic to access Dollarton Highway (or on to Ironworkers Memorial Bridge) when Mount Seymour Parkway is congested. In this condition, it is likely that drivers would continue to use Plymouth Drive to travel between Mount Seymour Parkway and Dollarton Highway during times of congestion, worsening conditions for residents along this Collector Road.

The results of the traffic operations analysis in 2031 for morning and afternoon peak periods are illustrated in **Figure 4-1**. Overall, with the proposed improvements in place, most of the intersections in the study area operate at LOS 'E' or better in both peak periods. The proposed improvements have addressed many of the issues identified in the Future Base condition, although some delays remain.

These include:

- **Mount Seymour Parkway & Browning Place** – LOS 'F' during the morning peak period, where increasing east-west traffic volumes leave few gaps for northbound and southbound stop-controlled movements.
- **Riverside Drive & Windridge Drive** – LOS 'F' during the afternoon peak period, when high northbound and southbound volumes on Riverside Drive leave few gaps for eastbound and westbound stop-controlled movements.
- **Old Dollarton Road & Dollarton Highway** – LOS 'F' during the morning peak period when high southbound right turn volumes conflict with high westbound through volumes. The high southbound right turn volumes are related to regional traffic using Riverside Drive and Old Dollarton to travel between Mount Seymour Parkway and Dollarton Road.

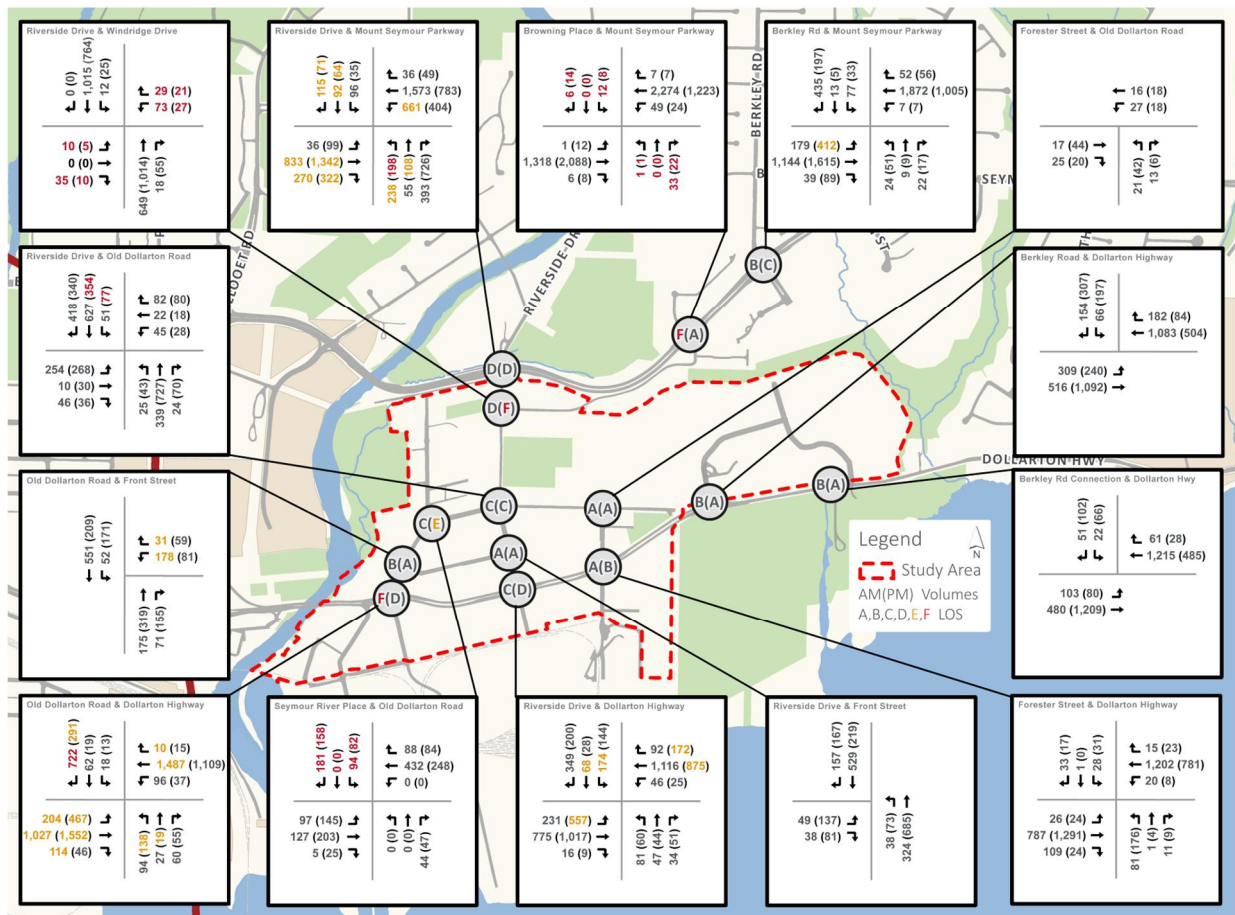


Figure 4-1: Option 1 Traffic Volumes and Operations

As in Existing Conditions and Future Base, many of the delays in Option 1 are associated with traffic travelling through the Maplewood Village instead of to the Maplewood Village; this traffic is not contributing to the economic health local businesses, but is expected to detract from the overall livability, vibrancy, and walkability within heart of the community.

Within the community, some key improvements are expected to reduce unnecessary traffic circulation and, which in turn is expected to reduce conflicts and improve safety and efficiency. The addition of a one-way egress from Seymour River Place to Riverside Drive along the Windridge Drive alignment and the Munster Avenue Extension will improve circulation in this part of the community. The current network does not provide an effective egress, which requires vehicles to make a 'u-turn' at Seymour River Place and Heritage Park Lane. This creates potential conflict with other vehicles, bicycles, and pedestrians.

A sensitivity analysis that investigated the effects of higher residential density in the Innovation District indicated found that higher residential density resulted in additional delay along Old Dollarton Road. The increased delay did not result in more intersections or movements with LOS 'E' or 'F'.

Details of the analysis are included in **Appendix D**.

4.1.2 OPTION 1 WALKING ASSESSMENT

Option 1 assumes major improvements to the walking network at Village Centre as well as the Innovation District. All missing sidewalk connections are expected to be completed with new sidewalks at locations such as Old Dollarton Road, Seymour River Place, Riverside Drive and Front Street.

The assessment of the walking network in the future base condition resulted in the following key findings:

- New pedestrian connections from Seymour River Place and Munster Avenue to Riverside Drive allows residents shorter and more direct routes to the bus stops along Riverside Drive.
- The off-street pathway east of Riverside Drive connects the Village Centre directly to the Innovation District and provides a better connection to the community and recreational facilities east of Berkley Road. This route can further develop into the proposed Spirit Trail connection and serve as a major east-west regional walking and cycling connection for the North Shore.
- Old Dollarton Road between Riverside Drive and Dollarton Highway is still expected to have shortcutting traffic. Without reduction in traffic volumes along this route or further traffic calming, pedestrian-vehicle conflicts are expected at the intersections.

4.1.3 OPTION 1 CYCLING ASSESSMENT

Option 1 provides cycling connection within Village Centre as well as improved east-west connections. These include bicycle lanes, protected bicycle facilities, and off-street pathways. As a result, residents have more options to travel to surrounding neighbourhoods as well as recreational trails.

The assessment of the cycling network in the future base condition resulted in the following key findings:

- New east-west connection along Windridge Drive and Muster Avenue from Seymour River Place towards east of Riverside Drive provides continuous route. This allows cyclists that aren't comfortable riding on Mount Seymour Parkway to travel on either a local road with much lower volumes or an off-street facility without having to travel south and continue at Dollarton Highway.
- The off-street pathway west of Seymour River Place connecting Seymour Greenway Trail provides resident direct connection to recreational trail.
- The direct north-south connection on Riverside Drive allows cyclists to travel without having to navigate through neighbourhood streets.
- New east west connections also result in potential crossing locations along Riverside Drive. A pedestrian half-signal should be considered at these crossing locations to improve connectivity.

4.1.4 OPTION 1 TRANSIT ASSESSMENT

Similar to the future base, traffic delays on Riverside Drive, Mount Seymour Parkway, and Dollarton Highway are still expected to negatively impact transit in Option 1. Without transit priority measures, delays to vehicles also delay transit. This can result in reduced transit reliability.

Improved walking infrastructure will improve access to transit and may enhance the mode-shift effects of increased transit frequency.

4.1.5 OPTION 1 CONDITIONS SUMMARY – ISSUES AND OPPORTUNITES

Under Option 1, capacity expansions at key intersections mitigate some of the traffic performance challenges noted in the Future Base conditions; however, traffic congestion and increasing delay is still expected at major intersections along Mount Seymour Parkway. Further, without a north-south connection parallel to Riverside Drive, commuter traffic is still expected to shortcut through Riverside Drive. This results in traffic volumes along Riverside Drive that exceed the expected capacity and may result in high delays, queuing, and reduced quality of life. The walking and cycling environment is expected to improve throughout the Village Centre due to the new pedestrian and cycling facilities; however, the environment for pedestrians and cyclists will be negatively impacted by traffic volumes, especially on Riverside Drive. East- west off-street pathways would encourage more residents of Maplewood to walk and cycle. Transit is susceptible to delays at the intersection operations along Old Dollarton Road. The issues and opportunities for Option 1 are summarized in **Figure 4-2**.

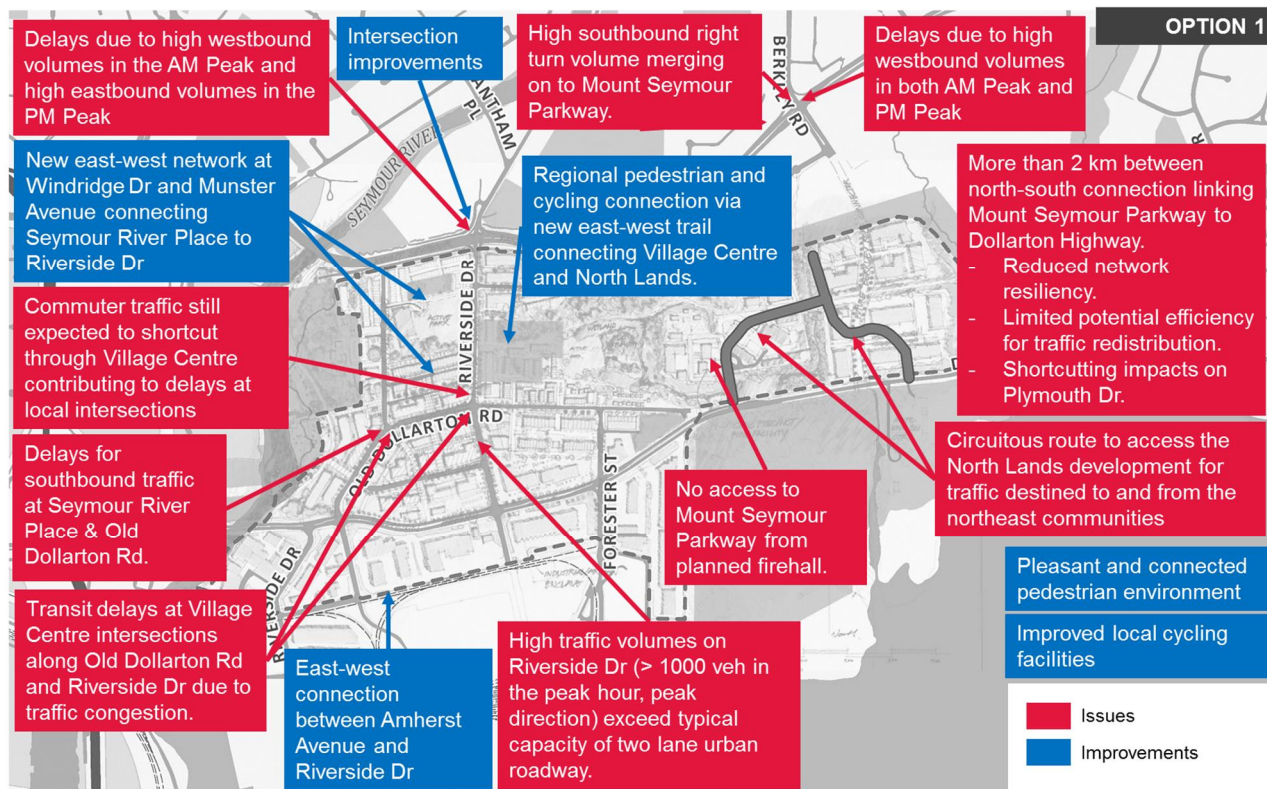


Figure 4-2: Option 1 Issues and Opportunities Map

4.2 OPTION 2 – NEW BERKLEY ROAD CONNECTION

Option 2 builds on the improvements identified in Option 1 with a north-south connection along Berkley Street connecting Mount Seymour Parkway and Dollarton Highway.

Key features of this network in addition to the improvements identified in Option 1 include:

- Berkley Road Connection:** Berkley Road to be extended south of Mount Seymour Parkway as a two-lane roadway connecting Mount Seymour with Dollarton Highway. The intention is to create a new multi-modal connection that will improve network connectivity and redundancy, reduce short-cutting, and improve operations, while providing access to the new development in the Innovation District. For the purposes of this analysis, no changes to the existing intersection geometry were assumed. Accesses along Berkley Road are expected to be limited to one or two public roadways, with most of the accesses to the industrial development assumed to be provided from the east-west collector road. Sidewalks on both sides of Berkley Road with protected bicycle facilities. There is potential for future transit along Berkley Road

and it is expected to serve as a goods movement access for local businesses and to accommodate the regional movement of goods and services.

- **Road A:** A new two-lane road with protected cycling and sidewalks that will provide access between Berkley Road and development within the Innovation District.

4.2.1 OPTION 2 GOODS MOVEMENT AND DRIVING ASSESSMENT

The addition of Berkley Road to the Maplewood network provides a second north-south connection between Mount Seymour Parkway and Dollarton Highway, which has a number of positive outcomes for mobility. The new connection provides better connectivity to the Innovation District and District Fire Hall, with a direct connection to both Mount Seymour Parkway and Dollarton Highway; this is expected to improve the reliability of the network during times of congestion or where there is an incident on the arterial road network. It is also expected to reduce congestion and delay, and to improve the livability of the Maplewood Village.

Berkley Road also increases the north-south capacity of the network and diverts regional traffic from Riverside Drive. This results in traffic volumes on Riverside Drive that are less than 750 vehicles per direction in the peak hour, which is well within the capacity of the roadway. As a result, traffic delay throughout the Maplewood Village is significantly lower than in other options. At the same time, diverting traffic to Berkley Road allows for the more effective usage of overall network capacity, with forecast traffic volumes on Mount Seymour Parkway less than 1,800 vehicle per direction in the peak hour. Traffic volumes on Dollarton Highway are expected to increase west of Berkley Road, where there is sufficient capacity. The traffic reassignment also reduces the volume of traffic turning into and out of the Maplewood Village from Dollarton Highway, which reduces conflicting movements and resulting delay.

The results of the traffic operations analysis in 2031 for morning and afternoon peak periods are illustrated in **Figure 4-3**. Overall, all intersections in the option operate with LOS 'D' or better in the morning and afternoon peak hours, with the exception of Mount Seymour Parkway and Browning Place during the morning peak period, where increasing east-west traffic volumes leave few gaps for northbound and southbound stop-controlled movements. It should be noted that because of the effects of Berkley Road in diverting westbound traffic to Dollarton Highway, the delay to southbound vehicles at Browning Place should be similar to existing conditions. Northbound traffic at this intersection can be expected to increase due to development; however, these vehicles can choose to use Riverside Drive to avoid the potential delay at Browning Place.

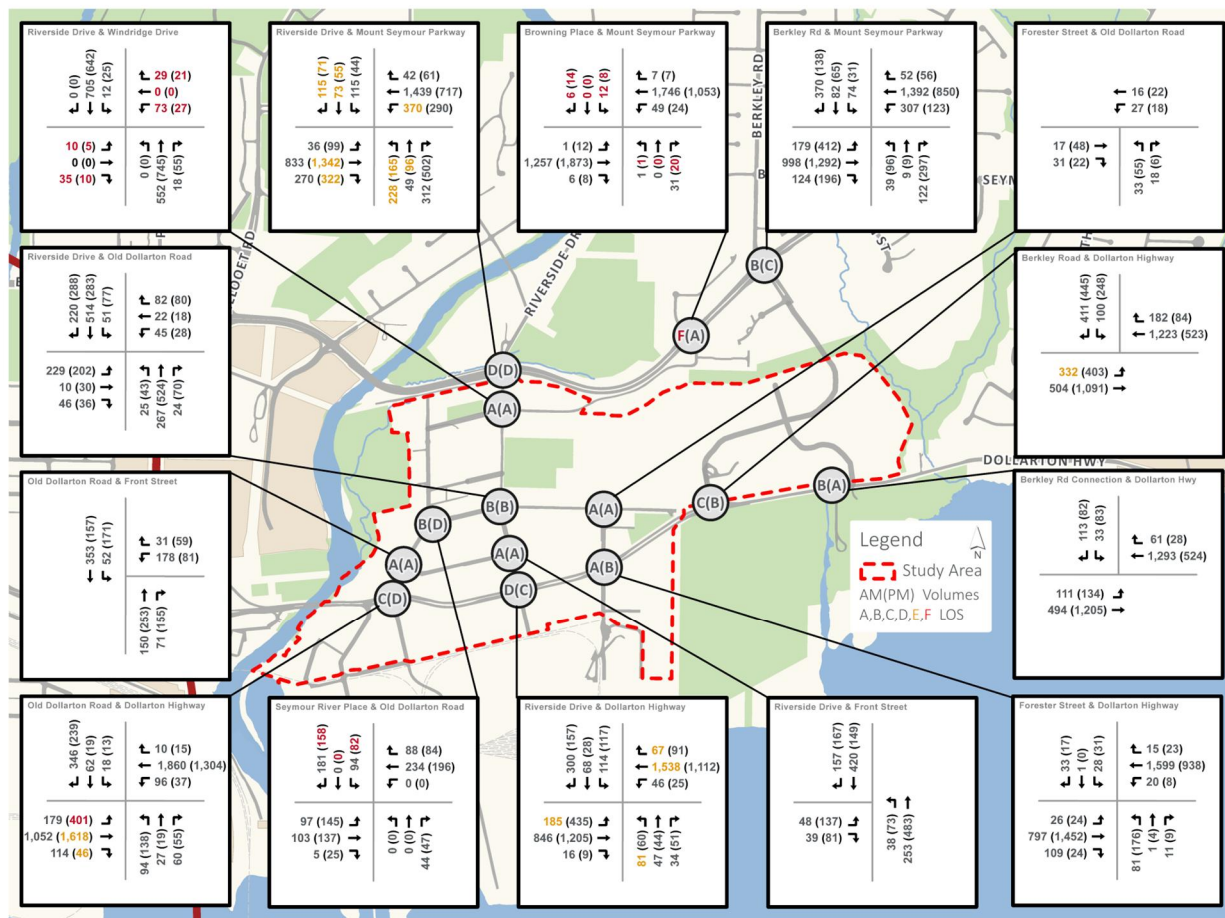


Figure 4-3: Option 2 Traffic Volumes and Operations

A sensitivity analysis that investigated the effects of higher residential density in the Innovation District indicated found that higher residential density resulted in additional delay along Old Dollarton Road. The increased delay did not result in more intersections with LOS 'E' or 'F' Details of the analysis are included in **Appendix D**.

4.2.2 OPTION 2 WALKING ASSESSMENT

Option 2 provides additional north-south walking connection along Berkley Road. As a result, residents and employees in the Innovation District as well the communities north of Mount Seymour Parkway have more options for walking connections.

The assessment of the walking network in the future base condition resulted in the following key findings:

- Reduced traffic volumes within Village Centre due to less shortcutting traffic reduces pedestrian conflicts with vehicles.
- Cycling facilities along Berkley Road provides additional north-south connection and potential alternate route to connect to Spirit Trail.

4.2.3 OPTION 2 CYCLING ASSESSMENT

Option 2 provides additional north-south cycling connection along Berkley Road. As a result, residents and employees in the Innovation District as well the communities north of Mount Seymour Parkway have more options for cycling connections.

The assessment of the cycling network in the future base condition resulted in the following key findings:

- Reduced traffic volumes within Village Centre due to less shortcutting traffic reduces cyclist conflicts with vehicles.
- Cycling facilities along Berkley Road provides additional north-south connection and potential alternate route to connect to Spirit Trail.

4.2.4 OPTION 2 TRANSIT ASSESSMENT

Traffic volumes and delays on Riverside Drive, Mount Seymour Parkway, and Old Dollarton Road are expected to reduce due to a shift of traffic onto Berkley Road. The reduced delays along the intersections on all these roadways benefit the transit buses on these routes.

The assessment of the transit network in the future base condition resulted in the following key findings:

- Operation within the Maplewood Village Centre is expected to be less impacted by traffic than in the future base condition and Option 1.
- Providing a new north-south connection between Dollarton Highway and Mount Seymour Parkway improves the suitability of the network for future transit expansion and reduces the potential cost of providing a higher level of transit coverage to Innovation District residents and businesses.

4.2.5 OPTION 2 CONDITIONS SUMMARY – ISSUES AND OPPORTUNITES

Under Option 2, traffic volumes are balanced between the intersections along Mount Seymour Parkway and Dollarton Highway. The shortcutting traffic through Village Centre is expected to travel along Berkley Road connection. However, this causes increase in volumes on Dollarton Highway west of Berkley Road and therefore this section of Dollarton Highway must be considered for widening. Due to Berkley Road providing north-south connection, regional travellers as well as traffic destined to the Innovation District have more connectivity options. The new walking and cycling facilities along Berkley Road also provides options to the residents in the Innovation District as well the communities north of Mount Seymour Parkway. Transit routes along Old Dollarton Road and

Riverside Drive benefit from the reduced delays due to the shift in traffic volumes away from Village Centre. The issues and opportunities for Option 2 are summarized in **Figure 4-4**.

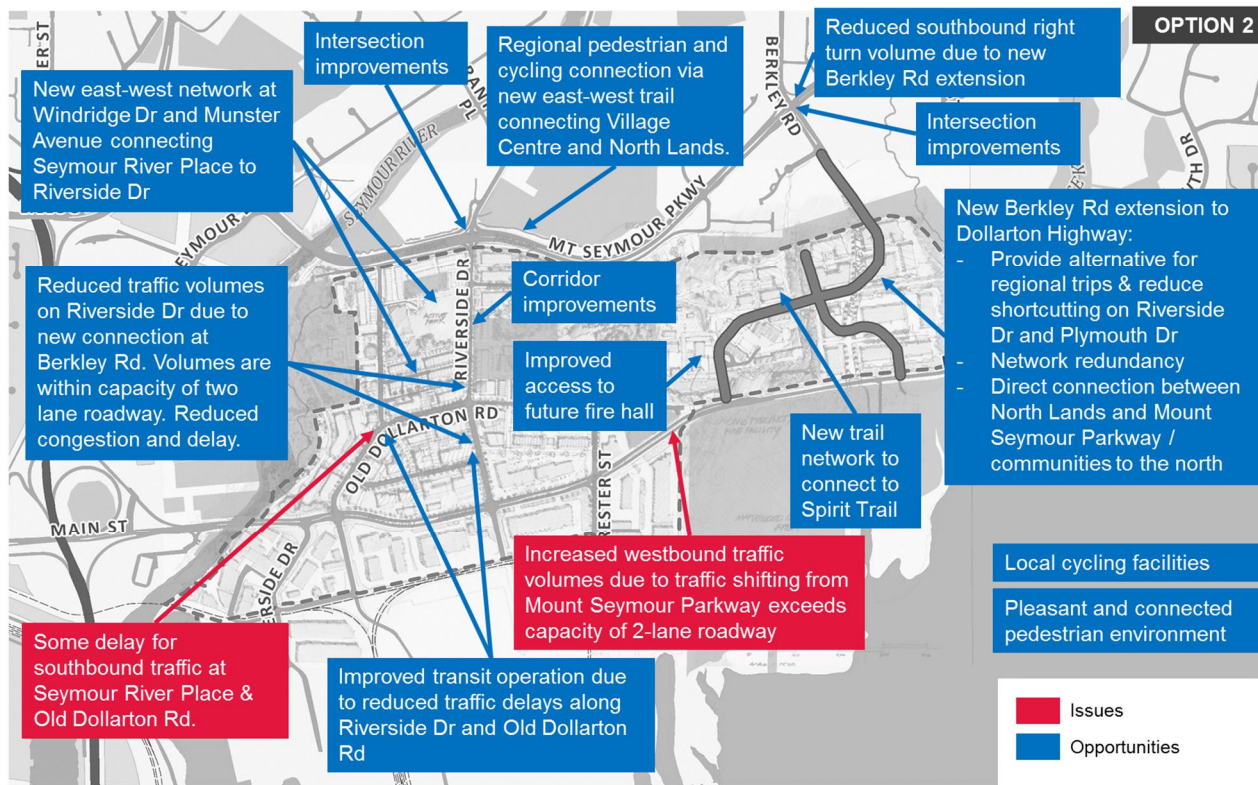


Figure 4-4: Option 2 Issues and Opportunities Map

4.3 OPTION 3 – NEW BERKLEY ROAD CONNECTING PLUS NEW SEYMOUR BOULEVARD CONNECTION

Option 3 builds on the improvements identified in Option 2 with a new north-south connection along connecting Mount Seymour Parkway and Dollarton Highway at Seymour Boulevard. This connection is part of the long-term network associated with the Highway 1 Lower Lynn Interchange improvements and would also provide service to future potential development on the Squamish Nation land east of highway 1. The connection itself is outside of the scope of this study; the assessment presented here considers the potential impacts of a new connection at this location on transportation within Maplewood.

Key features of this network in addition to the improvements identified in Option 2 include:

- **Seymour Boulevard Connector:** Seymour Boulevard was assumed to be a new four lane connection extending south from its current alignment at Mount Seymour Parkway to connect to the Highway 1 interchange at Main Street / Dollarton Highway. Evaluation using the regional

travel demand model indicated that the introduction of the Seymour Boulevard Connector is not expected to influence traffic patterns in the Maplewood Village Centre.

4.3.1 OPTION 3 BASE GOODS MOVEMENT AND DRIVING ASSESSMENT

The new connection between Mount Seymour Parkway and Dollarton Highway west of Maplewood is expected to have minimal effect on the traffic assignment within Maplewood Village or between Mount Seymour Parkway and Dollarton Highway within the study area. Because of this, the results of the traffic were unchanged from what was presented as part of Option 2 and can be referenced in that section.

Changes resulting from this third connection are expected to be localized in the area around the Highway 1 Lower Lynn Interchanges.

4.3.2 OPTION 3 WALKING ASSESSMENT

Option 3 does not include changes to the walking environment within the study area beyond what is included in Option 2. As such, the findings for the walking assessment are consistent to those summarized under Option 2.

4.3.3 OPTION 3 CYCLING ASSESSMENT

Option 3 does not include changes to the transit environment within the study area beyond what is included in Option 2. As such, the findings for the cycling assessment are consistent to those summarized under Option 2.

4.3.4 OPTION 3 TRANSIT ASSESSMENT

Option 3 does not include changes to the transit environment within the study area beyond what is included in Option 2. As such, the findings for the cycling assessment are consistent to those summarized under Option 2.

4.3.5 OPTION 3 CONDITIONS SUMMARY – ISSUES AND OPPORTUNITIES

Since the benefit of the improvements due to Option 3 is expected outside of the Maplewood area, no additional issues or opportunities are expected to arise within the study area.

4.4 OPTION EVALUATION

4.4.1 GUIDING PRINCIPLES FOR EVALUATION

A number of guiding principles were established to help inform the assessment of the improvement option for each mode as summarized below.

Connectivity and Network Resilience

- Provide a transportation network that allows for effective and efficient local and regional multi-modal movements and allows for the efficient distribution of traffic.
- Reduce the impacts of incidents and non-recurrent congestion on the road network.
- Allow for effective emergency egress and access to emergency services.

Driving and Goods Movement

- Where possible, provide satisfactory level of service for all vehicle movements at all Village Centre intersections. Maintain LOS 'D' or better for all signalized intersections with v/c ratios for all individual movements less than or equal to 0.90. Where providing these movements would negatively impact liability, pedestrian scale, or walkability, carefully consider the balance of urban intersection design and reduction in vehicle delay. Minimize delays at unsignalized intersections.
- Divert regional traffic from shortcutting through local roadways and improve the efficiency of the overall network.
- Keep dangerous good route away from densifying Village Centre. Consider reassigning dangerous route away from Riverside Drive.
- Reduce impacts of traffic delays on goods movement vehicles and liability impacts of goods movement (noise, air quality, etc.) on the Village Centre.

Pedestrians

- Improve permeability and redundancy with respect to connections. Greater connectivity through safe and appealing pedestrian facilities and crossings along the appropriate desire lines to connect pedestrians within Village Centre as well as from surrounding neighbourhoods to the Village Centre.

Cyclists

- Provide a robust bicycle network connection for local and regional travel. Implement bicycle connection within the Village Centre to get people moving between major destinations which also connects to regional bicycle network and/or recreational trails.
- Provide bicycle facilities that will attract new riders of all ages and abilities(AAA). These routes are generally separate from traffic in order to increase rider comfort and safety. . One of the key intents of providing AAA facilities is to attract the 'interested but concerned' target market

to start cycling; this is typically the largest potential cycling demographic in a community. As this interested but concerned demographic contains a wide variety of individuals– including more vulnerable user groups such as seniors, children etc., - providing safe and comfortable cycling facilities for them means promoting cycling for all ages and abilities.

Transit

- Improve the reliability and efficiency of transit service.
- Facilitate intermodal travel. Provide convenient, multiple, and direct pedestrian access points to and from the bus stops.
- Create an exceptional customer service experience for transit passengers. This includes developing liveable communities and supportive cycling and pedestrian infrastructure around transit centres.

4.4.2 OPTION COMPARISON

Based on the guiding principle above, the evaluation of all options was carried out by finding merits and demerits in each criterion as discussed in the previous sections. Each option was compared with the base scenario to determine the qualitative improvements provided for each criterion. **Table 4-1** summarizes the results of the evaluation.

Table 4-1: Option Comparison

	Future Base	Option 1	Option 2	Option 3
Overall Connectivity / Network Resilience	<ul style="list-style-type: none"> Lack of network connectivity and resilience is a significant issue Limited ability to efficiently distribute traffic to reduce delays Limited connectivity and capacity to reroute traffic and emergency services during road network incidents 	<ul style="list-style-type: none"> Lack of network connectivity and resilience is a significant issue. Limited ability to efficiently distribute traffic to reduce delays Limited connectivity and capacity to reroute traffic and emergency services during road network incidents Improved east-west connectivity. 	<ul style="list-style-type: none"> Additional north-south connection improves network connectivity and resilience for all mode. Additional connectivity to emergency services provides secondary routes in case of incident or emergency. Traffic able to redistribute to make most effective use of network. Improved east-west connectivity. 	<ul style="list-style-type: none"> Third north-south connection provides benefits to regional traffic. Additional north-south connection improves network connectivity and resilience for all modes. Additional connectivity to file hall provides secondary routes in case of incident or emergency. Traffic able to redistribute to make most effective use of network. Improved east-west connectivity.
Driving and Goods Movement	<ul style="list-style-type: none"> Substantial delay at key intersections and movements. Imbalanced traffic volumes between arterial roads. 	<ul style="list-style-type: none"> Intersection improvements and local connections address some delay and circulation issues. Significant traffic imbalances remain. Significant delays remain. 	<ul style="list-style-type: none"> Delays reduced significantly and most fall within acceptable thresholds. Traffic volumes are more balanced on major arterials. Improved goods movement options & efficiency. Reduced traffic volume on Riverside Dr. 	<ul style="list-style-type: none"> Similar to Option 2.
Walking	<ul style="list-style-type: none"> Lack of local connectivity. Limited regional connectivity. Vehicle volumes in the Village Centre diminish walkability. 	<ul style="list-style-type: none"> Good local connectivity. Good regional connectivity. Vehicle volumes in the Village Centre diminish walkability. 	<ul style="list-style-type: none"> Good local connectivity. Good regional connectivity. Reduced vehicle volume through the Village Centre. 	<ul style="list-style-type: none"> Similar to Option 2
Cycling	<ul style="list-style-type: none"> Lack of local connectivity. Limited regional connectivity. Vehicle volumes in the Village Centre diminish cycling safety and comfort. 	<ul style="list-style-type: none"> Good local cycling connectivity. Good regional cycling connectivity. Vehicle volumes in the Village Centre diminish cycling safety and comfort. 	<ul style="list-style-type: none"> Good local cycling connectivity. Good regional cycling connectivity. Reduced vehicle volume through the Village Centre. 	<ul style="list-style-type: none"> Similar to Option 2
Transit	<ul style="list-style-type: none"> Dollarton Highway part of FTN and improved transit connectivity. Delays to transit resulting from congestion. 	<ul style="list-style-type: none"> Dollarton Highway part of FTN and improved transit connectivity. Delays to transit due to congestion. Improved transit supportive infrastructure. 	<ul style="list-style-type: none"> Dollarton Highway part of FTN and improved transit connectivity. Reduced delays to transit. Improved transit supportive infrastructure. 	<ul style="list-style-type: none"> Similar to Option 2
			Recommended	

As seen in **Table 4-1**, Option 2 is recommended as preferred option. Although Option 3 provides the same benefit as Option 2, the north-south connection doesn't provide any additional benefits to Maplewood area. Some of the key benefits of Option 2 compared to other options are:

- Provides network redundancy in case of incidents.
- Enhanced regional traffic operation through the provision of a new connection at Berkley Road. This new connection will provide choices to regional traffic. Along with the improvements at the Lower Lynn Interchanges, a north-south connection provides a choice to regional travellers to connect to the Ironworkers Memorial Bridge, to Highway 1 westbound, or to other destinations on the North Shore.
- The Berkley Road connection, will also deter commuter traffic from travelling through the Maplewood Village or through other areas to shortcut during times of congestion. This reduces the total traffic volumes in the village core and removes any requirement for wider roadways and intersections within Maplewood Village. This, in turn, benefits other modes by reducing pedestrian and cyclist conflicts. Transit buses will also benefit from reduced delays at these locations.
- The reduced delays at major access intersections and increased network redundancy also improves the ability to egress in emergency situations and ensures access to emergency services.

5. RECOMMENDED NETWORK

The Maplewood neighbourhood will be served by a multimodal transportation network, which will be constructed over time in conjunction with changes in land development. Safe and efficient connections for walking and cycling will contribute to neighbourhood livability and vibrancy and encourage residents, employees, and visitors of all ages to choose active modes of transportation for short trips. Convenient, accessible, and frequent transit service to connect destinations within Maplewood and between Maplewood and other communities will support mode choice, reduce vehicle trips, and improve the accessibility of the neighbourhood for all people.

The recommended network was developed following the results of the option evaluation and with input from the development of the Implementation Plan, as well as parallel work to determine local design opportunities and constraints. As noted in the previous section, Option 2, was brought forward for additional development and analysis. Option 2 included a suite of improvements originally identified in the 2013 Transportation Study, as well as the proposed connection between Mount Seymour Parkway and Dollarton Highway at Berkley Road. The recommended network identifies specific facilities for each mode of transportation. These facilities have been chosen because they work towards achieving the overall goals identified for Maplewood Village and the Innovation District. They provide connections that are appropriate for the planned land use and intent for each roadway corridor, and are consistent with the findings of the technical work. The proposed intersection configurations were analysed based on the expected traffic volumes, neighbourhood design guidelines, and transportation design objectives and constraints. This resulted in renewed recommendations for intersection configurations throughout the study area.

The final recommended multimodal transportation network for Maplewood is shown in **Figure 5-1**. This recommended network accommodates the expected growth in Maplewood area supporting the planned land uses while providing mobility for all modes. It also supports the District's broader goals for the Maplewood Area. The proposed network includes a number of new connections, as described below:

- **Berkley Road** – a new north-south roadway connecting Mount Seymour Parkway and Dollarton Highway intended to provide an efficient connection for traffic, as well as AAA cycling facilities, sidewalks, and to be a future transit connection. Because through movement are prioritized on Berkley Road, this report recommends a limited number of intersections and no driveways be permitted onto Berkley Road.
- **Road A** – a new connection between Dollarton Highway and Berkley Road and to provide access to the proposed development. It is intended to have a protected bicycle lane and sidewalks to provide access to developments within the Innovation District.
- **Road B** – a new roadway connecting Road A to the developments in the east part of the Innovation District. This roadway is a neighbourhood bikeway with sidewalks on both sides.

- **Spicer Road** – this new connection could be added in the long term with redevelopment or following changes to local rail infrastructure. It is planned to have sidewalk on the north side and an urban trail on the south side.
- **Seymour River Place Extension** – the extension of Seymour River Place will connect Front Street to Old Dollarton Road. It is planned to be a shared street with access for all modes. Traffic volumes on this street should be slow moving and yield to pedestrians. Traffic movements at the intersection with Old Dollarton Road will be limited to right-in / right-out to reduce conflicts at the off-set intersection with the existing Seymour River Place.
- **Munster Avenue Connection** – this new roadway will connect the existing Munster Avenue to Riverside Drive at a right-in / right-out intersection.
- **New Laneways** – the recommended plan includes a number of new laneways to provide access to existing and new developments. A new lane connecting Seymour River Place to Riverside Drive along the Windridge Drive alignment will provide a one-way exit to improve local circulation. Laneways north and south of Old Dollarton Road will provide access to loading and parking for new developments in order to improve the function and vibrancy of Old Dollarton Road.

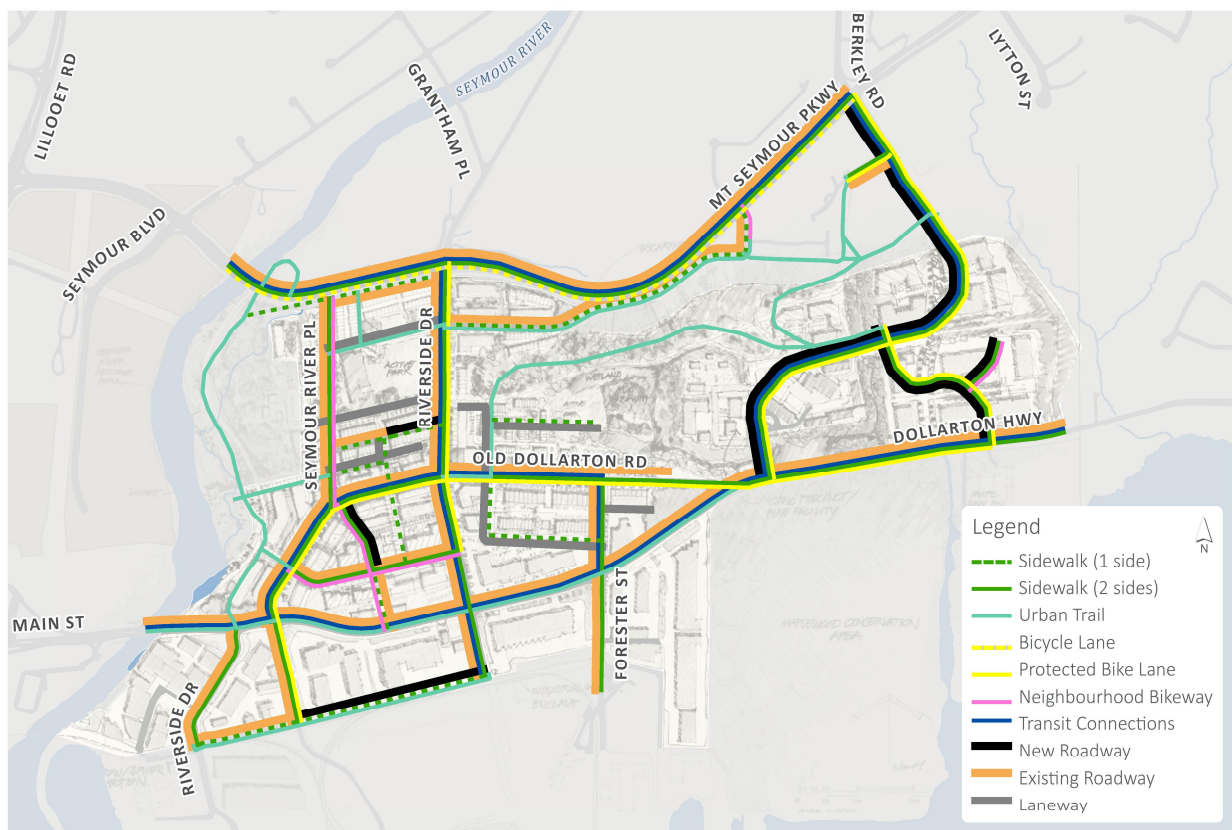


Figure 5-1: Recommended Transportation Network

More detailed descriptions of the form and function of the recommended network for each mode of transportation is provided in the sections below. A summary of the purpose and priorities of the recommended transportation network, including recommended pedestrian, cycling, and transit facilities is also summarized in a table format in **Appendix E**.

5.1 RECOMMENDED WALKING NETWORK

The recommended walking network combined urban trails and sidewalks to connect key destinations, to create a walkable, accessible community, and to support the vibrancy and livability of the neighbourhood. Maplewood will maintain its connection to nature with urban trails that transition from key destinations through both active and natural parks, providing a conduit for both travel and recreational activities. The Spirit Trail will extend along Windridge Drive to complete the connection from east of the Seymour River to Deep Cove. Wide sidewalks in the Village core will allow for an active street and support street-facing retail businesses and the artisan industrial area. Special street treatments for key streets in the Village Centre will create a shared sense of place and support economic activity and walking as a mode of transportation.

Key elements of the recommended walking network include:

- Eliminating gaps in the sidewalk network by providing sidewalks on both sides of most roadways, including along Riverside Drive and Old Dollarton Road.
- New pedestrian connections from Seymour River to Riverside Drive via Windridge Drive and Munster Avenue, Windridge Drive will provide shorter and more direct routes to transit stops and other destinations. A new half-signal crossing of Riverside Drive at Windridge Drive will facilitate safe crossing.
- The extension of Seymour River Place to Front Street is envisioned as a shared space and will provide a lively urban environment that can be closed for festivals and other pedestrian-focused events. This shared street will have designated space for pedestrians in addition to its role as a shared space.
- Changes to Dollarton Highway between Old Dollarton Road (east) and Road A will include sidewalks on both sides of the road that are separate from cycling facilities to improve the functionality of the roadway for both users.
- Old Dollarton Road east of Riverside Drive will be a High Street with dedicated sidewalks, but it will also be at the same grade across the roadway to allow for integration of users across the space.
- The Spirit Trail will extend from the Seymour River Crossing to Seymour River Place and to Windridge Drive to provide a continuous connection to Deep Cove.
- A connection between Riverside Drive north and Riverside Drive south along the Spicer alignment will include an urban trail on the south side and a sidewalk on the north side. This

recommendation is expected to be developed over the long term and may connect to a future crossing of the Seymour River.

- The off-street pathway east of Riverside Drive will connect the Village Centre directly to the Innovation District and provides a better connection to the community and recreational facilities east of Berkley Road.
- Wherever possible, the sidewalk will be separated from the roadway by boulevards and / or parking pockets to improve safety and comfort for pedestrians.
- Midblock connections provided by pedestrian crosswalks to facilitate efficient travel and shorten walking distances, including along lanes and between developments.

5.2 RECOMMENDED CYCLING NETWORK

The recommended cycling network within Maplewood will make travel by bicycle accessible for users of all ages and abilities. The planned network focuses on protected bicycle lanes to link key destinations along busier roads, supported by a network of urban trails and neighbourhood bikeways along lower volume roadways. This will support shorter distance trips within Maplewood, and especially between the Innovation District and the Village Centre. Old Dollarton Road is proposed as a strong east-west connection and will connect with improved regional cycling facilities along Dollarton Highway at Berkley Road. The Spirit Trail and other urban trails will provide parallel routes to facilitate cycling off-road in the natural environment.

Key elements of the recommended cycling network include:

- Multiple east-west connections of different types to suit cyclists of all ages and abilities through different trip types connecting to a range of destinations. This will include:
 - existing bicycle lanes on Mount Seymour Parkway.
 - existing shared pedestrian / cycling trails on Dollarton Highway. East of the new Berkley Road, separate walking and cycling facilities are expected.
 - new protected bicycle lanes on Old Dollarton Road.
 - extension of the Spirit Trail along Windridge Drive, including a half signal to facilitate safe crossing of Riverside Drive.
 - new urban trail from the Village Centre at Riverside Drive and Old Dollarton Road to the Innovation District.
 - long-term urban trail connection along the Spicer Road alignment, including a potential future crossing of the Seymour River.

- New north-south connections, including protected bicycle lanes from Mount Seymour Parkway to the Village Centre along Riverside Drive and protected bicycle lanes from Mount Seymour Parkway to Dollarton Highway along Berkley Road.
 - The Spirit Trail will extend from the Seymour River Crossing to Seymour River Place and to Windridge Drive to provide a continuous connection to Deep Cove. A new half-signal crossing of Riverside Drive at Windridge Drive will facilitate safe crossing.
-

5.3 RECOMMENDED TRANSIT NETWORK

The District is working with TransLink to provide frequent, and eventually, rapid transit service to Maplewood. The transportation network and public realm must be designed to accommodate high quality, high frequency transit. The recommended pedestrian and road infrastructure in the Maplewood Area supports transit by facilitating frequent and future rapid transit in the village core. Old Dollarton Road and Berkley Road will accommodate TransLink's requirements for transit service and plan for a high-quality stop that can accommodate an articulated bus with near-by services.

5.4 RECOMMENDED ROAD NETWORK

The vehicle network in and through Maplewood prioritizes efficient east-west through movements, discourages short-cutting, and provides appropriate local access for private vehicles and the movement of goods and services. Recommended improvements balance mobility needs with the goals of a walkable, livable community, as well as design opportunities and constraints, including property limitations. The recommended network is illustrated in **Figure 5-2**.

The recommended network supports improved efficiency and greater balance of traffic between Mount Seymour Parkway and Dollarton Highway and greater overall network resiliency. The addition of the Berkley Road extension allows regional traffic to find the most efficient route through this area and also provides network redundancy in case of incidents or emergencies. This new link also reduces the traffic demand on Riverside Drive, focusing regional trips on Berkley Road and reducing congestion through Maplewood Village.

The peak hour, peak direction volume on Mount Seymour Parkway is expected to be approximately 1,800 vehicles per hour in 2031. This is within capacity of a four-lane road where urban intersections have sufficient accommodation for turning movements. Proposed improvements along Mount Seymour Parkway include longer left turn storage lanes to allow for longer queues to enter Maplewood, reducing conflict with through movements, and dual westbound left turn lanes from Mount Seymour Parkway to Berkley Road, which will support the efficient redistribution of traffic and provide access to the Innovation District. Dollarton Highway is expected to accommodate 2,000 vehicles per hour in the peak hour, peak direction, which is within the expected capacity of this four-

lane road. The recommended network includes expansion of Dollarton Highway to four lanes to the intersection with Road A, which will facilitate efficient regional travel.

As noted above, one of the key features of the recommended network is its approach to prioritizing east-west through movements, while providing appropriate local access and achieving a walkable, livable community. As part of this approach, the recommended network does not include dual westbound left turn lanes at the intersection of Riverside Drive and Mount Seymour Parkway, which had been recommended in the 2013 Transportation Study and carried into the options analysis as part of this study. Instead, dual westbound left turn lanes are provided at Berkley Road and Mount Seymour Parkway and dual southbound right turn lanes are provided at Berkley Road and Dollarton Highway. This provides for efficient regional movement of people and goods and deters regional traffic from Maplewood Village. This approach also reduces crossing distances and property impacts along Riverside Drive and allows for the prioritization of east-west traffic on the Mount Seymour Parkway corridor. The dual southbound right turn lanes at Berkley Road and Dollarton Highway will also limit queue lengths in front of the Fire Hall, reducing the risk that the Fire Hall driveway is blocked during times of congestion.

Within the community, a number of proposed changes are expected to increase efficiency, limit queues, and make the most effective use of public space. Riverside Drive will be converted to a three-lane cross-section from Windridge Drive to Front Street, which will allow for left turn lane where appropriate and maintain two continuous through lanes northbound and southbound. The conversion of Old Dollarton Road/Seymour River Place intersection into a four-way stop controlled intersection will provide better access to vehicles on Seymour River Place and reduce conflict and delay, while augmenting the walking and biking friendly environment. Due to the alignment of Seymour River Place through this intersection, the south approach is also proposed to be limited to right-in/right-out operation only. It is noted that the four-way stop configuration could cause some delay to the planned B-line operation along this corridor (up to 21 seconds during the PM peak), however, the two-way stop controlled configuration creates long delays to the southbound movement (79 seconds, LOS F during the PM peak).

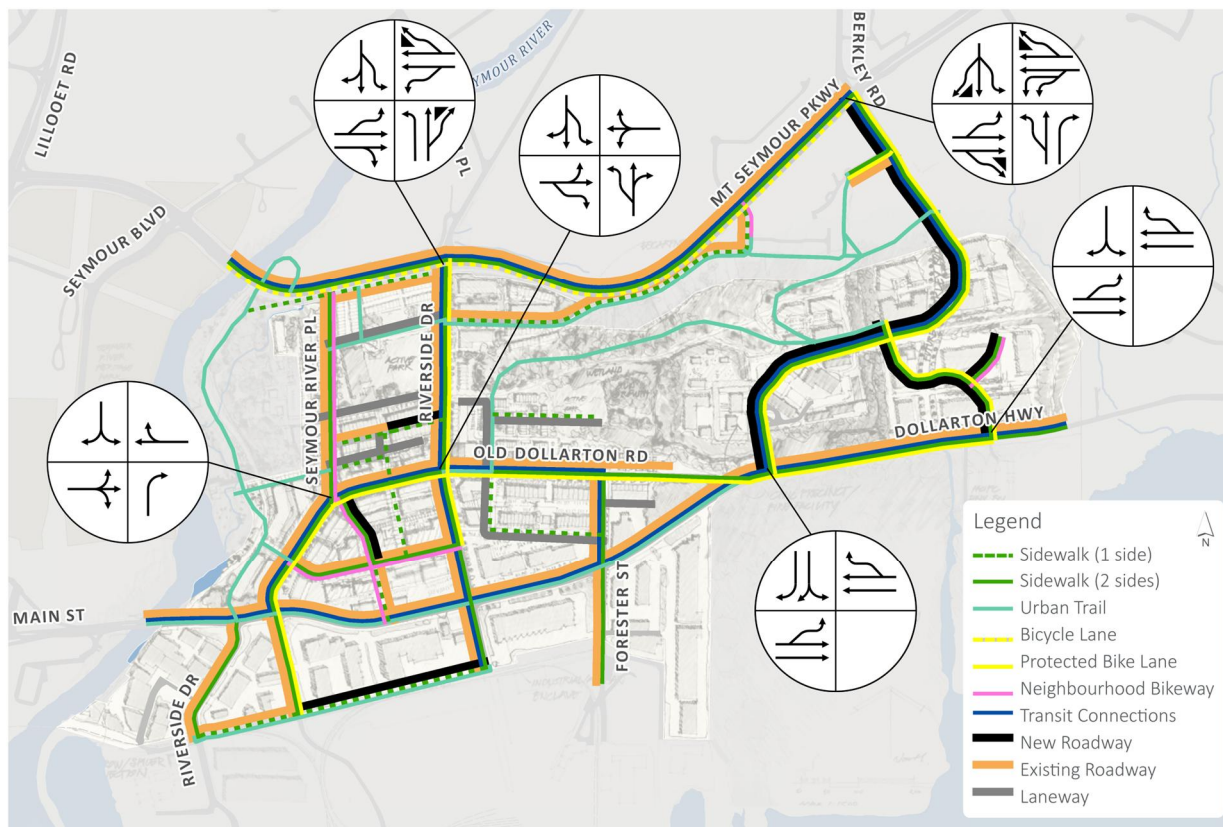


Figure 5-2: Recommended Transportation Network with Improvements

The results of the analysis traffic operations on the recommended network in the forecast 2031 traffic condition for the morning and afternoon peak hours are shown in **Figure 5-3**. Overall, all of the signalized intersections and most of the stop controlled intersections in the study area are expected to operate with LOS of 'D' or better in both morning and afternoon peak periods. The results of the analysis show that growth in Maplewood can be accommodated with key improvements to the transportation network, as described above.

The intersection of Browning Place & Mount Seymour Parkway is expected to operate at LOS 'F' due to the effect of high east-west through volumes on stop-controlled operation for northbound and southbound traffic. The residents trying to make a left turn from Browning Place onto Mount Seymour Parkway are expected to experience significant delays during both peak periods. These movements experience LOS 'F' in existing conditions are are expected to continue to be challenging independent of the development of Maplewood. The recommended network mitigates some potential impacts of background traffic growth at this location because it results in the lowest eastbound and westbound volumes when compared to the other options that do not include the Berkley Road extension.

The northbound left turn movement at Mount Seymour Parkway and Riverside Drive is expected to experience LOS 'F' in the morning peak hour. This results from the prioritization of eastbound and westbound through movements within the recommended approach to signal phasing and timing. The three lane cross-section of Riverside Drive is expected to provide sufficient space for queuing for

Maplewood Village Transportation Study Update

northbound traffic making this movement and the impacts of this delay are limited to fewer than 170 vehicles in the morning peak hour.

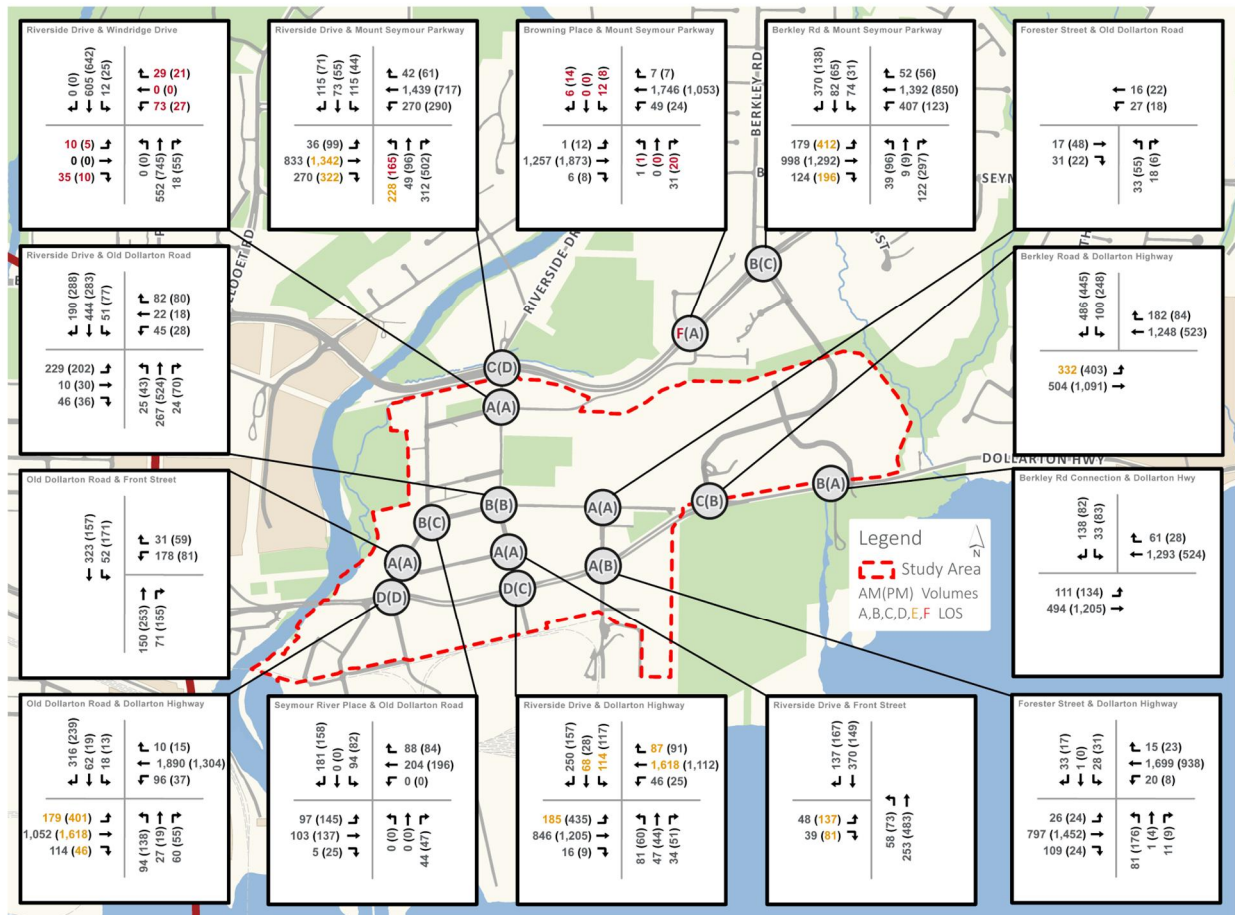


Figure 5-3: Future Traffic Volumes and Level of Service with Recommended Transportation Network

The analysis was based on conservative (high) traffic volume forecasts, which did not allow a substantial decrease of the auto mode share. Investments in walking, cycling, and transit can be expected to reduce the percentage of trips made driving alone and reduce traffic volumes, which, in turn could be expected to further reduce delay at intersections throughout the study area.

6. SUMMARY

The recommended network achieves the mobility goals for Maplewood identified in the Implementation Plan and the Official Community Plan. The analysis summarized in this report shows that the proposed changes in land use can be accommodated while also creating a transportation network that provides a number of key benefits. Some of these benefits are:

- A walkable neighbourhood with improved pedestrian connectivity and urban streetscape that will increase transportation choice, facilitate use of public space, and increase the livability of the neighbourhood. An accessible, pleasant, comfortable, and safe pedestrian environment will support access to transit and reduce reliance on private vehicles for trips within Maplewood Village and to the surrounding area.
- A network of urban trails, including an off-street path between Village Centre and the Innovation District will provide important connections for residents to experience nature and enjoy their community, as well as to use active modes for both local and regional trips. The extension of the Spirit Trail along Windridge Drive will provide more options to connect to major regional walking and cycling facilities. This trail will also encourage the cyclists to travel east-west that aren't comfortable riding on the on-street bike lanes along Mount Seymour Parkway.
- Improved bicycle facilities make cycling an attractive option for all ages and abilities. Improved east-west as well as north-south connections will encourage people from within and outside of Maplewood to consider cycling.
- A new north-south roadway with efficient connections to Mount Seymour Parkway and Dollarton Highway will make regional travel more efficient and reliable, improve connectivity to the proposed Fire Hall and to the Innovation District, and will reduce traffic volumes and congestion in Maplewood Village.

The development of the proposed Maplewood Area is an opportunity to revisit the transportation infrastructure within and surrounding Maplewood to ensure it supports the overall transportation goals for the District, as well as the local goals and objectives set out for Maplewood. With the recommended network in place, the proposed land use can be accommodated within the study area with an increase in overall multi-modal mobility and reliability.

Appendix A: EXISTING ROAD NETWORK CHARACTERISTICS

Street	Class	Number of Lanes	Existing Transit Service	Existing Bicycle Facilities	Existing Pedestrian Facilities	On Street Parking
Mount Seymour Parkway	Major Arterial	4 lanes - two per direction +left and right turn lanes from Mt Seymour Parkway Bridge to Browning Place	Route 211 Route 214	Eastbound and westbound painted bike lanes from Riverside Drive to east end of Study Area.	Sidewalks on north and south sides throughout Study Area.	No
Dollarton Highway	Major Arterial	4 lanes - two per direction with left turn lanes from Riverside Drive to Chung Dahm Immersion school	Route 212	Off street adjacent paths on north and south side of Dollarton Hwy for eastbound and westbound cyclists, from Riverside Drive to Chung Dahm Immersion School	Sidewalk adjacent to street on north and south sides from Riverside Drive to Chung Dahm Immersion school	No
Riverside Drive	Major Arterial	2 - 4 lanes. 2 lanes from Mount Seymour Parkway to Old Dollarton Road - one per direction. 4 lanes from Old Dollarton Road to Dollarton Hwy - 2 lanes per direction plus right turn lanes	Route 211 Route 214	None	Sidewalks on east and west sides from Old Dollarton to Dollarton Hwy	No
Old Dollarton Road	Local ³	2 lanes - one per direction along the entirety of Old Dollarton Road, with left turn at Riverside Drive and right turn at Dollarton Hwy	Route C15	None	Sidewalk on north side and Sidewalk on portions of south side from Dollarton Hwy to Riverside Drive	On street parking on north side from Front Street to Seymour Park Place, then on north and south sides from Seymour Park Place to

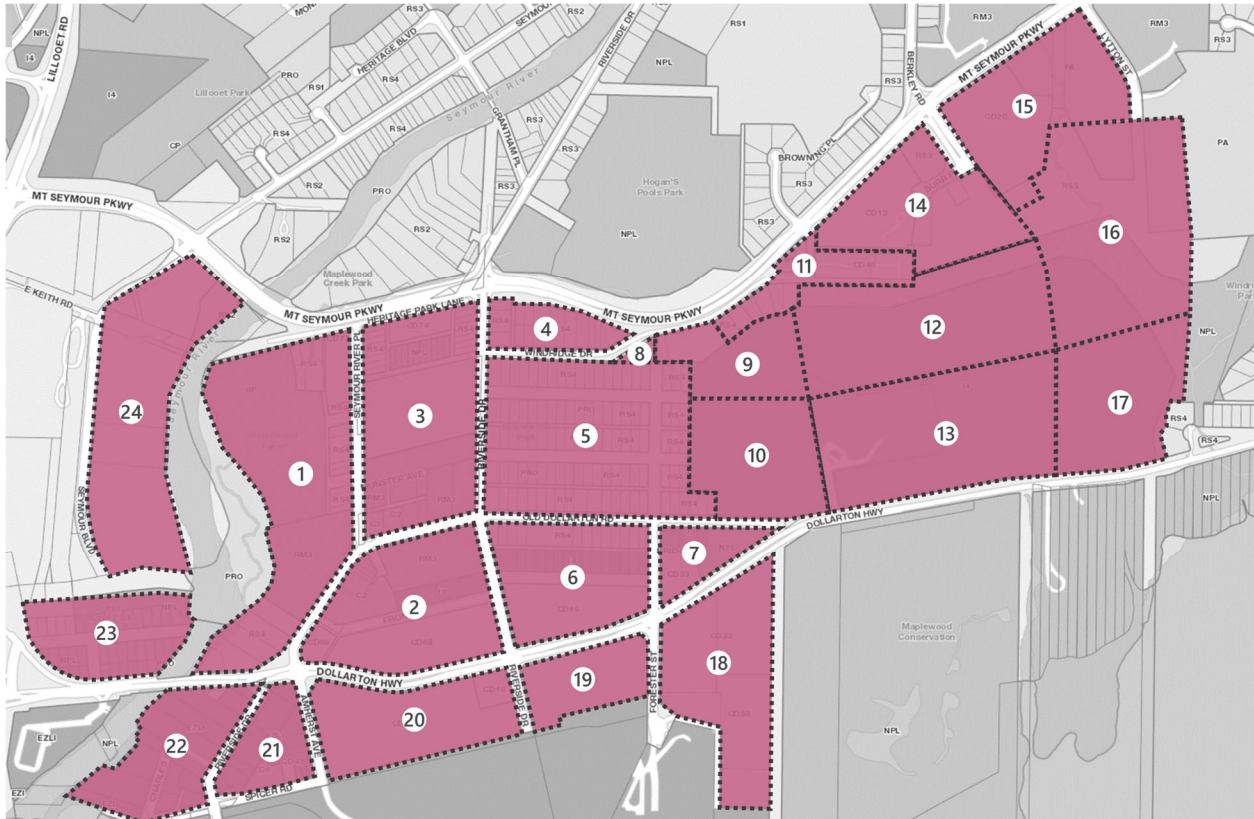
³ Old Dollarton Road is a bus route and should be considered for reclassification as a collector road in future updates of the District's Development Services Bylaw.

Maplewood Village Transportation Study Update
Appendix A

Street	Class	Number of Lanes	Existing Transit Service	Existing Bicycle Facilities	Existing Pedestrian Facilities	On Street Parking
						the east end of Old Dollarton Road.
Front Street	Local	2 lanes - one per direction along all of Front Street	None	None	Sidewalks along north and south side throughout.	On street parking on north and south sides throughout.
Windridge Drive	Local	2 lanes - one per direction throughout.	None	None	Sidewalk on north side of road from Riverside Drive to Browning Place then on east side of road along Browning Place from Windridge Drive to Mount Seymour Parkway	On street parking on north and south sides of Windridge Drive in residential areas only
Seymour River Place	Collector	2 lanes - one per direction throughout	None	None	Sidewalk on east side along all of Seymour River Place	On street parking on east and west sides along all of Seymour River Place
Forester Street	Local	2 lanes - one per direction throughout	None	None	Sidewalk on east and west sides throughout	On street parking on east and west sides throughout

Appendix B: LAND USE DETAILS

The study area was divide into 24 transportation zones. Each of these zones is expected to interact with the road network in a different way based on their location. The land use details for each zone are summarized in subsequent pages within this Appendix.



Transportation Zones Map

Maplewood Village Transportation Study Update
Appendix B

Existing Land Use by Zone

	Single family (dwelling units)	Townhouse (dwelling units)	Rental Apartment (dwelling units)	Commercial (sq. ft.)	Light Industrial (sq. ft.)	Institutional (sq. ft.)
Zone 1	18	126	0	0	0	4,797
Zone 2	0	97	80	22,556	0	0
Zone 3	16	132	0	3,337	0	34,596
Zone 4	16	0	0	0	0	0
Zone 5	18	0	0	0	0	0
Zone 6	5	0	0	0	81,625	0
Zone 7	0	0	0	0	33,955	0
Zone 8	1	0	0	0	0	0
Zone 9	0	0	0	0	0	0
Zone 10	0	0	0	0	0	0
Zone 11	7	55	0	0	0	0
Zone 12	0	0	0	0	0	0
Zone 13	0	0	0	0	0	103,820
Zone 14	0	0	189	0	0	3880
Zone 15	0	0	0	0	0	202,599
Zone 16	0	0	0	0	0	0
Zone 17	0	0	0	0	0	0
Zone 18	0	0	0	0	0	0
Zone 19	0	0	0	0	0	0
Zone 20	0	0	0	0	0	0
Zone 21	0	0	0	7,828	98,193	0
Zone 22	0	0	0	0	253,625	0
Zone 23	0	0	0	0	0	0
Zone 24	0	0	0	0	0	0
TOTAL	74	410	269	33,721	467,398	349,692

Maplewood Village Transportation Study Update
Appendix B

Future Land Use by Zone

	Single family (dwelling units)	Townhouse (dwelling units)	Rental Apartment (dwelling units)	Commercial (sq. ft.)	Light Industrial (sq. ft.)	Institutional (sq. ft.)
Zone 1	0	252	355	0	0	10,000
Zone 2	0	0	777	27,346	0	0
Zone 3	0	238	235	13,281	0	34,596
Zone 4	0	207	0	0	0	0
Zone 5	0	300	300	6,262	0	10,000
Zone 6	0	0	276	0	118,150	0
Zone 7	0	0	0	0	33,955	0
Zone 8	0	0	0	0	0	0
Zone 9	0	0	0	0	40,000	0
Zone 10	0	0	0	0	0	0
Zone 11	7	55	0	0	0	0
Zone 12	0	0	229	0	163,227	0
Zone 13	0	0	0	5,567	105,768	103,820
Zone 14	0	0	189	0	0	3880
Zone 15	0	0	0	0	0	202,599
Zone 16	0	0	270	0	38,522	0
Zone 17	0	0	0	16,042	304,803	0
Zone 18	0	0	0	0	0	0
Zone 19	0	0	0	0	15,288	0
Zone 20	0	0	0	0	30,300	0
Zone 21	0	0	0	7,828	98,193	0
Zone 22	0	0	0	0	253,625	0
Zone 23	0	0	0	0	0	0
Zone 24	0	0	0	0	0	0
TOTAL	0	997	2,631	76,326	1,201,831	364,895

Maplewood Village Transportation Study Update
Appendix B

Net Gain/Loss in Land Use by Zone

	Single family (dwelling units)	Townhouse (dwelling units)	Rental Apartment (dwelling units)	Commercial (sq. ft.)	Light Industrial (sq. ft.)	Institutional (sq. ft.)
Zone 1	-18	+126	+355	0	0	+5,203
Zone 2	0	-97	+697	+4,790	0	0
Zone 3	-16	+106	+235	+9,944	0	0
Zone 4	-16	+207	0	0	0	0
Zone 5	-18	+300	+300	+6,262	0	+10,000
Zone 6	-5	0	+276	0	+36,525	0
Zone 7	0	0	0	0	0	0
Zone 8	0	0	0	0	0	0
Zone 9	0	0	0	0	+40,000	0
Zone 10	0	0	0	0	0	0
Zone 11	0	0	0	0	0	0
Zone 12	0	0	+229	0	+163,227	0
Zone 13	0	0	0	+5,567	+105,768	0
Zone 14	0	0	0	0	0	0
Zone 15	0	0	0	0	0	0
Zone 16	0	0	+270	0	+38,522	0
Zone 17	0	0	0	+16,042	+304,803	0
Zone 18	0	0	0	0	0	0
Zone 19	0	0	0	0	+15,288	0
Zone 20	0	0	0	0	+30,300	0
Zone 21	0	0	0	0	0	0
Zone 22	0	0	0	0	0	0
Zone 23	0	0	0	0	0	0
Zone 24	0	0	0	0	0	0
TOTAL	-74	642	2,362	42,605	734,433	15,203

Appendix C: TRIP GENERATION AND DISTRIBUTION SUMMARY

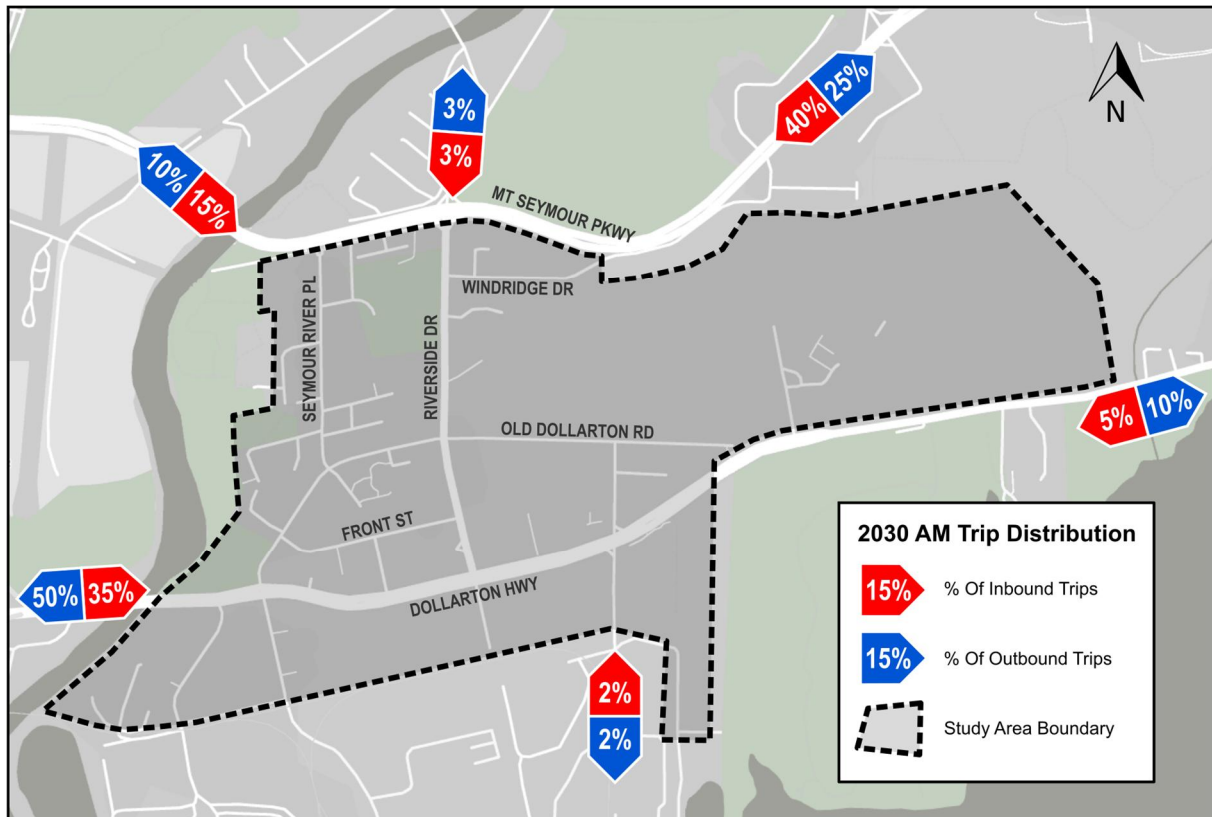
The trips generated based on the changes in land use from each transportation zone are summarized in the table below. The trip distribution and assignment of these trips are discussed in subsequent pages.

Summary of New Vehicle Trips Generated by 2050

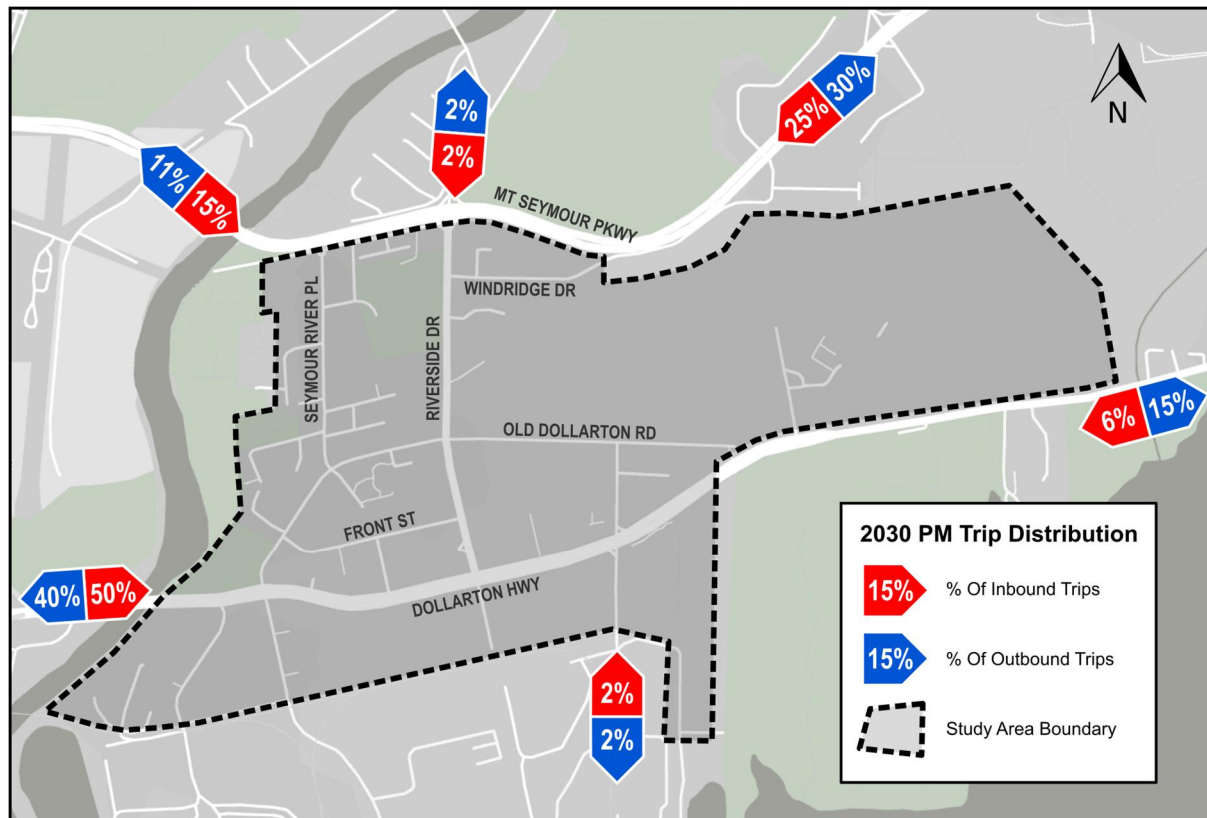
Zone	AM Peak Hour Trips	PM Peak Hour Trips
1	178	211
2	263	365
3	143	169
4	49	53
5	235	306
6	145	171
7	0	0
8	0	-1
9	31	0
10	0	0
11	0	0
12	279	324
13	138	168
14	0	0
15	0	0
16	159	181
17	376	426
18	0	0
19	11	12
20	23	25
21	0	0
22	0	0
23	0	0
24	0	0
Total	2030	2410

TRIP DISTRIBUTION

The distribution for the external trips, which either originate from or destined to developments outside of the Maplewood study area, were based on the District's EMME model. The proposed morning and afternoon traffic distributions are shown in the figures below.



AM Peak Trip Distribution



PM Peak Trip Distribution

TRIP ASSIGNMENT

Base & Option 1 – The site generated traffic volumes from each transportation zones were assigned based on the shortest path to and from each zone to the external destinations. Due to the limitation of alternate routes to the zones, no further refinements were made to the base traffic assignments.

Option 2 – A shift in traffic from Riverside Drive to Berkley Road was expected due to the new Berkley Road connection. Based on the results of EMME model with Berkley Road connection in place and the application of engineering judgment, 50% of the westbound left turn volumes at Riverside Drive/Mount Seymour Parkway intersection, 30% of the eastbound left turn volumes at Old Dollarton Road/Dollarton Highway, and 30% of the eastbound left turn volumes at Riverside Drive/Dollarton Highway were rerouted to Berkley Road intersections. These traffic volumes were estimated to be currently using Riverside Drive as shortcutting route and would utilize the new Berkley Road connection. The site generated traffic volumes from each transportation zone were once again assigned based on the shortest path to and from each zone in the new road network.

Option 3 – The results of the EMME model with Seymour Boulevard connection showed that traffic reassignment to Seymour Boulevard would not affect the study intersections. Trips destined to and originating from the study area were also not expected to utilize this new connection unless the intersections along Dollarton Highway started failing. As such, no changes to the trip assignments were made in Option 3.

Recommended Option – In the recommended option, the eastbound left turn capacity at Riverside Drive/Mount Seymour Parkway is constrained due to the capacity of the single eastbound left turn lane. Due to this capacity constraint, a portion of the eastbound left turn volume destined for the Village Core in the AM peak were assumed to shift to the Berkley Road/Mount Seymour Parkway intersection and then travel on to access Maplewood Village via the intersection of Dollarton Highway and Riverside Drive. For this scenario, 100 vehicles were rerouted from the intersection of Mount Seymour Parkway / Riverside to the intersection of Mount Seymour Parkway / Berkley Road intersection.

Appendix D: SYNCHRO REPORTS

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Existing

Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↗	↖	↗	↖	↗	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	132	559	96	79	1041	5	82	20	45	1	51	427
Future Volume (vph)	132	559	96	79	1041	5	82	20	45	1	51	427
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1601	3323	0	1807	3507	0	0	1691	1408	0	1919	1601
Flt Permitted	0.131			0.378				0.753			0.997	
Satd. Flow (perm)	221	3323	0	719	3507	0	0	1325	1408	0	1915	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			1				112			208
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	719	0	82	1089	0	0	107	47	0	65	534
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	10.0	38.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	14.7%	55.9%		41.2%	41.2%		44.1%	44.1%	44.1%	44.1%	44.1%	44.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	34.3	34.3		26.6	26.6		19.4	19.4		19.4	19.4	
Actuated g/C Ratio	0.56	0.56		0.43	0.43		0.31	0.31		0.31	0.31	
v/c Ratio	0.56	0.39		0.27	0.72		0.26	0.09		0.11	0.83	
Control Delay	19.2	9.1		18.3	21.2		16.7	0.4		14.5	23.5	
Queue Delay	0.7	1.5		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.9	10.6		18.3	21.2		16.7	0.4		14.5	23.5	
LOS	B	B		B	C		B	A		B	C	
Approach Delay		12.2			21.0			11.7			22.5	
Approach LOS		B			C			B			C	
Queue Length 50th (m)	7.6	21.3		6.4	57.0		8.8	0.0		5.1	33.3	
Queue Length 95th (m)	#26.1	38.4		18.0	#102.4		18.8	0.3		10.5	51.9	
Internal Link Dist (m)		45.3			44.7			199.8			74.2	
Turn Bay Length (m)	20.0			75.0				15.0			30.0	
Base Capacity (vph)	258	1864		309	1509		562	662		813	799	
Starvation Cap Reductn	18	912		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.60	0.76		0.27	0.72		0.19	0.07		0.08	0.67	

01-03-2018
NSSynchro 10 Report
Page 3

Lanes, Volumes, Timings

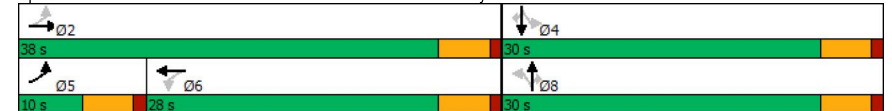
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Existing

Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	68
Actuated Cycle Length:	61.8
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	18.1
Intersection LOS:	B
Intersection Capacity Utilization:	71.2%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway Existing
Timing Plan: AM Peak

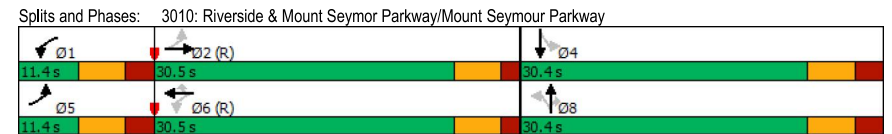
	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖	↖		↖	↖		↖	
Traffic Volume (vph)	32	732	196	435	1383	32	129	21	178	83	56	101
Future Volume (vph)	32	732	196	435	1383	32	129	21	178	83	56	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3464	0	1789	3579	1601	0	1806	1601	0	1746	0
Flt Permitted	0.146			0.127				0.504			0.757	
Satd. Flow (perm)	275	3464	0	239	3579	1601	0	949	1601	0	1344	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53				148			223		57	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			413.3			113.4			172.4	
Travel Time (s)		39.4			31.0			8.5			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	1031	0	483	1537	36	0	187	223	0	300	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8		8	4		
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	
Total Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	
Total Split (%)	15.8%	42.2%		15.8%	42.2%	42.2%	42.0%	42.0%	42.0%	42.0%	42.0%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0		-2.4	-2.4		-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5		4.0	4.0		4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	34.2	26.5		42.6	39.3	37.8		20.3	20.3		20.3	
Actuated g/C Ratio	0.47	0.37		0.59	0.54	0.52		0.28	0.28		0.28	
v/c Ratio	0.12	0.79		1.12	0.79	0.04		0.70	0.37		0.72	
Control Delay	8.7	24.8		106.2	22.3	0.1		36.9	4.5		28.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	8.7	24.8		106.2	22.3	0.1		36.9	4.5		28.1	
LOS	A	C		F	C	A		D	A		C	
Approach Delay		24.2			41.6			19.3			28.1	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	1.8	61.1		~64.3	68.8	0.0		22.3	0.0		29.0	
Queue Length 95th (m)	6.0	83.8		#142.5	#172.7	0.0		33.0	8.4		40.3	
Internal Link Dist (m)		500.9			389.3			89.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0		25.0				
Base Capacity (vph)	292	1303		430	1943	906		346	726		526	
Starvation Cap Reductn	0	0		0	0	0		0	0		0	
Spillback Cap Reductn	0	0		0	0	0		0	0		0	
Storage Cap Reductn	0	0		0	0	0		0	0		0	
Reduced v/c Ratio	0.12	0.79		1.12	0.79	0.04		0.54	0.31		0.57	

01-03-2018
NS

Synchro 10 Report
Page 5

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway Existing
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	72.3
Actuated Cycle Length:	72.3
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.12
Intersection Signal Delay:	33.3
Intersection LOS:	C
Intersection Capacity Utilization:	81.0%
ICU Level of Service:	D
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton Existing
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	117	2	20	0	8	3	14	198	1	3	363	349
Future Volume (vph)	117	2	20	0	8	3	14	198	1	3	363	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	0.0			0.0			0.0			0.0		
Satd. Flow (prot)	0	1795	1601	0	1816	0	1789	1882	0	0	1883	1601
Flt Permitted		0.719					0.476				0.998	
Satd. Flow (perm)	0	1354	1601	0	1816	0	897	1882	0	0	1880	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43		4			1				353
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	170	29	0	15	0	16	221	0	0	402	384
Turn Type	Perm	NA	Perm		NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	49.0%	49.0%	49.0%	49.0%	49.0%		51.0%	51.0%		51.0%	51.0%	51.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Act Effct Green (s)		12.0	12.0		12.0		18.5	18.5		18.5	18.5	
Actuated g/C Ratio		0.31	0.31		0.31		0.48	0.48		0.48	0.48	
v/c Ratio		0.40	0.06		0.03		0.04	0.25		0.45	0.40	
Control Delay		13.9	3.4		8.5		6.8	7.6		9.3	2.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		13.9	3.4		8.5		6.8	7.6		9.3	2.9	
LOS		B	A		A		A	A		A	A	
Approach Delay		12.4			8.5			7.5			6.2	
Approach LOS		B			A			A			A	
Queue Length 50th (m)		7.8	0.0		0.5		0.5	7.2		14.8	0.9	
Queue Length 95th (m)		15.5	1.6		2.4		2.9	20.0		37.8	11.9	
Internal Link Dist (m)		176.9			263.8			113.8		240.2		
Turn Bay Length (m)			45.0								15.0	
Base Capacity (vph)		746	901		1002		517	1086		1085	1073	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.23	0.03		0.01		0.03	0.20		0.37	0.36	

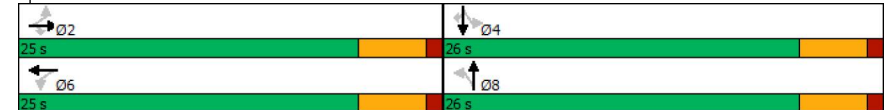
01-03-2018
NS

Synchro 10 Report
Page 7

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton Existing
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	51
Actuated Cycle Length:	38.7
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.45
Intersection Signal Delay:	7.5
Intersection Capacity Utilization	50.8%
Intersection LOS:	A
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 3030: Riverside & Old Dollarton



01-03-2018
NS

Synchro 10 Report
Page 8

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Existing
Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↗	↖	↗	↖	↗	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	165	357	14	36	805	38	69	34	24	58	44	207
Future Volume (vph)	165	357	14	36	805	38	69	34	24	58	44	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1706	3365	0	1825	3436	0	0	1691	1396	0	1653	1570
Flt Permitted	0.172			0.513				0.731			0.766	
Satd. Flow (perm)	309	3365	0	986	3436	0	0	1277	1396	0	1303	1570
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		8			8				119			230
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	407	0	40	936	0	0	129	30	0	113	230
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	10.0	35.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	15.6%	54.7%		39.1%	39.1%		45.3%	45.3%	45.3%	45.3%	45.3%	45.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Act Effct Green (s)	31.1	31.1		21.1	21.1		11.2	11.2		11.2	11.2	
Actuated g/C Ratio	0.62	0.62		0.42	0.42		0.22	0.22		0.22	0.22	
v/c Ratio	0.51	0.20		0.10	0.65		0.46	0.07		0.39	0.44	
Control Delay	10.2	4.8		10.8	14.7		22.3	0.4		20.7	5.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.2	4.8		10.8	14.7		22.3	0.4		20.7	5.7	
LOS	B	A		B	B		C	A		C	A	
Approach Delay		6.5			14.5			18.1			10.6	
Approach LOS		A			B			B			B	
Queue Length 50th (m)	5.5	6.4		2.0	32.4		10.0	0.0		8.6	0.0	
Queue Length 95th (m)	16.0	14.3		7.4	56.8		19.0	0.0		19.5	12.4	
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	357	2082		412	1443		636	755		649	897	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.51	0.20		0.10	0.65		0.20	0.04		0.17	0.26	

01-03-2018
NS

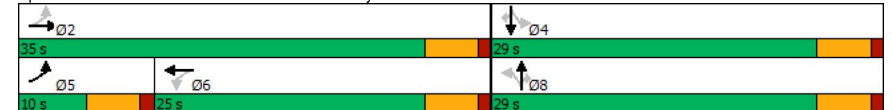
Synchro 10 Report
Page 9

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Existing
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	64
Actuated Cycle Length:	50.3
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	11.9
Intersection LOS:	B
Intersection Capacity Utilization:	54.9%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 3050: Riverside & Dollarton Hwy



01-03-2018
NS

Synchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Existing

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	11	283	96	17	864	5	66	0	4	1	1	4
Future Volume (vph)	11	283	96	17	864	5	66	0	4	1	1	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3443	0	1789	3575	0	0	1786	0	0	1838	1601
Flt Permitted	0.305			0.513				0.735			0.817	
Satd. Flow (perm)	574	3443	0	966	3575	0	0	1375	0	0	1539	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		101			1			36				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	407	0	18	905	0	0	75	0	0	4	7
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	33.4	33.4		33.4	33.4			8.5			8.5	8.5
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.19			0.19	0.19
v/c Ratio	0.03	0.15		0.02	0.33			0.25			0.01	0.02
Control Delay	3.8	2.5		3.7	3.8			11.4			13.5	0.5
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	3.8	2.5		3.7	3.8			11.4			13.5	0.5
LOS	A	A		A	A			B			B	A
Approach Delay		2.5			3.8			11.4			5.2	
Approach LOS		A			A			B			A	
Queue Length 50th (m)	0.3	3.7		0.4	13.5			2.4			0.3	0.0
Queue Length 95th (m)	1.6	8.5		2.0	24.7			9.8			1.2	0.0
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	446	2701		751	2782			802			881	931
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.03	0.15		0.02	0.33			0.09			0.00	0.01

01-03-2018
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings

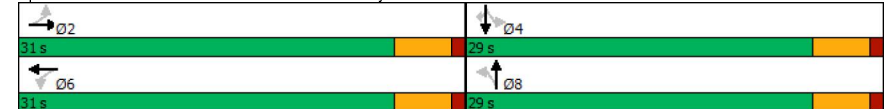
4050: Forester St & Dollarton Hwy

Existing

Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 43.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay: 3.8	Intersection LOS: A
Intersection Capacity Utilization 45.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4050: Forester St & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 12

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Existing
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱	↰	↰	↰↱	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	157	823	34	6	1476	46	21	8	19	68	11	382
Future Volume (vph)	157	823	34	6	1476	46	21	8	19	68	11	382
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.110			0.282			0.743			0.749		
Satd. Flow (perm)	207	3579	1601	531	3579	1601	1399	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			60			140			139			429
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		118.7			116.0			100.1			121.4	
Travel Time (s)		7.1			7.0			7.2			8.7	
Peak Hour Factor	0.69	0.81	0.57	0.50	0.92	0.66	0.46	0.63	0.25	0.50	0.50	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	228	1016	60	12	1604	70	46	13	76	136	22	429
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	9.1	39.7	39.7	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	13.3%	58.0%	58.0%	44.7%	44.7%	44.7%	42.0%	42.0%	42.0%	42.0%	42.0%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0		4.0		4.0		4.0		4.0		4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	49.3	50.1	50.1	32.9	32.9	32.9	13.6	13.6	13.6	13.6	13.6	68.4
Actuated g/C Ratio	0.72	0.73	0.73	0.48	0.48	0.48	0.20	0.20	0.20	0.20	0.20	1.00
v/c Ratio	0.52	0.39	0.05	0.05	0.93	0.08	0.16	0.03	0.18	0.48	0.06	0.27
Control Delay	14.0	5.5	1.7	13.7	32.8	0.5	22.3	19.9	1.7	29.2	20.4	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	5.5	1.7	13.7	32.8	0.5	22.3	19.9	1.7	29.2	20.4	0.4
LOS	B	A	A	B	C	A	C	B	A	C	C	A
Approach Delay		6.8			31.4			10.5			7.8	
Approach LOS		A			C			B			A	
Queue Length 50th (m)	10.3	24.6	0.0	0.9	~118.8	0.0	4.9	1.4	0.0	15.5	2.3	0.0
Queue Length 95th (m)	20.4	38.1	1.2	2.2	#168.7	0.0	5.6	3.3	0.0	14.1	3.7	0.0
Internal Link Dist (m)		94.7			92.0			76.1			97.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	436	2621	1188	255	1719	842	505	679	666	509	679	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.39	0.05	0.05	0.93	0.08	0.09	0.02	0.11	0.27	0.03	0.27

01-03-2018
NS

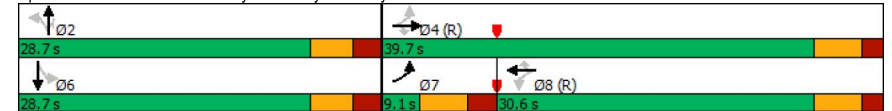
Synchro 10 Report
Page 13

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Existing
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	68.4
Actuated Cycle Length:	68.4
Offset:	0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.93
Intersection Signal Delay:	18.3
Intersection LOS:	B
Intersection Capacity Utilization:	69.9%
ICU Level of Service:	C
Analysis Period (min):	15
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



















01-03-2018
NS

Synchro 10 Report
Page 14










HCM Unsignalized Intersection Capacity Analysis 2030: Semour River PI & Old Dollarton

Existing
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	60	1	3	341	67	2	1	5	45	0	120
Future Volume (Veh/h)	70	60	1	3	341	67	2	1	5	45	0	120
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	88	75	1	3	367	72	3	1	6	56	0	150
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage (veh)												
Upstream signal (m)	235				201							
pX, platoon unblocked												
vC, conflicting volume	439			76			810	696	76	667	661	403
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	439			76			810	696	76	667	661	403
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			100			99	100	99	84	100	77
cM capacity (veh/h)	1095			1348			216	337	991	346	353	645
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	164	442	10	206								
Volume Left	88	3	3	56								
Volume Right	1	72	6	150								
cSH	1095	1348	437	522								
Volume to Capacity	0.08	0.00	0.02	0.39								
Queue Length 95th (m)	2.0	0.1	0.5	14.2								
Control Delay (s)	4.9	0.1	13.4	16.3								
Lane LOS	A	A	B	C								
Approach Delay (s)	4.9	0.1	13.4	16.3								
Approach LOS			B	C								
Intersection Summary												
Average Delay	5.3											
Intersection Capacity Utilization	52.9%				ICU Level of Service				A			
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 2040: Old Dollarton & Front St

Existing
Timing Plan: AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	22	110	47	46	417
Future Volume (Veh/h)	0	22	110	47	46	417
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	24	122	52	51	463
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (m)			98	338		
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	713	148			174	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	709	141			167	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	97			96	
cM capacity (veh/h)	384	902			1403	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	24	174	514			
Volume Left	0	0	51			
Volume Right	24	52	0			
cSH	902	1700	1403			
Volume to Capacity	0.03	0.10	0.04			
Queue Length 95th (m)	0.6	0.0	0.9			
Control Delay (s)	9.1	0.0	1.1			
Lane LOS	A		A			
Approach Delay (s)	9.1	0.0	1.1			
Approach LOS	A					
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			46.5%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 3020: Riverside

Existing
Timing Plan: AM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↗
Traffic Volume (veh/h)	33	16	312	6	5	682
Future Volume (Veh/h)	33	16	312	6	5	682
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	37	18	347	7	6	758
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			264		113	
pX, platoon unblocked	0.81					
vC, conflicting volume	1120	350			354	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1033	350			354	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	82	97			100	
cM capacity (veh/h)	208	693			1205	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	55	354	764			
Volume Left	37	0	6			
Volume Right	18	7	0			
cSH	270	1700	1205			
Volume to Capacity	0.20	0.21	0.00			
Queue Length 95th (m)	5.7	0.0	0.1			
Control Delay (s)	21.7	0.0	0.1			
Lane LOS	C		A			
Approach Delay (s)	21.7	0.0	0.1			
Approach LOS	C					
Intersection Summary						
Average Delay		1.1				
Intersection Capacity Utilization		49.9%		ICU Level of Service	A	
Analysis Period (min)		15				

01-03-2018
NS

Synchro 10 Report
Page 3

HCM Unsignalized Intersection Capacity Analysis 3040: Riverside & Front St

Existing
Timing Plan: AM Peak

	↖	↗	↖	↑	↓	↘
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↖			↗	↗	↘
Traffic Volume (veh/h)	0	21	24	213	288	96
Future Volume (Veh/h)	0	21	24	213	288	96
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	23	26	232	313	104
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	533	208	417			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	533	208	417			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	466	797	1138			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	23	103	155	209	208	
Volume Left	0	26	0	0	0	
Volume Right	23	0	0	0	104	
cSH	797	1138	1700	1700	1700	
Volume to Capacity	0.03	0.02	0.09	0.12	0.12	
Queue Length 95th (m)	0.7	0.5	0.0	0.0	0.0	
Control Delay (s)	9.6	2.2	0.0	0.0	0.0	
Lane LOS	A	A				
Approach Delay (s)	9.6	0.9		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			30.9%		ICU Level of Service	A
Analysis Period (min)			15			

01-03-2018
NS

Synchro 10 Report
Page 4







HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Existing
Timing Plan: AM Peak

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	↔
Traffic Volume (veh/h)	0	6	0	0	12	5
Future Volume (Veh/h)	0	6	0	0	12	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	7	0	0	13	6
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			7		4	4
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			7		4	4
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	99
cM capacity (veh/h)			1614		1019	1080
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	7	0	19			
Volume Left	0	0	13			
Volume Right	7	0	6			
cSH	1700	1700	1037			
Volume to Capacity	0.00	0.00	0.02			
Queue Length 95th (m)	0.0	0.0	0.4			
Control Delay (s)	0.0	0.0	8.5			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.5			
Approach LOS			A			
Intersection Summary						
Average Delay			6.2			
Intersection Capacity Utilization		13.3%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
6010: Mt Seymour Pkwy & Browning Place

Existing
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	1	987	5	0	1844	6	1	0	17	10	0	5		
Future Volume (Veh/h)	1	987	5	0	1844	6	1	0	17	10	0	5		
Sign Control		Free			Free			Stop			Stop			
Grade		0%			0%			0%			0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50		
Hourly flow rate (vph)	1	1097	6	0	2049	7	1	0	21	20	0	10		
Pedestrians														
Lane Width (m)														
Walking Speed (m/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None			None										
Median storage veh														
Upstream signal (m)	284													
pX, platoon unblocked	0.57						0.57	0.57				0.57	0.57	0.57
vC, conflicting volume	2056				1103			2136	3158	552	2624	3158	1028	
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	1341				1103			1483	3278	552	2339	3277	0	
tC, single (s)	4.1				4.1			7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)														
tF (s)	2.2				2.2			3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	100				100			98	100	96	0	100	98	
cM capacity (veh/h)	290				629			48	5	478	11	5	617	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1						
Volume Total	1	731	372	0	1366	690	22	30						
Volume Left	1	0	0	0	0	0	1	20						
Volume Right	0	0	6	0	0	7	21	10						
cSH	290	1700	1700	1700	1700	1700	341	16						
Volume to Capacity	0.00	0.43	0.22	0.00	0.80	0.41	0.06	1.92						
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	1.6	33.2						
Control Delay (s)	17.5	0.0	0.0	0.0	0.0	0.0	16.3	931.8						
Lane LOS	C							C	F					
Approach Delay (s)	0.0				0.0			16.3	931.8					
Approach LOS							C	F						
Intersection Summary														
Average Delay	8.8													
Intersection Capacity Utilization	62.8%			ICU Level of Service					B					
Analysis Period (min)	15													

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Existing

Timing Plan: PM Peak

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	194	984	40	26	620	3	117	12	41	0	14	152
Future Volume (vph)	194	984	40	26	620	3	117	12	41	0	14	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3542	0	1690	3569	0	0	1774	1526	0	1921	1570
Flt Permitted	0.272			0.265				0.734				
Satd. Flow (perm)	512	3542	0	471	3569	0	0	1361	1526	0	1921	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			1				112			169
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.7	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	204	1078	0	31	733	0	0	161	51	0	16	169
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm		NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	10.0	38.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	14.7%	55.9%		41.2%	41.2%		44.1%	44.1%	44.1%	44.1%	44.1%	44.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	34.9	36.0		24.6	24.6		12.5	12.5		12.5	12.5	
Actuated g/C Ratio	0.67	0.69		0.47	0.47		0.24	0.24		0.24	0.24	
v/c Ratio	0.42	0.44		0.14	0.44		0.49	0.11		0.03	0.34	
Control Delay	7.9	6.5		12.8	12.0		23.7	1.0		15.6	5.4	
Queue Delay	0.9	0.9		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	8.7	7.4		12.8	12.0		23.7	1.0		15.6	5.4	
LOS	A	A		B	B		C	A		B	A	
Approach Delay		7.6			12.0			18.2			6.3	
Approach LOS		A			B			B			A	
Queue Length 50th (m)	7.1	24.7		1.7	25.1		13.9	0.0		1.2	0.0	
Queue Length 95th (m)	18.2	48.0		6.8	41.1		24.2	0.2		4.7	11.0	
Internal Link Dist (m)		45.3			44.7		199.8			74.7		
Turn Bay Length (m)	20.0			75.0				15.0			30.0	
Base Capacity (vph)	491	2438		221	1680		694	832		979	883	
Starvation Cap Reductn	112	1000		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.54	0.75		0.14	0.44		0.23	0.06		0.02	0.19	

Existing 12:00 pm 06-05-2017 No Improvement
NSSynchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Existing

Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	68
Actuated Cycle Length:	52.3
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.49
Intersection Signal Delay:	9.8
Intersection LOS:	A
Intersection Capacity Utilization:	60.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Existing 12:00 pm 06-05-2017 No Improvement
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway Existing
Timing Plan: PM Peak

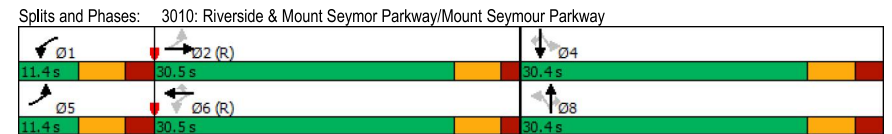
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	87	1179	180	166	688	43	90	73	473	32	33	62
Future Volume (vph)	87	1179	180	166	688	43	90	73	473	32	33	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	1		1	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3507	0	1789	3579	1601	0	1833	1601	0	1838	1601
Flt Permitted	0.270			0.134				0.795			0.810	
Satd. Flow (perm)	509	3507	0	252	3579	1601	0	1497	1601	0	1526	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				148			186			134
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			413.3			113.4			172.4	
Travel Time (s)		39.4			31.0			8.5			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	1658	0	184	764	48	0	204	591	0	81	78
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8		8	4		4
Detector Phase	5	2		1	6	6	8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	30.4
Total Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	30.4
Total Split (%)	15.8%	42.2%		15.8%	42.2%	42.2%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0		-2.4	-2.4		-2.4	-2.4
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5		4.0	4.0		4.0	4.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	35.4	27.8		36.4	30.3	28.8		24.7	24.7		24.7	24.7
Actuated g/C Ratio	0.49	0.38		0.50	0.42	0.40		0.34	0.34		0.34	0.34
v/c Ratio	0.28	1.21		0.63	0.51	0.07		0.40	0.88		0.16	0.12
Control Delay	10.7	127.7		23.0	18.5	0.2		20.3	32.0		16.5	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Total Delay	10.7	127.7		23.0	18.5	0.2		20.3	32.0		16.5	1.3
LOS	B	F		C	B	A		C	C		B	A
Approach Delay		120.7			18.4			29.0			9.0	
Approach LOS		F			B			C			A	
Queue Length 50th (m)	6.8	~153.2		12.3	43.0	0.0		19.9	50.4		7.2	0.0
Queue Length 95th (m)	12.4	#167.1		#35.0	59.4	0.0		31.1	72.4		13.8	0.9
Internal Link Dist (m)		500.9			389.3			89.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0			10.0
Base Capacity (vph)	383	1366		292	1501	727		546	702		557	669
Starvation Cap Reductn	0	0		0	0	0		0	0		0	0
Spillback Cap Reductn	0	0		0	0	0		0	0		0	0
Storage Cap Reductn	0	0		0	0	0		0	0		0	0
Reduced v/c Ratio	0.28	1.21		0.63	0.51	0.07		0.37	0.84		0.15	0.12

Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 5

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway Existing
Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	72.3
Actuated Cycle Length:	72.3
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.21
Intersection Signal Delay:	68.9
Intersection LOS:	E
Intersection Capacity Utilization:	83.4%
ICU Level of Service:	E
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Existing
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	149	3	17	0	6	11	19	483	3	0	113	264
Future Volume (vph)	149	3	17	0	6	11	19	483	3	0	113	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	0.0			0.0			0.0			0.0		
Satd. Flow (prot)	0	1795	1601	0	1718	0	1789	1882	0	0	1883	1601
Flt Permitted		0.716					0.676					
Satd. Flow (perm)	0	1349	1601	0	1718	0	1273	1882	0	0	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43		13			1				293
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	21	0	20	0	20	517	0	0	126	293
Turn Type	Perm	NA	Perm		NA		Perm	NA			NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	49.0%	49.0%	49.0%	49.0%	49.0%		51.0%	51.0%		51.0%	51.0%	51.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0			-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0			4.0		4.0	4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Act Effct Green (s)		12.8	12.8		12.8		19.1	19.1		19.1	19.1	
Actuated g/C Ratio		0.32	0.32		0.32		0.48	0.48		0.48	0.48	
v/c Ratio		0.44	0.04		0.04		0.03	0.58		0.14	0.32	
Control Delay		14.6	2.1		6.8		7.0	11.5		7.3	2.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		14.6	2.1		6.8		7.0	11.5		7.3	2.4	
LOS		B	A		A		A	B		A	A	
Approach Delay		13.4			6.8			11.4			3.9	
Approach LOS		B			A			B			A	
Queue Length 50th (m)		9.2	0.0		0.3		0.6	22.1		4.2	0.0	
Queue Length 95th (m)		20.3	1.4		3.1		3.5	54.9		13.0	9.3	
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0								15.0	
Base Capacity (vph)		720	875		923		712	1053		1053	1025	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.26	0.02		0.02		0.03	0.49		0.12	0.29	

Existing 12:00 pm 06-05-2017 No Improvement
NS

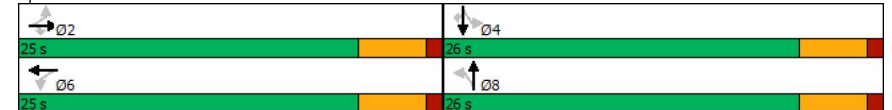
Synchro 10 Report
Page 7

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Existing
Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	51
Actuated Cycle Length:	40.1
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.58
Intersection Signal Delay:	9.0
Intersection Capacity Utilization:	57.8%
Intersection LOS:	A
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 3030: Riverside & Old Dollarton



Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 8

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Existing
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↗	↖	↗	↖	↗	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖			↖	↖		↖	↖
Traffic Volume (vph)	370	616	7	16	467	48	46	28	40	74	20	111
Future Volume (vph)	370	616	7	16	467	48	46	28	40	74	20	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1807	3595	0	1825	3469	0	0	1794	1633	0	1739	1617
Flt Permitted	0.334			0.389				0.760			0.718	
Satd. Flow (perm)	635	3595	0	747	3469	0	0	1405	1633	0	1298	1617
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		2			18				119			159
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	411	692	0	18	572	0	0	82	44	0	135	159
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	10.0	35.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	15.6%	54.7%		39.1%	39.1%		45.3%	45.3%	45.3%	45.3%	45.3%	45.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Act Effct Green (s)	31.1	31.1		21.1	21.1		11.4	11.4		11.4	11.4	
Actuated g/C Ratio	0.62	0.62		0.42	0.42		0.23	0.23		0.23	0.23	
v/c Ratio	0.78	0.31		0.06	0.39		0.26	0.10		0.46	0.33	
Control Delay	20.2	5.5		10.8	11.5		17.9	0.4		22.2	5.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.2	5.5		10.8	11.5		17.9	0.4		22.2	5.4	
LOS	C	A		B	B		B	A		C	A	
Approach Delay		11.0			11.4			11.8			13.1	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	14.9	12.5		0.9	16.9		6.1	0.0		10.5	0.0	
Queue Length 95th (m)	#52.1	25.3		4.4	31.5		14.7	0.0		16.8	5.1	
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	530	2213		311	1456		697	870		644	882	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.78	0.31		0.06	0.39		0.12	0.05		0.21	0.18	

Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 9

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Existing
Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	64
Actuated Cycle Length:	50.5
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	11.5
Intersection LOS:	B
Intersection Capacity Utilization:	56.8%
ICU Level of Service:	B
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	
Splits and Phases: 3050: Riverside & Dollarton Hwy	

Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Existing

Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖			↖			↖	↖
Traffic Volume (vph)	1	816	21	7	297	5	147	3	5	1	0	2
Future Volume (vph)	1	816	21	7	297	5	147	3	5	1	0	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3564	0	1789	3568	0	0	1790	0	0	1789	1601
Flt Permitted	0.549			0.285				0.737			0.741	
Satd. Flow (perm)	1034	3564	0	537	3568	0	0	1381	0	0	1396	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			4			4				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	910	0	8	336	0	0	172	0	0	1	3
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	30.0	30.0		30.0	30.0			11.9			11.9	11.9
Actuated g/C Ratio	0.64	0.64		0.64	0.64			0.26			0.26	0.26
v/c Ratio	0.00	0.40		0.02	0.15			0.49			0.00	0.01
Control Delay	6.0	6.5		5.9	5.3			18.9			12.0	0.0
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	6.0	6.5		5.9	5.3			18.9			12.0	0.0
LOS	A	A		A	A			B			B	A
Approach Delay		6.5			5.3			18.9			3.0	
Approach LOS		A			A			B			A	
Queue Length 50th (m)	0.0	18.3		0.2	5.5			11.3			0.1	0.0
Queue Length 95th (m)	0.6	37.4		1.8	13.0			24.1			0.7	0.0
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	684	2359		355	2361			745			751	878
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.00	0.39		0.02	0.14			0.23			0.00	0.00

Existing 12:00 pm 06-05-2017 No Improvement
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

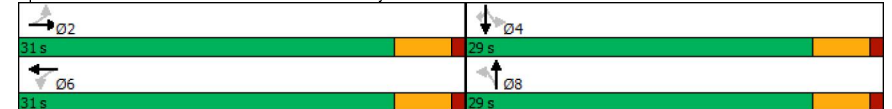
Existing

Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 46.6	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 45.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4050: Forester St & Dollarton Hwy

Existing 12:00 pm 06-05-2017 No Improvement
NSSynchro 10 Report
Page 12

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road Existing
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱	↰	↰	↰↱	↰	↰	↱	↰	↰	↱	↰
Traffic Volume (vph)	362	1242	78	6	681	49	45	8	15	29	4	173
Future Volume (vph)	362	1242	78	6	681	49	45	8	15	29	4	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.239			0.205			0.755			0.750		
Satd. Flow (perm)	450	3579	1601	386	3579	1601	1422	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			126			140			139			230
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		118.5			125.4			116.5			145.4	
Travel Time (s)		7.1			7.5			8.4			10.5	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	366	1335	144	10	783	58	54	11	22	36	4	201
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	9.1	39.7	39.7	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	13.3%	58.0%	58.0%	44.7%	44.7%	44.7%	42.0%	42.0%	42.0%	42.0%	42.0%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	55.3	56.9	56.9	32.5	32.5	32.5	10.2	10.2	10.2	10.2	10.2	68.4
Actuated g/C Ratio	0.81	0.83	0.83	0.48	0.48	0.48	0.15	0.15	0.15	0.15	0.15	1.00
v/c Ratio	0.50	0.45	0.11	0.05	0.46	0.07	0.26	0.04	0.06	0.17	0.01	0.13
Control Delay	6.3	3.7	1.1	14.0	14.4	0.2	28.2	24.0	0.3	26.6	23.5	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.3	3.7	1.1	14.0	14.4	0.2	28.2	24.0	0.3	26.6	23.5	0.2
LOS	A	A	A	B	B	A	C	C	A	C	C	A
Approach Delay		4.0			13.5			20.6			4.5	
Approach LOS		A			B			C			A	
Queue Length 50th (m)	11.4	27.8	0.5	0.7	37.3	0.0	6.3	1.2	0.0	4.1	0.5	0.0
Queue Length 95th (m)	31.9	47.7	0.9	2.5	53.1	0.0	13.5	3.9	0.0	9.6	2.6	0.0
Internal Link Dist (m)		94.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	730	2976	1352	183	1701	834	513	679	666	510	679	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.45	0.11	0.05	0.46	0.07	0.11	0.02	0.03	0.07	0.01	0.13

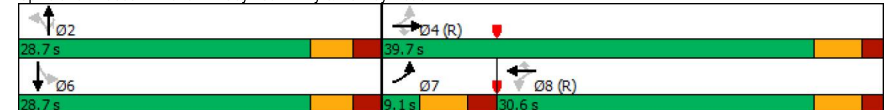
Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 13

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road Existing
Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	68.4
Actuated Cycle Length:	68.4
Offset:	0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle:	75
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.50
Intersection Signal Delay:	7.2
Intersection LOS:	A
Intersection Capacity Utilization:	74.3%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 14

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Existing
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	16	39	146	63	150	150
Future Volume (Veh/h)	16	39	146	63	150	150
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	43	162	70	167	167
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	698	197			232	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	690	184			219	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	95			88	
cM capacity (veh/h)	356	850			1337	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	61	232	334			
Volume Left	18	0	167			
Volume Right	43	70	0			
cSH	603	1700	1337			
Volume to Capacity	0.10	0.14	0.12			
Queue Length 95th (m)	2.6	0.0	3.2			
Control Delay (s)	11.6	0.0	4.6			
Lane LOS	B		A			
Approach Delay (s)	11.6	0.0	4.6			
Approach LOS	B					
Intersection Summary						
Average Delay			3.6			
Intersection Capacity Utilization			41.0%	ICU Level of Service	A	
Analysis Period (min)			15			











HCM Unsignalized Intersection Capacity Analysis
3020: Riverside & Windridge Dr

Existing
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	6	14	622	21	8	371
Future Volume (Veh/h)	6	14	622	21	8	371
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.60	0.60	0.80	0.80	0.95	0.95
Hourly flow rate (vph)	10	23	778	26	8	391
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			264		113	
pX, platoon unblocked	0.86	0.84			0.84	
vC, conflicting volume	1198	791			804	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1041	652			668	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	94			99	
cM capacity (veh/h)	216	391			771	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	33	804	399			
Volume Left	10	0	8			
Volume Right	23	26	0			
cSH	314	1700	771			
Volume to Capacity	0.11	0.47	0.01			
Queue Length 95th (m)	2.7	0.0	0.2			
Control Delay (s)	17.8	0.0	0.3			
Lane LOS	C		A			
Approach Delay (s)	17.8	0.0	0.3			
Approach LOS	C					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			44.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
3040: Riverside & Front St

Existing
Timing Plan: PM Peak










						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	82	59	22	423	97	32
Future Volume (Veh/h)	82	59	22	423	97	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	91	66	24	470	108	36
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	409	72	144			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	409	72	144			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	93	98			
cM capacity (veh/h)	561	975	1436			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	157	181	313	72	72	
Volume Left	91	24	0	0	0	
Volume Right	66	0	0	0	36	
cSH	683	1436	1700	1700	1700	
Volume to Capacity	0.23	0.02	0.18	0.04	0.04	
Queue Length 95th (m)	6.7	0.4	0.0	0.0	0.0	
Control Delay (s)	11.8	1.1	0.0	0.0	0.0	
Lane LOS	B	A				
Approach Delay (s)	11.8	0.4		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay		2.6				
Intersection Capacity Utilization		34.2%		ICU Level of Service	A	
Analysis Period (min)		15				

Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 3

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Existing
Timing Plan: PM Peak



















						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	4	2	0	4	13	0
Future Volume (Veh/h)	4	2	0	4	13	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	0	4	14	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			6		9	5
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			6		9	5
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1615		1011	1078
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	6	4	14			
Volume Left	0	0	14			
Volume Right	2	0	0			
cSH	1700	1615	1011			
Volume to Capacity	0.00	0.00	0.01			
Queue Length 95th (m)	0.0	0.0	0.3			
Control Delay (s)	0.0	0.0	8.6			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.6			
Approach LOS			A			
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			13.3%		ICU Level of Service	A
Analysis Period (min)			15			

Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 4

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Existing
Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	10	1666	7	9	884	6	1	0	9	7	0	12	
Future Volume (Veh/h)	10	1666	7	9	884	6	1	0	9	7	0	12	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70	
Hourly flow rate (vph)	11	1772	7	10	982	7	2	0	18	10	0	17	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)	284												
pX, platoon unblocked	0.86						0.86	0.86			0.86	0.86	0.86
vC, conflicting volume	989	1779					2326	2806	890	1932	2806	494	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	672	1779					2219	2776	890	1763	2776	100	
tC, single (s)	4.1	4.1					7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2	2.2					3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	99	97					90	100	94	76	100	98	
cM capacity (veh/h)	790	345					20	16	286	42	16	809	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	11	1181	598	10	655	334	20	27					
Volume Left	11	0	0	10	0	0	2	10					
Volume Right	0	0	7	0	0	7	18	17					
cSH	790	1700	1700	345	1700	1700	121	104					
Volume to Capacity	0.01	0.69	0.35	0.03	0.39	0.20	0.16	0.26					
Queue Length 95th (m)	0.3	0.0	0.0	0.7	0.0	0.0	4.3	7.3					
Control Delay (s)	9.6	0.0	0.0	15.7	0.0	0.0	40.4	51.4					
Lane LOS	A	C					E	F					
Approach Delay (s)	0.1	0.2					40.4	51.4					
Approach LOS							E	F					
Intersection Summary													
Average Delay	0.9												
Intersection Capacity Utilization	56.3%			ICU Level of Service				B					
Analysis Period (min)	15												

Existing 12:00 pm 06-05-2017 No Improvement
NS

Synchro 10 Report
Page 5

Lanes, Volumes, Timings 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Future Base
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	204	1027	114	96	1487	10	94	27	60	18	62	722
Future Volume (vph)	204	1027	114	96	1487	10	94	27	60	18	62	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.143			0.170				0.741			0.933	
Satd. Flow (perm)	241	3341	0	323	3507	0	0	1303	1408	0	1792	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	25		1				112				197	
Link Speed (k/h)	48		48		48		48		48		48	
Link Distance (m)	69.3		68.7		223.8		98.2					
Travel Time (s)	5.2		5.2		16.8		7.4					
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Adj. Flow (vph)	224	1129	125	100	1549	10	99	28	63	23	78	903
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	1254	0	100	1559	0	0	127	63	0	101	903
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		6			8		8		4	
Permitted Phases	2			6			8		8		4	
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	10.0	38.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	14.7%	55.9%		41.2%	41.2%		44.1%	44.1%	44.1%	44.1%	44.1%	44.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	34.0	34.0		24.0	24.0		26.0	26.0	26.0	26.0	26.0	26.0
Actuated g/C Ratio	0.50	0.50		0.35	0.35		0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio	0.93	0.75		0.88	1.26		0.26	0.10	0.15	0.15	1.23	
Control Delay	60.3	16.7		84.9	147.1		16.1	1.4	14.5	136.0		
Queue Delay	1.9	49.3		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.2	66.0		84.9	147.1		16.1	1.4	14.5	136.0		
LOS	E	E		F	F		B	A	B	F		
Approach Delay	65.5			143.4			11.2		123.7			
Approach LOS	E			F			B		F			
Queue Length 50th (m)	15.4	61.0		11.6	~135.1		10.7	0.0	8.1	~128.9		
Queue Length 95th (m)	#52.4	84.0		#38.1	#174.7		21.9	2.3	15.0	#158.8		
Internal Link Dist (m)		45.3			44.7		199.8		74.2			
Turn Bay Length (m)	20.0			75.0			15.0		30.0			
Base Capacity (vph)	240	1683		114	1238		498	607	685	733		
Starvation Cap Reductn	3	674		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Future Base

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.95	1.24		0.88	1.26			0.26	0.10		0.15	1.23

Intersection Summary

Area Type: Other

Cycle Length: 68

Actuated Cycle Length: 68

Natural Cycle: 140

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 106.4

Intersection LOS: F

Intersection Capacity Utilization 102.8%

ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings

3010: Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Future Base

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	36	833	270	661	1573	36	238	55	393	96	92	115
Future Volume (vph)	36	833	270	661	1573	36	238	55	393	96	92	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3446	0	1789	3579	1601	0	1810	1601	0	1759	0
Flt Permitted	0.146			0.136				0.494				0.587
Satd. Flow (perm)	275	3446	0	256	3579	1601	0	930	1601	0	1049	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	68					148			212			48
Link Speed (k/h)	48			48			48					48
Link Distance (m)	524.9			413.3			113.4					172.4
Travel Time (s)	39.4			31.0			8.5					12.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	40	926	300	734	1748	40	298	69	491	120	115	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	734	1748	40	0	367	491	0	379	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8				4
Permitted Phases	2			6		6	8		8	4		
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	
Total Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	
Total Split (%)	15.8%	42.2%		15.8%	42.2%	42.2%	42.0%	42.0%	42.0%	42.0%	42.0%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0		-2.4	-2.4		-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5		4.0	4.0		4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	33.9	26.5		35.5	31.1	29.6		26.4	26.4		26.4	
Actuated g/C Ratio	0.47	0.37		0.49	0.43	0.41		0.37	0.37		0.37	
v/c Ratio	0.14	0.94		2.60	1.14	0.05		1.08	0.68		0.92	
Control Delay	9.7	36.4		747.8	94.7	0.1		99.4	16.4		50.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	9.7	36.4		747.8	94.7	0.1		99.4	16.4		50.2	
LOS	A	D		F	F	A		F	B		D	
Approach Delay		35.5			283.2			51.9			50.2	
Approach LOS		D			F			D			D	
Queue Length 50th (m)	2.5	78.7		~161.4	~165.8	0.0		~56.9	30.1		42.8	
Queue Length 95th (m)	6.5	#121.2		#223.4	#205.6	0.0		#86.9	47.6		#75.9	
Internal Link Dist (m)		500.9			389.3			89.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0			
Base Capacity (vph)	283	1306		282	1537	742		339	719		413	
Starvation Cap Reductn	0	0		0	0	0		0	0		0	
Spillback Cap Reductn	0	0		0	0	0		0	0		0	
Storage Cap Reductn	0	0		0	0	0		0	0		0	
Reduced v/c Ratio	0.14	0.94		2.60	1.14	0.05		1.08	0.68		0.92	

Lanes, Volumes, Timings

3010: Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Future Base

Timing Plan: AM Peak

Intersection Summary

Area Type: Other

Cycle Length: 72.3

Actuated Cycle Length: 72.3

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 2.60

Intersection Signal Delay: 163.7

Intersection LOS: F

Intersection Capacity Utilization 114.2%

ICU Level of Service H

Analysis Period (min) 15

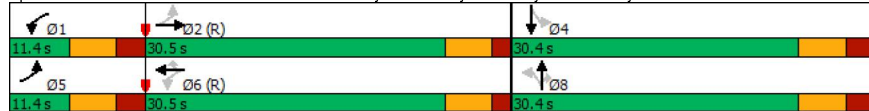
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3010: Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road

Future Base

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	10	46	45	22	82	25	339	24	51	623	422
Future Volume (vph)	254	10	46	45	22	82	25	339	24	51	623	422
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	0.0			0.0			0.0			0.0		
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1865	0	0	1876	1601
Flt Permitted		0.621			0.815		0.181				0.945	
Satd. Flow (perm)	0	1170	1601	0	1420	0	341	1865	0	0	1780	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			9				231
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	363	14	66	64	31	117	28	377	27	56	685	464
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	66	0	212	0	28	404	0	0	741	464
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	49.0%	49.0%	49.0%	49.0%	49.0%		51.0%	51.0%		51.0%	51.0%	51.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Act Effct Green (s)		19.5	19.5		19.5		22.1	22.1			22.1	22.1
Actuated g/C Ratio		0.39	0.39		0.39		0.45	0.45			0.45	0.45
v/c Ratio		0.82	0.10		0.34		0.18	0.48			0.94	0.55
Control Delay		31.3	3.6		6.7		12.8	12.5			37.5	8.2
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		31.3	3.6		6.7		12.8	12.5			37.5	8.2
LOS		C	A		A		B	B			D	A
Approach Delay		27.2			6.7			12.5			26.2	
Approach LOS		C			A			B			C	
Queue Length 50th (m)		28.2	0.0		5.2		1.5	24.4			61.7	13.3
Queue Length 95th (m)		37.3	3.1		9.9		6.0	43.7			#123.4	33.7
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)		496	718		670		152	834			791	840
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.76	0.09		0.32		0.18	0.48			0.94	0.55

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road

Future Base

Timing Plan: AM Peak

Intersection Summary

Area Type: Other

Cycle Length: 51

Actuated Cycle Length: 49.6

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 22.0

Intersection LOS: C

Intersection Capacity Utilization 86.2%

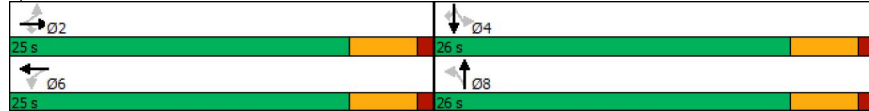
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside Drive & Old Dollarton Road

01-03-2018
NSSynchro 10 Report
Page 8

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Future Base

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	231	775	16	46	1116	92	81	47	34	174	68	349
Future Volume (vph)	231	775	16	46	1116	92	81	47	34	174	68	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1706	3387	0	1825	3411	0	0	1696	1396	0	1626	1570
Flt Permitted	0.158			0.326				0.639			0.689	
Satd. Flow (perm)	284	3387	0	626	3411	0	0	1118	1396	0	1161	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			14				119			223
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Adj. Flow (vph)	254	852	18	51	1240	102	101	59	43	193	76	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	870	0	51	1342	0	0	160	43	0	269	388
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	10.0	35.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	15.6%	54.7%		39.1%	39.1%		45.3%	45.3%	45.3%	45.3%	45.3%	45.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Act Effct Green (s)	31.3	31.3		21.2	21.2			18.9	18.9		18.9	18.9
Actuated g/C Ratio	0.54	0.54		0.36	0.36			0.32	0.32		0.32	0.32
v/c Ratio	0.85	0.48		0.22	1.07			0.44	0.08		0.72	0.59
Control Delay	40.5	10.5		18.3	70.8			19.2	0.3		28.4	10.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	40.5	10.5		18.3	70.8			19.2	0.3		28.4	10.5
LOS	D	B		B	E			B	A		C	B
Approach Delay		17.3			68.9			15.2			17.9	
Approach LOS		B			E			B			B	
Queue Length 50th (m)	14.1	28.8		3.8	~90.1			13.0	0.0		24.4	12.9
Queue Length 95th (m)	#54.7	49.4		12.2	#141.6			22.8	0.0		46.6	33.3
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	300	1820		227	1249			484	671		502	806
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0













01-03-2018
NSSynchro 10 Report
Page 9

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Future Base

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Reduced v/c Ratio	0.85	0.48		0.22	1.07			0.33	0.06		0.54	0.48
Intersection Summary												
Area Type:	Other											
Cycle Length: 64												
Actuated Cycle Length: 58.3												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 38.6							Intersection LOS: D					
Intersection Capacity Utilization 76.5%							ICU Level of Service D					
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 3050: Riverside Drive & Dollarton Hwy

	Ø2													Ø4
35 s													29 s	
	Ø5													Ø6
10 s													25 s	
														Ø8
														29 s

01-03-2018
NSSynchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Future Base

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	787	109	20	1202	15	81	1	11	28	1	33
Future Volume (vph)	26	787	109	20	1202	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3514	0	1789	3571	0	0	1775	0	0	1797	1601
Flt Permitted	0.187			0.281				0.719			0.772	
Satd. Flow (perm)	352	3514	0	529	3571	0	0	1333	0	0	1454	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			3			12				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Adj. Flow (vph)	28	846	117	21	1252	16	87	1	12	47	2	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	963	0	21	1268	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	31.5	31.5		31.5	31.5			9.6			9.6	9.6
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.23			0.23	0.23
v/c Ratio	0.11	0.36		0.05	0.47			0.32			0.15	0.14
Control Delay	5.8	4.3		4.8	5.2			15.6			14.6	8.7
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	5.8	4.3		4.8	5.2			15.6			14.6	8.7
LOS	A	A		A	A			B			B	A
Approach Delay		4.4			5.2			15.6			11.5	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	0.7	15.4		0.5	24.0			5.6			3.0	1.2
Queue Length 95th (m)	3.9	30.5		2.8	46.4			15.0			5.8	3.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	261	2613		392	2648			820			890	994
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.11	0.37		0.05	0.48			0.12			0.06	0.06

01-03-2018
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Future Base
Timing Plan: AM Peak

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 41.9

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 5.6

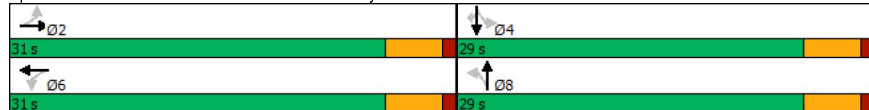
Intersection LOS: A

Intersection Capacity Utilization 55.4%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy



01-03-2018
NS

Synchro 10 Report
Page 12

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Future Base
Timing Plan: AM Peak

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↶↷	↰		↶↷	
Traffic Volume (vph)	309	516	1057	182	66	154
Future Volume (vph)	309	516	1057	182	66	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	0
Taper Length (m)	0.0				0.0	
Satd. Flow (prot)	1789	3579	1846	0	1679	0
Flt Permitted	0.085				0.985	
Satd. Flow (perm)	160	3579	1846	0	1679	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			19		76	
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	343	573	1174	202	73	171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	343	573	1376	0	244	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Detector Phase	4	4	8		6	
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0		7.0	
Minimum Split (s)	30.0	30.0	30.0		28.0	
Total Split (s)	52.0	52.0	52.0		28.0	
Total Split (%)	65.0%	65.0%	65.0%		35.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	None		None	
Act Effct Green (s)	47.2	47.2	47.2		12.6	
Actuated g/C Ratio	0.68	0.68	0.68		0.18	
v/c Ratio	3.18	0.24	1.10		0.67	
Control Delay	1019.6	5.2	72.4		27.4	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	1019.6	5.2	72.4		27.4	
LOS	F	A	E		C	
Approach Delay		385.0	72.4		27.4	
Approach LOS		F	E		C	
Queue Length 50th (m)	~67.2	12.4	~206.8		20.1	
Queue Length 95th (m)	#125.6	24.8	#321.6		40.9	
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0					
Base Capacity (vph)	108	2420	1254		606	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	3.18	0.24	1.10		0.40	

01-03-2018
NS

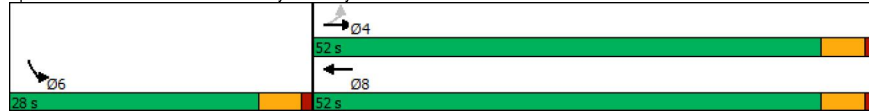
Synchro 10 Report
Page 13

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Future Base
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 69.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 3.18	
Intersection Signal Delay: 181.0	Intersection LOS: F
Intersection Capacity Utilization 113.1%	ICU Level of Service H
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Future Base
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	179	1144	39	7	1872	52	24	9	22	77	13	435
Future Volume (vph)	179	1144	39	7	1872	52	24	9	22	77	13	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.123			0.215			0.748			0.750		
Satd. Flow (perm)	232	3579	1601	405	3579	1601	1409	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			43			140			139			139
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		284.1			116.0			119.3			142.6	
Travel Time (s)		17.0			7.0			8.9			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	195	1243	42	8	2035	57	30	11	28	86	14	483
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1243	42	8	2035	57	30	11	28	86	14	483
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	28.7
Total Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	28.7
Total Split (%)	13.3%	44.7%	44.7%	44.7%	44.7%	44.7%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	3.4
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	2.3
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	-1.7
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	39.3	39.3	39.3	27.9	27.9	27.9	21.1	21.1	21.1	21.1	21.1	21.1
Actuated g/C Ratio	0.57	0.57	0.57	0.41	0.41	0.41	0.31	0.31	0.31	0.31	0.31	0.31
v/c Ratio	0.65	0.60	0.04	0.05	1.39	0.08	0.07	0.02	0.05	0.20	0.02	0.82
Control Delay	23.7	11.9	3.0	14.1	204.6	0.2	15.2	14.3	0.1	17.0	14.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.7	11.9	3.0	14.1	204.6	0.2	15.2	14.3	0.1	17.0	14.5	27.4
LOS	C	B	A	B	F	A	B	B	A	B	B	C
Approach Delay		13.2			198.4			9.0			25.5	
Approach LOS		B			F			A			C	
Queue Length 50th (m)		11.6	53.0	0.0	0.6	~191.7	0.0	2.6	0.9	0.0	7.6	1.2
Queue Length 95th (m)		#42.2	76.4	3.8	3.2	#232.0	0.0	6.4	3.4	0.0	16.1	4.3
Internal Link Dist (m)			260.1			92.0			95.3		118.6	
Turn Bay Length (m)		60.0		35.0	65.0		65.0	50.0		30.0		30.0
Base Capacity (vph)		301	2056	938	165	1459	736	508	679	666	510	679
Starvation Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio		0.65	0.60	0.04	0.05	1.39	0.08	0.06	0.02	0.04	0.17	0.02

01-03-2018
NS

Synchro 10 Report
Page 15

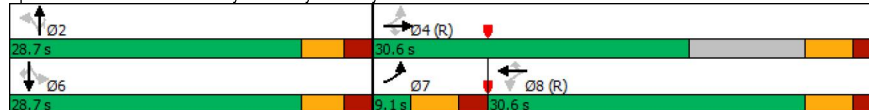
Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Future Base
Timing Plan: AM Peak

Intersection Summary

Area Type: Other
Cycle Length: 68.4
Actuated Cycle Length: 68.4
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.39
Intersection Signal Delay: 106.7 Intersection LOS: F
Intersection Capacity Utilization 94.5% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Future Base
Timing Plan: AM Peak

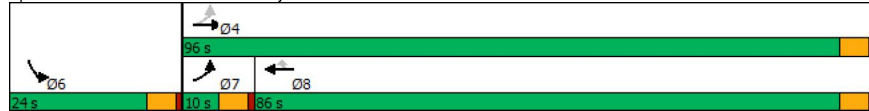
	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↱	↰	↱	↰	↱
Traffic Volume (vph)	103	480	1215	61	22	51
Future Volume (vph)	103	480	1215	61	22	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.5			7.5		
Satd. Flow (prot)	1789	1883	1883	1601	1681	0
Flt Permitted	0.047				0.985	
Satd. Flow (perm)	89	1883	1883	1601	1681	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				35	55	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	391.4		116.7	
Travel Time (s)		37.0	29.4		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	522	1321	66	24	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	522	1321	66	79	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	10.0	96.0	86.0	86.0	24.0	
Total Split (%)	8.3%	80.0%	71.7%	71.7%	20.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	Max	
Act Effct Green (s)	91.0	91.0	81.0	81.0	19.0	
Actuated g/C Ratio	0.76	0.76	0.68	0.68	0.16	
v/c Ratio	0.81	0.37	1.04	0.06	0.25	
Control Delay	59.3	5.7	56.8	3.7	19.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	59.3	5.7	56.8	3.7	19.9	
LOS	E	A	E	A	B	
Approach Delay		15.1	54.3		19.9	
Approach LOS		B	D		B	
Queue Length 50th (m)	10.3	35.1	~335.9	2.2	4.9	
Queue Length 95th (m)	#41.5	48.7	#415.3	6.6	18.6	
Internal Link Dist (m)		469.5	367.4		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	138	1427	1271	1092	312	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.81	0.37	1.04	0.06	0.25	

Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Future Base
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 120	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 41.2	Intersection LOS: D
Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 7050: Dollarton Hwy & Collector A



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton Road

Future Base
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	96	127	5	3	432	88	2	1	44	94	0	181
Future Volume (Veh/h)	96	127	5	3	432	88	2	1	44	94	0	181
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	120	159	6	3	465	95	3	1	55	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		235			201							
pX, platoon unblocked												
vC, conflicting volume	560			165			1146	968	162	976	924	512
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560			165			1146	968	162	976	924	512
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			97	100	94	39	100	60
cM capacity (veh/h)	987			1245			96	224	888	195	238	560
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	285	563	59	344								
Volume Left	120	3	3	118								
Volume Right	6	95	55	226								
cSH	987	1245	604	341								
Volume to Capacity	0.12	0.00	0.10	1.01								
Queue Length 95th (m)	3.1	0.1	2.5	87.8								
Control Delay (s)	4.6	0.1	11.6	86.9								
Lane LOS	A	A	B	F								
Approach Delay (s)	4.6	0.1	11.6	86.9								
Approach LOS			B	F								
Intersection Summary												
Average Delay		25.5										
Intersection Capacity Utilization		73.6%		ICU Level of Service						D		
Analysis Period (min)		15										

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton/Old Dollarton Road & Front St

Future Base
Timing Plan: AM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	178	30	175	71	52	553
Future Volume (Veh/h)	178	30	175	71	52	553
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	33	194	79	58	614
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			98		338	
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	964	234			273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	929	152			194	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	26	96			96	
cM capacity (veh/h)	267	840			1296	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	231	273	672			
Volume Left	198	0	58			
Volume Right	33	79	0			
cSH	295	1700	1296			
Volume to Capacity	0.78	0.16	0.04			
Queue Length 95th (m)	46.5	0.0	1.1			
Control Delay (s)	49.9	0.0	1.2			
Lane LOS	E		A			
Approach Delay (s)	49.9	0.0	1.2			
Approach LOS	E					
Intersection Summary						
Average Delay		10.5				
Intersection Capacity Utilization		67.2%		ICU Level of Service	C	
Analysis Period (min)		15				













HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive & Windridge Dr

Future Base
Timing Plan: AM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	73	29	649	18	12	1015
Future Volume (Veh/h)	73	29	649	18	12	1015
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	81	32	721	20	13	1128
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			264		113	
pX, platoon unblocked	0.62	0.97			0.97	
vC, conflicting volume	1885	731			741	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2014	707			718	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	92			98	
cM capacity (veh/h)	39	422			857	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	113	741	1141			
Volume Left	81	0	13			
Volume Right	32	20	0			
cSH	53	1700	857			
Volume to Capacity	2.14	0.44	0.02			
Queue Length 95th (m)	85.7	0.0	0.4			
Control Delay (s)	691.9	0.0	0.5			
Lane LOS	F		A			
Approach Delay (s)	691.9	0.0	0.5			
Approach LOS	F					
Intersection Summary						
Average Delay		39.5				
Intersection Capacity Utilization		75.5%		ICU Level of Service	D	
Analysis Period (min)		15				













HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Future Base
Timing Plan: AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	49	38	38	324	529	153
Future Volume (Veh/h)	49	38	38	324	529	153
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	41	41	352	575	166
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (m)			105	138		
pX, platoon unblocked						
vC, conflicting volume	916	370	741			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	916	370	741			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	93	95			
cM capacity (veh/h)	259	627	862			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	94	158	235	383	358	
Volume Left	53	41	0	0	0	
Volume Right	41	0	0	0	166	
cSH	348	862	1700	1700	1700	
Volume to Capacity	0.27	0.05	0.14	0.23	0.21	
Queue Length 95th (m)	8.2	1.1	0.0	0.0	0.0	
Control Delay (s)	19.1	2.8	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	19.1	1.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		44.6%		ICU Level of Service	A	
Analysis Period (min)		15				



















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton Road

Future Base
Timing Plan: AM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	17	25	27	16	21	13
Future Volume (Veh/h)	17	25	27	16	21	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	28	30	18	23	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			47		111	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		111	33
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		97	99
cM capacity (veh/h)			1560		869	1041
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	47	48	37			
Volume Left	0	30	23			
Volume Right	28	0	14			
cSH	1700	1560	927			
Volume to Capacity	0.03	0.02	0.04			
Queue Length 95th (m)	0.0	0.4	0.9			
Control Delay (s)	0.0	4.6	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.6	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay		4.2				
Intersection Capacity Utilization		19.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Future Base
Timing Plan: AM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	1	1318	6	49	2274	7	1	0	33	12	0	6	
Future Volume (Veh/h)	1	1318	6	49	2274	7	1	0	33	12	0	6	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50	
Hourly flow rate (vph)	1	1464	7	54	2527	8	1	0	41	24	0	12	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage veh													
Upstream signal (m)	284												
pX, platoon unblocked	0.61						0.61	0.61			0.61	0.61	0.61
vC, conflicting volume	2535				1471			2853	4112	736	3414	4112	1268
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	2237				1471			2759	4826	736	3680	4825	156
tC, single (s)	4.1				4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)													
tF (s)	2.2				2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99				88			80	100	89	0	100	98
cM capacity (veh/h)	139				454			5	0	362	1	0	525
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	1	976	495	54	1685	850	42	36					
Volume Left	1	0	0	54	0	0	1	24					
Volume Right	0	0	7	0	0	8	41	12					
cSH	139	1700	1700	454	1700	1700	133	1					
Volume to Capacity	0.01	0.57	0.29	0.12	0.99	0.50	0.32	28.90					
Queue Length 95th (m)	0.2	0.0	0.0	3.1	0.0	0.0	9.5	Err					
Control Delay (s)	31.1	0.0	0.0	14.0	0.0	0.0	44.2	Err					
Lane LOS	D				B			E	F				
Approach Delay (s)	0.0				0.3			44.2	Err				
Approach LOS							E	F					
Intersection Summary													
Average Delay	87.6												
Intersection Capacity Utilization	77.4%			ICU Level of Service				D					
Analysis Period (min)	15												

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Future Base
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	467	1552	46	37	1109	15	138	19	55	13	19	291
Future Volume (vph)	467	1552	46	37	1109	15	138	19	55	13	19	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3553	0	1690	3557	0	0	1778	1526	0	1883	1570
Flt Permitted	0.142			0.165				0.727			0.867	
Satd. Flow (perm)	267	3553	0	294	3557	0	0	1349	1526	0	1666	1570
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	6			2			112			200		
Link Speed (k/h)	48			48			48			48		
Link Distance (m)	69.3			68.7			223.8			98.7		
Travel Time (s)	5.2			5.2			16.8			7.4		
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	492	1682	0	44	1323	0	0	197	69	0	35	323
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	10.0	38.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	14.7%	55.9%		41.2%	41.2%		44.1%	44.1%	44.1%	44.1%	44.1%	44.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	34.2	34.2		24.1	24.1		14.3	14.3	14.3	14.3	14.3	14.3
Actuated g/C Ratio	0.61	0.61		0.43	0.43		0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	1.52	0.78		0.35	0.87		0.58	0.15	0.08	0.59		
Control Delay	267.7	13.2		22.8	24.5		25.4	2.2	15.7	12.0		
Queue Delay	0.0	47.9		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	267.7	61.1		22.8	24.5		25.4	2.2	15.7	12.0		
LOS	F	E		C	C		C	A	B	B		
Approach Delay	107.9			24.5			19.4			12.3		
Approach LOS	F			C			B			B		
Queue Length 50th (m)	~58.4	57.3		2.9	61.3		17.5	0.0	2.7	10.2		
Queue Length 95th (m)	#123.8	#121.3		11.7	#109.6		29.1	2.0	7.9	28.6		
Internal Link Dist (m)	45.3			44.7			199.8			74.7		
Turn Bay Length (m)	20.0			75.0			15.0			30.0		
Base Capacity (vph)	324	2151		125	1519		623	766	770	833		
Starvation Cap Reductn	0	717		0	0		0	0	0	0		
Spillback Cap Reductn	0	0		0	0		0	0	0	0		
Storage Cap Reductn	0	0		0	0		0	0	0	0		
Reduced v/c Ratio	1.52	1.17		0.35	0.87		0.32	0.09	0.05	0.39		

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Future Base

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 68

Actuated Cycle Length: 56.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.52

Intersection Signal Delay: 66.6

Intersection LOS: E

Intersection Capacity Utilization 82.3%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings

3010: Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Future Base

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	99	1342	322	404	783	49	198	108	726	35	64	71
Future Volume (vph)	99	1342	322	404	783	49	198	108	726	35	64	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	1		1	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3475	0	1789	3579	1601	0	1825	1601	0	1760	0
Flt Permitted	0.204			0.141				0.658			0.819	
Satd. Flow (perm)	384	3475	0	266	3579	1601	0	1239	1601	0	1456	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				148			184		56	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			413.3			113.4			172.4	
Travel Time (s)		39.4			31.0			8.5			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	449	870	54	0	383	908	0	213	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8		8	4		
Detector Phase	5	2		1	6	6	8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	
Total Split (s)	11.4	30.5		11.4	30.5	30.5	30.4	30.4	30.4	30.4	30.4	
Total Split (%)	15.8%	42.2%		15.8%	42.2%	42.2%	42.0%	42.0%	42.0%	42.0%	42.0%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5	2.5	2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0		-2.4	-2.4		-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5		4.0	4.0		4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes						
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	33.9	26.5		34.7	28.8	27.3		26.4	26.4		26.4	
Actuated g/C Ratio	0.47	0.37		0.48	0.40	0.38		0.37	0.37		0.37	
v/c Ratio	0.37	1.56		1.59	0.61	0.08		0.85	1.30		0.38	
Control Delay	12.5	278.3		300.0	20.4	0.2		41.2	164.3		14.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	12.5	278.3		300.0	20.4	0.2		41.2	164.3		14.6	
LOS	B	F		F	C	A		D	F		B	
Approach Delay		263.3			111.1			127.7			14.6	
Approach LOS		F			F			F			B	
Queue Length 50th (m)	7.8	~210.2		~75.6	50.8	0.0		46.7	~144.7		14.8	
Queue Length 95th (m)	13.8	#220.1		#128.2	69.4	0.0		#75.6	#173.8		25.8	
Internal Link Dist (m)		500.9			389.3			89.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0		25.0				
Base Capacity (vph)	323	1302		283	1424	696		452	701		567	
Starvation Cap Reductn	0	0		0	0	0		0	0		0	
Spillback Cap Reductn	0	0		0	0	0		0	0		0	
Storage Cap Reductn	0	0		0	0	0		0	0		0	
Reduced v/c Ratio	0.37	1.56		1.59	0.61	0.08		0.85	1.30		0.38	

Lanes, Volumes, Timings

3010: Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Future Base

Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 72.3	
Actuated Cycle Length: 72.3	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.59	
Intersection Signal Delay: 176.4	Intersection LOS: F
Intersection Capacity Utilization 112.0%	ICU Level of Service H
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3010: Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Ø1	Ø2 (R)	Ø4
11.4 s	30.5 s	30.4 s
Ø5	Ø6 (R)	Ø8
11.4 s	30.5 s	30.4 s

01-03-2018
NSSynchro 10 Report
Page 6

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road

Future Base

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔	↔		↔		↔	↔			↔	↔
Traffic Volume (vph)	268	30	36	28	18	80	43	727	70	77	343	351
Future Volume (vph)	268	30	36	28	18	80	43	727	70	77	343	351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	0.0			0.0			0.0			0.0		
Satd. Flow (prot)	0	1802	1601	0	1703	0	1789	1859	0	0	1866	1601
Flt Permitted		0.664			0.860		0.408				0.468	
Satd. Flow (perm)	0	1251	1601	0	1480	0	768	1859	0	0	881	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			12				308
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	45	0	148	0	46	847	0	0	467	390
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	38.5%		61.5%	61.5%		61.5%	61.5%	61.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Act Effct Green (s)		20.9	20.9		20.9		34.7	34.7		34.7	34.7	
Actuated g/C Ratio		0.33	0.33		0.33		0.55	0.55		0.55	0.55	
v/c Ratio		0.91	0.08		0.27		0.11	0.83		0.97	0.38	
Control Delay		51.3	6.0		8.6		7.8	21.1		53.1	3.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		51.3	6.0		8.6		7.8	21.1		53.1	3.2	
LOS		D	A		A		A	C		D	A	
Approach Delay		46.4			8.6			20.4			30.4	
Approach LOS		D			A			C			C	
Queue Length 50th (m)		42.6	0.0		4.5		2.4	74.5		48.3	4.2	
Queue Length 95th (m)		#73.4	4.8		14.2		6.7	#145.5		#107.0	15.2	
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0								15.0	
Base Capacity (vph)		413	559		552		435	1058		498	1041	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.90	0.08		0.27		0.11	0.80		0.94	0.37	

01-03-2018
NSSynchro 10 Report
Page 7

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road

Future Base

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 65

Actuated Cycle Length: 63.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 28.0

Intersection LOS: C

Intersection Capacity Utilization 97.9%

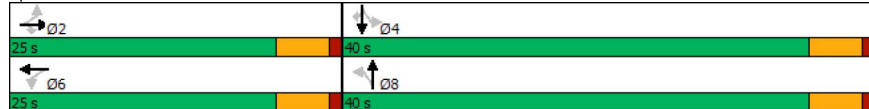
ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside Drive & Old Dollarton Road

01-03-2018
NSSynchro 10 Report
Page 8

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Future Base

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	557	1017	9	25	875	172	60	44	51	144	28	200
Future Volume (vph)	557	1017	9	25	875	172	60	44	51	144	28	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1807	3602	0	1825	3412	0	0	1794	1633	0	1728	1617
Flt Permitted	0.158			0.249				0.737			0.682	
Satd. Flow (perm)	301	3602	0	478	3412	0	0	1360	1633	0	1228	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			38				119			234
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	619	1140	0	28	1163	0	0	116	57	0	246	286
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	10.0	35.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	15.6%	54.7%		39.1%	39.1%		45.3%	45.3%	45.3%	45.3%	45.3%	45.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Act Effct Green (s)	31.3	31.3		21.2	21.2			17.2	17.2		17.2	17.2
Actuated g/C Ratio	0.55	0.55		0.38	0.38			0.30	0.30		0.30	0.30
v/c Ratio	1.89	0.57		0.16	0.89			0.28	0.10		0.66	0.44
Control Delay	430.0	10.8		17.1	29.2			16.1	0.8		25.9	6.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	430.0	10.8		17.1	29.2			16.1	0.8		25.9	6.0
LOS	F	B		B	C			B	A		C	A
Approach Delay		158.3			28.9			11.1			15.2	
Approach LOS		F			C			B			B	
Queue Length 50th (m)	~86.8	35.4		1.8	54.7			8.9	0.0		21.4	3.8
Queue Length 95th (m)	#163.5	68.6		8.0	#113.3			18.7	1.1		28.7	8.5
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0					25.0			
Base Capacity (vph)	327	1993		178	1302			606	794		547	851
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	1.89	0.57		0.16	0.89			0.19	0.07		0.45	0.34

01-03-2018
NSSynchro 10 Report
Page 9

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Future Base

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 64

Actuated Cycle Length: 56.5

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.89

Intersection Signal Delay: 88.3

Intersection LOS: F

Intersection Capacity Utilization 86.6%

ICU Level of Service E

Analysis Period (min) 15

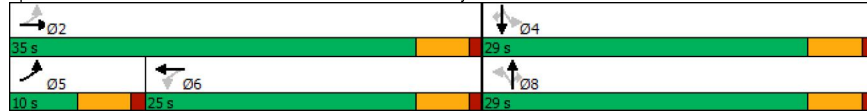
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Future Base

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	24	1291	24	8	781	23	176	4	9	31	0	17
Future Volume (vph)	24	1291	24	8	781	23	176	4	9	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3568	0	1789	3564	0	0	1788	0	0	1789	1601
Flt Permitted	0.286			0.136				0.712			0.737	
Satd. Flow (perm)	539	3568	0	256	3564	0	0	1333	0	0	1388	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			5				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1429	0	9	894	0	0	210	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	30.4	30.4		30.4	30.4		13.5			13.5	13.5	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.28			0.28	0.28	
v/c Ratio	0.08	0.64		0.06	0.40		0.56			0.10	0.04	
Control Delay	7.5	10.5		8.0	7.4		20.4			12.9	3.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Delay	7.5	10.5		8.0	7.4		20.4			12.9	3.4	
LOS	A	B		A	A		C			B	A	
Approach Delay		10.4			7.5		20.4			9.6		
Approach LOS		B			A		C			A		
Queue Length 50th (m)	0.9	40.9		0.3	20.3		14.8			2.5	0.0	
Queue Length 95th (m)	4.7	83.4		2.5	42.2		30.1			6.5	1.9	
Internal Link Dist (m)		218.5			316.8		190.7			136.0		
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	342	2265		162	2263		698			724	852	
Starvation Cap Reductn	0	0		0	0		0			0	0	
Spillback Cap Reductn	0	0		0	0		0			0	0	
Storage Cap Reductn	0	0		0	0		0			0	0	
Reduced v/c Ratio	0.08	0.63		0.06	0.40		0.30			0.05	0.02	

01-03-2018
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Future Base
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	48.3
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	10.2
Intersection Capacity Utilization:	60.3%
Analysis Period (min):	15
Intersection LOS:	B
ICU Level of Service:	B

Splits and Phases: 4050: Forester St & Dollarton Hwy

→ Ø2	↓ Ø4
31 s	29 s
← Ø6	↑ Ø8
31 s	29 s

01-03-2018
NS

Synchro 10 Report
Page 12

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Future Base
Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↖	↗
Traffic Volume (vph)	176	1156	552	25	58	259
Future Volume (vph)	176	1156	552	25	58	259
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	0
Taper Length (m)	0.0				0.0	
Satd. Flow (prot)	1789	3579	1872	0	1661	0
Flt Permitted	0.339				0.991	
Satd. Flow (perm)	638	3579	1872	0	1661	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			6		240	
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	191	1257	627	0	345	0
Turn Type	Perm	NA	NA		Prot	
Protected Phases		4	8		6	
Permitted Phases	4					
Detector Phase	4	4	8		6	
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0		7.0	
Minimum Split (s)	30.0	30.0	30.0		24.0	
Total Split (s)	36.0	36.0	36.0		24.0	
Total Split (%)	60.0%	60.0%	60.0%		40.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Min	Min	None		None	
Act Effct Green (s)	27.7	27.7	27.7		10.0	
Actuated g/C Ratio	0.58	0.58	0.58		0.21	
v/c Ratio	0.52	0.61	0.58		0.64	
Control Delay	13.6	8.6	9.7		12.2	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	13.6	8.6	9.7		12.2	
LOS	B	A	A		B	
Approach Delay		9.3	9.7		12.2	
Approach LOS		A	A		B	
Queue Length 50th (m)	7.4	27.8	25.4		7.1	
Queue Length 95th (m)	30.6	62.4	68.4		26.8	
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0					
Base Capacity (vph)	420	2357	1235		813	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.45	0.53	0.51		0.42	

01-03-2018
NS

Synchro 10 Report
Page 13

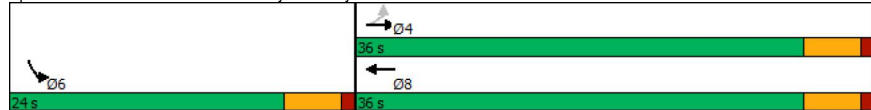
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Future Base
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 47.8	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 9.8	Intersection LOS: A
Intersection Capacity Utilization 83.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Future Base
Timing Plan: PM Peak

	↗	→	↘	↖	←	↗	↖	↑	↘	↖	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗	↗
Traffic Volume (vph)	412	1615	89	7	1005	56	51	9	17	33	5	197
Future Volume (vph)	412	1615	89	7	1005	56	51	9	17	33	5	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.138			0.175			0.754			0.749		
Satd. Flow (perm)	260	3579	1601	330	3579	1601	1420	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			140			139			230
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		284.0			125.4			116.5			145.4	
Travel Time (s)		17.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1737	165	11	1155	66	61	13	25	41	5	229
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	9.1	39.7	39.7	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	13.3%	58.0%	58.0%	44.7%	44.7%	44.7%	42.0%	42.0%	42.0%	42.0%	42.0%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	52.9	55.7	55.7	25.2	25.2	25.2	8.8	8.8	8.8	8.8	8.8	68.4
Actuated g/C Ratio	0.77	0.81	0.81	0.37	0.37	0.37	0.13	0.13	0.13	0.13	0.13	1.00
v/c Ratio	0.60	0.60	0.12	0.09	0.88	0.10	0.34	0.05	0.08	0.23	0.02	0.14
Control Delay	17.2	5.8	1.8	16.7	29.6	0.4	31.6	25.3	0.5	29.0	24.6	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	5.8	1.8	16.7	29.6	0.4	31.6	25.3	0.5	29.0	24.6	0.2
LOS	B	A	A	B	C	A	C	C	A	C	C	A
Approach Delay		7.6			27.9			22.9			4.9	
Approach LOS		A			C			C			A	
Queue Length 50th (m)	29.3	51.0	1.8	0.9	70.8	0.0	7.3	1.5	0.0	4.8	0.6	0.0
Queue Length 95th (m)	#79.1	87.2	2.5	2.8	#100.8	0.0	15.1	4.4	0.0	10.8	3.2	0.0
Internal Link Dist (m)		260.0			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	694	2912	1322	121	1320	678	477	633	630	474	633	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.60	0.12	0.09	0.88	0.10	0.13	0.02	0.04	0.09	0.01	0.14

01-03-2018
NS

Synchro 10 Report
Page 15

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Future Base
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	68.4
Actuated Cycle Length:	68.4
Offset:	30.8 (45%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.88
Intersection Signal Delay:	14.2
Intersection LOS:	B
Intersection Capacity Utilization:	89.1%
ICU Level of Service:	E
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road

← Ø2	→ Ø4 (R)
28.7 s	39.7 s
↓ Ø6	↖ Ø7
28.7 s	9.1 s
	↗ Ø8 (R)
	30.6 s

01-03-2018
NS

Synchro 10 Report
Page 16

Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Future Base
Timing Plan: PM Peak

	↖	→	←	↗	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Volume (vph)	144	1070	426	87	204	150
Future Volume (vph)	144	1070	426	87	204	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.5			7.5		
Satd. Flow (prot)	1789	1883	1883	1601	1726	0
Flt Permitted	0.351				0.972	
Satd. Flow (perm)	661	1883	1883	1601	1726	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				95	39	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	437.4		116.7	
Travel Time (s)		37.0	32.8		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	1163	463	95	385	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	11.0	63.0	52.0	52.0	27.0	
Total Split (%)	12.2%	70.0%	57.8%	57.8%	30.0%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	
Act Effct Green (s)	54.9	54.9	43.7	43.7	20.4	
Actuated g/C Ratio	0.64	0.64	0.51	0.51	0.24	
v/c Ratio	0.31	0.96	0.48	0.11	0.87	
Control Delay	7.9	34.3	15.6	2.8	50.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.9	34.3	15.6	2.8	50.7	
LOS	A	C	B	A	D	
Approach Delay		31.2	13.4		50.7	
Approach LOS		C	B		D	
Queue Length 50th (m)	9.4	166.8	48.1	0.0	57.7	
Queue Length 95th (m)	16.5	#275.9	72.0	6.7	#105.6	
Internal Link Dist (m)		469.5	413.4		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	505	1295	1050	934	479	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.31	0.90	0.44	0.10	0.80	

01-03-2018
NS

Synchro 10 Report
Page 17

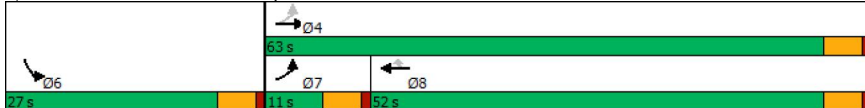
Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Future Base
Timing Plan: PM Peak

Intersection Summary

















Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 85.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 30.1	Intersection LOS: C
Intersection Capacity Utilization 85.1%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7050: Dollarton Hwy & Collector A



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton Road

Future Base
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	203	25	10	248	84	2	0	47	82	0	158
Future Volume (Veh/h)	145	203	25	10	248	84	2	0	47	82	0	158
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	223	50	22	285	125	4	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage veh												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	410			273			1294	1064	248	1088	1026	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	410			273			1294	1064	248	1088	1026	348
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			98			94	100	89	16	100	58
cM capacity (veh/h)	1154			1302			71	186	796	149	194	696
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	454	432	91	419								
Volume Left	181	22	4	126								
Volume Right	50	125	87	293								
cSH	1154	1302	549	331								
Volume to Capacity	0.16	0.02	0.17	1.26								
Queue Length 95th (m)	4.2	0.4	4.5	145.6								
Control Delay (s)	4.4	0.6	12.9	174.1								
Lane LOS	A	A	B	F								
Approach Delay (s)	4.4	0.6	12.9	174.1								
Approach LOS			B	F								
Intersection Summary												
Average Delay				54.7								
Intersection Capacity Utilization				69.9%	ICU Level of Service			C				
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton/Old Dollarton Road & Front St

Future Base
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	79	59	319	155	171	211
Future Volume (Veh/h)	79	59	319	155	171	211
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	88	66	354	172	190	234
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.85	0.85			0.85	
vC, conflicting volume	1054	440			526	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	975	252			354	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	90			81	
cM capacity (veh/h)	193	668			1024	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	154	526	424			
Volume Left	88	0	190			
Volume Right	66	172	0			
cSH	278	1700	1024			
Volume to Capacity	0.55	0.31	0.19			
Queue Length 95th (m)	23.6	0.0	5.2			
Control Delay (s)	33.0	0.0	5.3			
Lane LOS	D		A			
Approach Delay (s)	33.0	0.0	5.3			
Approach LOS	D					
Intersection Summary						
Average Delay		6.6				
Intersection Capacity Utilization		64.8%		ICU Level of Service	C	
Analysis Period (min)		15				













HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive & Windridge Dr

Future Base
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	27	21	1014	55	25	764
Future Volume (Veh/h)	27	21	1014	55	25	764
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.60	0.60	0.80	0.80	0.95	0.95
Hourly flow rate (vph)	45	35	1268	69	26	804
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			264		113	
pX, platoon unblocked	0.67	0.57			0.57	
vC, conflicting volume	2158	1302			1337	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1836	1156			1216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	12	75			92	
cM capacity (veh/h)	51	137			329	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	80	1337	830			
Volume Left	45	0	26			
Volume Right	35	69	0			
cSH	71	1700	329			
Volume to Capacity	1.13	0.79	0.08			
Queue Length 95th (m)	46.2	0.0	1.9			
Control Delay (s)	248.7	0.0	3.0			
Lane LOS	F		A			
Approach Delay (s)	248.7	0.0	3.0			
Approach LOS	F					
Intersection Summary						
Average Delay		10.0				
Intersection Capacity Utilization		70.4%		ICU Level of Service	C	
Analysis Period (min)		15				













HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Future Base
Timing Plan: PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	81	73	685	219	157
Future Volume (Veh/h)	137	81	73	685	219	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	761	243	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	872	208	417			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	872	208	417			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	44	89	93			
cM capacity (veh/h)	269	797	1138			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	335	507	162	255	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	174	
cSH	357	1138	1700	1700	1700	
Volume to Capacity	0.68	0.07	0.30	0.10	0.15	
Queue Length 95th (m)	36.1	1.7	0.0	0.0	0.0	
Control Delay (s)	33.9	2.6	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	33.9	1.0		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay		6.0				
Intersection Capacity Utilization		54.7%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton Road

Future Base
Timing Plan: PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	20	18	18	42	6
Future Volume (Veh/h)	44	20	18	18	42	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	22	20	20	47	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			71		120	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		120	60
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	99
cM capacity (veh/h)			1529		864	1005
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	71	40	54			
Volume Left	0	20	47			
Volume Right	22	0	7			
cSH	1700	1529	880			
Volume to Capacity	0.04	0.01	0.06			
Queue Length 95th (m)	0.0	0.3	1.5			
Control Delay (s)	0.0	3.7	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.7	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay		4.0				
Intersection Capacity Utilization		18.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Future Base
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	12	2088	8	24	1223	7	1	0	22	8	0	14
Future Volume (Veh/h)	12	2088	8	24	1223	7	1	0	22	8	0	14
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70
Hourly flow rate (vph)	13	2221	9	27	1359	8	2	0	44	11	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None	None	None	None	None	None	None	None	None	None	None	None
Median storage veh												
Upstream signal (m)												
pX, platoon unblocked	0.70						0.70	0.70		0.70	0.70	0.70
vC, conflicting volume	1367			2230			3005	3672	1115	2598	3673	684
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	680			2230			3007	3956	1115	2428	3956	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			88			44	100	78	0	100	97
cM capacity (veh/h)	639			230			4	2	202	8	2	763
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	13	1481	749	27	906	461	46	31				
Volume Left	13	0	0	27	0	0	2	11				
Volume Right	0	0	9	0	0	8	44	20				
cSH	639	1700	1700	230	1700	1700	59	23				
Volume to Capacity	0.02	0.87	0.44	0.12	0.53	0.27	0.78	1.37				
Queue Length 95th (m)	0.5	0.0	0.0	3.0	0.0	0.0	25.9	30.2				
Control Delay (s)	10.7	0.0	0.0	22.8	0.0	0.0	169.1	572.7				
Lane LOS	B			C			F	F				
Approach Delay (s)	0.1			0.4			169.1	572.7				
Approach LOS							F	F				
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			69.5%				ICU Level of Service	C				
Analysis Period (min)			15									

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	204	1027	114	96	1487	10	94	27	60	18	62	722
Future Volume (vph)	204	1027	114	96	1487	10	94	27	60	18	62	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.080			0.192				0.728			0.929	
Satd. Flow (perm)	135	3341	0	365	3507	0	0	1281	1408	0	1785	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			1				69			235
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	1254	0	100	1559	0	0	127	63	0	101	903
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	17.0	67.0		50.0	50.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	15.5%	60.9%		45.5%	45.5%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	12.0	62.0		45.0	45.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	63.0	63.0		46.1	46.1		39.0	39.0		39.0	39.0	
Actuated g/C Ratio	0.57	0.57		0.42	0.42		0.35	0.35		0.35	0.35	
v/c Ratio	0.90	0.65		0.66	1.06		0.28	0.12		0.16	1.26	
Control Delay	64.6	17.8		49.1	73.0		27.6	5.7		25.2	151.3	
Queue Delay	13.4	49.9		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	78.0	67.7		49.1	73.0		27.6	5.7		25.2	151.3	
LOS	E	E		D	E		C	A		C	F	
Approach Delay		69.3			71.6			20.3			138.6	
Approach LOS		E			E			C			F	
Intersection Summary												
Area Type:		Other										
Cycle Length: 110												

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1

Timing Plan: AM Peak

Actuated Cycle Length: 110

Natural Cycle: 140

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 84.1

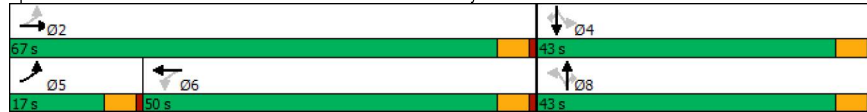
Intersection LOS: F

Intersection Capacity Utilization 102.8%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 1

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	36	833	270	661	1573	36	238	55	393	96	92	115
Future Volume (vph)	36	833	270	661	1573	36	238	55	393	96	92	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1727	0
Flt Permitted	0.080			0.950			0.190			0.712		
Satd. Flow (perm)	151	3446	0	3471	3579	1601	358	1883	1601	1341	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33				170			473		38	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			193.1			71.4			172.4	
Travel Time (s)		39.4			14.5			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	734	1748	40	298	69	491	120	259	0
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	53.0		36.2	77.8	77.8	25.4	40.8		15.0	30.4	
Total Split (%)	7.9%	36.6%		25.0%	53.7%	53.7%	17.5%	28.1%		10.3%	21.0%	
Maximum Green (s)	5.0	47.5		29.8	72.3	72.3	19.0	34.4		8.6	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	58.0	50.4		33.0	78.2	76.7	45.1	30.7	145.0	38.0	24.1	
Actuated g/C Ratio	0.40	0.35		0.23	0.54	0.53	0.31	0.21	1.00	0.26	0.17	
v/c Ratio	0.28	1.00		0.93	0.91	0.04	0.93	0.17	0.31	0.30	0.81	
Control Delay	22.2	72.5		73.5	39.1	0.1	74.8	44.7	0.5	35.9	69.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.2	72.5		73.5	39.1	0.1	74.8	44.7	0.5	35.9	69.2	
LOS	C	E		E	D	A	E	D	A	D	E	
Approach Delay		70.9			48.5			29.9			58.7	
Approach LOS		E			D			C			E	
Intersection Summary												
Area Type:	Other											
Cycle Length:	145											
Actuated Cycle Length:	145											

Lanes, Volumes, Timings

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 1

Timing Plan: AM Peak

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 51.8

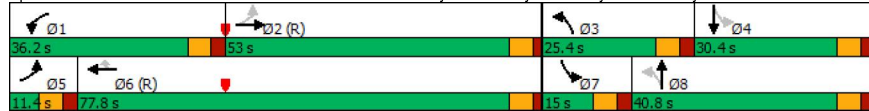
Intersection LOS: D

Intersection Capacity Utilization 88.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton

Option 1

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔	↔		↔		↔	↔			↔	↔
Traffic Volume (vph)	254	10	46	45	22	82	25	339	24	51	627	418
Future Volume (vph)	254	10	46	45	22	82	25	339	24	51	627	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1865	0	0	1876	1601
Flt Permitted		0.600			0.790		0.145				0.946	
Satd. Flow (perm)	0	1130	1601	0	1376	0	273	1865	0	0	1782	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			8				213
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	66	0	212	0	28	404	0	0	745	459
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	55.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		22.0	22.0		22.0		27.7	27.7			27.7	27.7
Actuated g/C Ratio		0.38	0.38		0.38		0.48	0.48			0.48	0.48
v/c Ratio		0.88	0.10		0.36		0.22	0.45			0.87	0.52
Control Delay		42.1	4.3		8.3		14.1	11.9			27.6	7.9
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		42.1	4.3		8.3		14.1	11.9			27.6	7.9
LOS		D	A		A		B	B			C	A
Approach Delay		36.5			8.3			12.1			20.1	
Approach LOS		D			A			B			C	
Intersection Summary												
Area Type:		Other										
Cycle Length: 60												
Actuated Cycle Length: 57.8												

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton

Option 1

Timing Plan: AM Peak

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 20.6





Intersection LOS: C

Intersection Capacity Utilization 86.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3030: Riverside Drive & Old Dollarton









 Ø2	 Ø4
27 s	33 s
 Ø6	 Ø8
27 s	33 s

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	775	16	46	1116	92	81	47	34	174	68	349
Future Volume (vph)	231	775	16	46	1116	92	81	47	34	174	68	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1706	3387	0	1825	3411	0	0	1696	1396	0	1626	1570
Flt Permitted	0.091			0.326				0.502			0.623	
Satd. Flow (perm)	163	3387	0	626	3411	0	0	878	1396	0	1050	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			12				85			314
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	870	0	51	1342	0	0	160	43	0	269	388
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	19.0	61.0		42.0	42.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	21.1%	67.8%		46.7%	46.7%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	14.0	56.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.0	57.0		40.1	40.1		24.5	24.5		24.5	24.5	
Actuated g/C Ratio	0.64	0.64		0.45	0.45		0.27	0.27		0.27	0.27	
v/c Ratio	0.78	0.40		0.18	0.88		0.67	0.10		0.94	0.59	
Control Delay	35.8	8.7		18.4	31.1		44.4	1.6		73.6	10.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	35.8	8.7		18.4	31.1		44.4	1.6		73.6	10.3	
LOS	D	A		B	C		D	A		E	B	
Approach Delay		14.8			30.6			35.4			36.2	
Approach LOS		B			C			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 90

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1

Timing Plan: AM Peak

Actuated Cycle Length: 89.5

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 26.7

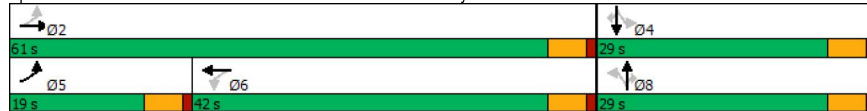
Intersection LOS: C

Intersection Capacity Utilization 76.5%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	26	787	109	20	1202	15	81	1	11	28	1	33
Future Volume (vph)	26	787	109	20	1202	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3514	0	1789	3571	0	0	1775	0	0	1797	1601
Flt Permitted	0.187			0.281				0.719			0.772	
Satd. Flow (perm)	352	3514	0	529	3571	0	0	1333	0	0	1454	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			3			12				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	963	0	21	1268	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	31.5	31.5		31.5	31.5			9.6			9.6	9.6
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.23			0.23	0.23
v/c Ratio	0.11	0.36		0.05	0.47			0.32			0.15	0.14
Control Delay	5.8	4.3		4.8	5.2			15.6			14.6	8.7
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	5.8	4.3		4.8	5.2			15.6			14.6	8.7
LOS	A	A		A	A			B			B	A
Approach Delay		4.4			5.2			15.6			11.5	
Approach LOS		A			A			B			B	
Intersection Summary												
Area Type:	Other											
Cycle Length:	60											
Actuated Cycle Length:	41.9											

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Option 1
Timing Plan: AM Peak

Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 5.6
Intersection Capacity Utilization 55.4%
Analysis Period (min) 15

Intersection LOS: A
ICU Level of Service B

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1
Timing Plan: AM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↶↷	↶↷	↰	↰	↰
Traffic Volume (vph)	309	516	1083	182	66	154
Future Volume (vph)	309	516	1083	182	66	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.121				0.950	
Satd. Flow (perm)	228	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				171		171
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	343	573	1203	202	73	171
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	17.0	51.0	34.0	34.0	29.0	29.0
Total Split (%)	21.3%	63.8%	42.5%	42.5%	36.3%	36.3%
Maximum Green (s)	12.0	46.0	29.0	29.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	44.9	44.9	27.9	27.9	8.3	8.3
Actuated g/C Ratio	0.71	0.71	0.44	0.44	0.13	0.13
v/c Ratio	0.75	0.23	0.76	0.25	0.31	0.48
Control Delay	24.2	3.5	18.9	4.0	29.0	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	3.5	18.9	4.0	29.0	9.8
LOS	C	A	B	A	C	A
Approach Delay		11.3	16.7		15.5	
Approach LOS		B	B		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 63.2						

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1
Timing Plan: AM Peak

Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 14.7	Intersection LOS: B
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩↩	↩	↩	↩↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	179	1144	39	7	1872	52	24	9	22	77	13	435
Future Volume (vph)	179	1144	39	7	1872	52	24	9	22	77	13	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.060			0.225			0.748			0.750		
Satd. Flow (perm)	113	3579	1601	424	3579	1601	1409	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			40			96			95			335
Link Speed (k/h)		60			60			48				48
Link Distance (m)		99.6			116.0			119.3				142.6
Travel Time (s)		6.0			7.0			8.9				10.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1243	42	8	2035	57	30	11	28	86	14	483
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	11.4	71.3	71.3	59.9	59.9	59.9	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	11.4%	71.3%	71.3%	59.9%	59.9%	59.9%	28.7%	28.7%	28.7%	28.7%	28.7%	
Maximum Green (s)	5.3	65.7	65.7	54.3	54.3	54.3	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	81.3	82.1	82.1	62.9	62.9	62.9	13.2	13.2	13.2	13.2	13.2	100.0
Actuated g/C Ratio	0.81	0.82	0.82	0.63	0.63	0.63	0.13	0.13	0.13	0.13	0.13	1.00
v/c Ratio	0.59	0.42	0.03	0.03	0.90	0.05	0.16	0.04	0.10	0.46	0.06	0.30
Control Delay	26.7	4.0	1.2	10.3	25.7	0.8	38.8	35.9	0.6	47.3	36.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	4.0	1.2	10.3	25.7	0.8	38.8	35.9	0.6	47.3	36.2	0.5
LOS	C	A	A	B	C	A	D	D	A	D	D	A
Approach Delay		6.9			25.0			22.8			8.2	
Approach LOS		A			C			C			A	
Intersection Summary												
Area Type: Other												
Cycle Length: 100												
Actuated Cycle Length: 100												

01-03-2018
NS

Synchro 10 Report
Page 15

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1
Timing Plan: AM Peak

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 16.3






Intersection LOS: B

Intersection Capacity Utilization 82.6%

ICU Level of Service E













Analysis Period (min) 15

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road

 Ø2	 Ø4 (R)
28.7 s	71.3 s
 Ø6	 Ø7
28.7 s	11.4 s
	 Ø8 (R)
	59.9 s

Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Option 1
Timing Plan: AM Peak

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	103	480	1215	61	22	51
Future Volume (vph)	103	480	1215	61	22	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.116				0.950	
Satd. Flow (perm)	218	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				66		55
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	181.9		116.7	
Travel Time (s)		37.0	13.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	522	1321	66	24	55
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	10.0	46.0	36.0	36.0	24.0	24.0
Total Split (%)	14.3%	65.7%	51.4%	51.4%	34.3%	34.3%
Maximum Green (s)	5.0	41.0	31.0	31.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	37.2	37.2	29.6	29.6	19.2	19.2
Actuated g/C Ratio	0.56	0.56	0.45	0.45	0.29	0.29
v/c Ratio	0.46	0.26	0.83	0.09	0.05	0.11
Control Delay	12.9	7.7	22.6	3.8	19.3	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	7.7	22.6	3.8	19.3	6.9
LOS	B	A	C	A	B	A
Approach Delay		8.6	21.7		10.6	
Approach LOS		A	C		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 70						
Actuated Cycle Length: 66.5						

Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Option 1
Timing Plan: AM Peak

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 17.3

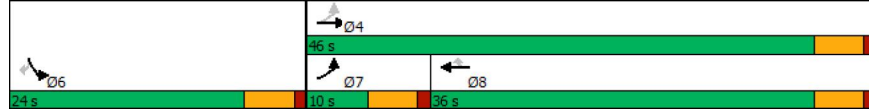
Intersection LOS: B

Intersection Capacity Utilization 57.6%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Collector A



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton

Option 1
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	97	127	5	0	432	88	0	0	44	94	0	181
Future Volume (Veh/h)	97	127	5	0	432	88	0	0	44	94	0	181
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	121	159	6	0	465	95	0	0	55	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		235			201							
pX, platoon unblocked												
vC, conflicting volume	560			165			1142	964	162	972	920	512
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560			165			1142	964	162	972	920	512
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	88			100			100	100	94	40	100	60
cM capacity (veh/h)	987			1245			97	226	888	197	240	560
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	286	560	55	344								
Volume Left	121	0	0	118								
Volume Right	6	95	55	226								
cSH	987	1245	888	343								
Volume to Capacity	0.12	0.00	0.06	1.00								
Queue Length 95th (m)	3.2	0.0	1.5	86.7								
Control Delay (s)	4.6	0.0	9.3	84.8								
Lane LOS	A		A	F								
Approach Delay (s)	4.6	0.0	9.3	84.8								
Approach LOS			A	F								
Intersection Summary												
Average Delay			24.9									
Intersection Capacity Utilization			73.4%		ICU Level of Service				D			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 1
Timing Plan: AM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↗
Traffic Volume (veh/h)	178	31	175	71	52	551
Future Volume (Veh/h)	178	31	175	71	52	551
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	34	194	79	58	612
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			98		338	
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	962	234			273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	928	155			197	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	26	96			96	
cM capacity (veh/h)	267	839			1295	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	273	670			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	297	1700	1295			
Volume to Capacity	0.78	0.16	0.04			
Queue Length 95th (m)	46.4	0.0	1.1			
Control Delay (s)	49.6	0.0	1.2			
Lane LOS	E		A			
Approach Delay (s)	49.6	0.0	1.2			
Approach LOS	E					
Intersection Summary						
Average Delay		10.5				
Intersection Capacity Utilization		67.2%	ICU Level of Service	C		
Analysis Period (min)		15				

01-03-2018
NS

Synchro 10 Report
Page 2

HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive & Windridge Dr

Option 1
Timing Plan: AM Peak

	↖	→	↘	↖	←	↖	↗	↑	↗	↘	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↖			↗			↗	↘
Traffic Volume (veh/h)	10	0	35	73	0	29	0	649	18	12	1015	0
Future Volume (Veh/h)	10	0	35	73	0	29	0	649	18	12	1015	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.92	0.92
Hourly flow rate (vph)	11	0	39	81	0	32	0	721	20	13	1128	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								264			113	
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	1917	1895	1128	1924	1885	731	1128			741		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1936	1913	1128	1944	1903	695	1128			706		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	75	100	84	0	100	92	100			98		
cM capacity (veh/h)	43	64	249	39	65	422	619			853		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	113	741	1141								
Volume Left	11	81	0	13								
Volume Right	39	32	20	0								
cSH	122	52	1700	853								
Volume to Capacity	0.41	2.15	0.44	0.02								
Queue Length 95th (m)	13.3	86.0	0.0	0.4								
Control Delay (s)	53.9	699.4	0.0	0.5								
Lane LOS	F	F		A								
Approach Delay (s)	53.9	699.4	0.0	0.5								
Approach LOS	F	F										
Intersection Summary												
Average Delay			40.3									
Intersection Capacity Utilization			82.1%	ICU Level of Service	E							
Analysis Period (min)			15									

01-03-2018
NS

Synchro 10 Report
Page 3

HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Option 1
Timing Plan: AM Peak

	EBL	EBR	NBL	NBT	SBT	SBR
Movement						
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (veh/h)	49	38	38	324	529	157
Future Volume (Veh/h)	49	38	38	324	529	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	41	41	352	575	171
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	918	373	746			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	918	373	746			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	93	95			
cM capacity (veh/h)	258	624	858			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	94	158	235	383	363	
Volume Left	53	41	0	0	0	
Volume Right	41	0	0	0	171	
cSH	346	858	1700	1700	1700	
Volume to Capacity	0.27	0.05	0.14	0.23	0.21	
Queue Length 95th (m)	8.2	1.1	0.0	0.0	0.0	
Control Delay (s)	19.2	2.8	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	19.2	1.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay		1.8				
Intersection Capacity Utilization		44.7%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 1
Timing Plan: AM Peak

	EBT	EBR	WBL	WBT	NBL	NBR
Movement						
Lane Configurations	↔	↔	↔	↕	↕	↔
Traffic Volume (veh/h)	17	25	27	16	21	13
Future Volume (Veh/h)	17	25	27	16	21	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	28	30	18	23	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			47		111	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		111	33
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		97	99
cM capacity (veh/h)			1560		869	1041
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	47	48	37			
Volume Left	0	30	23			
Volume Right	28	0	14			
cSH	1700	1560	927			
Volume to Capacity	0.03	0.02	0.04			
Queue Length 95th (m)	0.0	0.4	0.9			
Control Delay (s)	0.0	4.6	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.6	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay		4.2				
Intersection Capacity Utilization		19.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 1
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	1	1318	6	49	2274	7	1	0	33	12	0	6
Future Volume (Veh/h)	1	1318	6	49	2274	7	1	0	33	12	0	6
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
Grade	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50
Hourly flow rate (vph)	1	1464	7	54	2527	8	1	0	41	24	0	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None	None	None	None	None	None	None	None	None	None	None	None
Median storage veh												
Upstream signal (m)					284							
pX, platoon unblocked	0.42						0.42	0.42		0.42	0.42	0.42
vC, conflicting volume	2535			1471			2853	4112	736	3414	4112	1268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1896			1471			2651	5642	736	3983	5641	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			88			76	100	89	0	100	97
cM capacity (veh/h)	131			454			4	0	362	0	0	457
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	1	976	495	54	1685	850	42	36				
Volume Left	1	0	0	54	0	0	1	24				
Volume Right	0	0	7	0	0	8	41	12				
cSH	131	1700	1700	454	1700	1700	118	0				
Volume to Capacity	0.01	0.57	0.29	0.12	0.99	0.50	0.36	73.47				
Queue Length 95th (m)	0.2	0.0	0.0	3.1	0.0	0.0	10.9	Err				
Control Delay (s)	32.7	0.0	0.0	14.0	0.0	0.0	51.5	Err				
Lane LOS	D			B			F	F				
Approach Delay (s)	0.0			0.3			51.5	Err				
Approach LOS							F	F				
Intersection Summary												
Average Delay				87.7								
Intersection Capacity Utilization				77.4%			ICU Level of Service		D			
Analysis Period (min)				15								

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	467	1552	46	37	1109	15	138	19	55	13	19	291
Future Volume (vph)	467	1552	46	37	1109	15	138	19	55	13	19	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3553	0	1690	3557	0	0	1778	1526	0	1883	1570
Flt Permitted	0.083			0.144				0.727			0.867	
Satd. Flow (perm)	156	3553	0	256	3557	0	0	1349	1526	0	1666	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			1				69			323
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.7	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	492	1682	0	44	1323	0	0	197	69	0	35	323
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	43.0	80.0		37.0	37.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	39.1%	72.7%		33.6%	33.6%		27.3%	27.3%	27.3%	27.3%	27.3%	27.3%
Maximum Green (s)	38.0	75.0		32.0	32.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0	-1.0		-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	76.2	76.2		44.2	44.2		20.5	20.5		20.5	20.5	
Actuated g/C Ratio	0.73	0.73		0.42	0.42		0.20	0.20		0.20	0.20	
v/c Ratio	0.90	0.65		0.41	0.88		0.75	0.19		0.11	0.57	
Control Delay	46.7	9.5		43.6	38.9		57.3	9.6		34.4	8.2	
Queue Delay	33.0	48.3		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	79.7	57.8		43.6	38.9		57.3	9.6		34.4	8.2	
LOS	E	E		D	D		E	A		C	A	
Approach Delay		62.8			39.0			44.9			10.8	
Approach LOS		E			D			D			B	
Intersection Summary												
Area Type:							Other					
Cycle Length: 110												

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1

Timing Plan: PM Peak

Actuated Cycle Length: 104.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 49.4

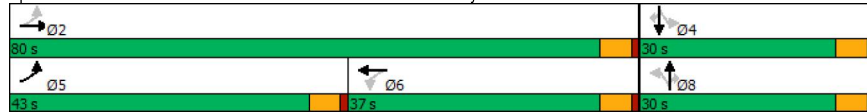
Intersection LOS: D

Intersection Capacity Utilization 82.3%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 1

Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	99	1342	322	404	783	49	198	108	726	35	64	71
Future Volume (vph)	99	1342	322	404	783	49	198	108	726	35	64	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1735	0
Flt Permitted	0.306			0.049			0.306			0.655		
Satd. Flow (perm)	576	3475	0	179	3579	1601	576	1883	1601	1234	1735	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				122			290		34	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			193.1			71.4			172.4	
Travel Time (s)		39.4			14.5			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	449	870	54	248	135	908	44	169	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	12.4	81.5		18.2	87.3	87.3	14.8	34.9		10.4	30.5	
Total Split (%)	8.6%	56.2%		12.6%	60.2%	60.2%	10.2%	24.1%		7.2%	21.0%	
Maximum Green (s)	6.0	76.0		11.8	81.8	81.8	8.4	28.5		4.0	24.1	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	88.5	78.8		103.0	89.3	87.8	34.0	25.6	145.0	25.6	19.2	
Actuated g/C Ratio	0.61	0.54		0.71	0.62	0.61	0.23	0.18	1.00	0.18	0.13	
v/c Ratio	0.28	1.07		0.76	0.39	0.05	1.10	0.41	0.57	0.18	0.65	
Control Delay	9.7	73.6		48.4	15.4	0.1	137.2	56.6	1.5	43.5	58.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.7	73.6		48.4	15.4	0.1	137.2	56.6	1.5	43.5	58.8	
LOS	A	E		D	B	A	F	E	A	D	E	
Approach Delay		70.0			25.6			33.3			55.6	
Approach LOS		E			C			C			E	
Intersection Summary												
Area Type:	Other											
Cycle Length:	145											
Actuated Cycle Length:	145											

Lanes, Volumes, Timings

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 1

Timing Plan: PM Peak

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.10

Intersection Signal Delay: 47.8

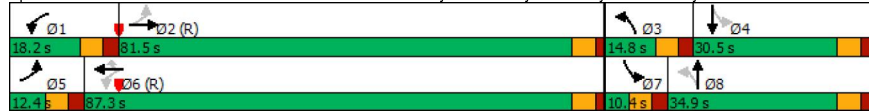
Intersection LOS: D

Intersection Capacity Utilization 90.9%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton

Option 1

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔			↔	↔
Traffic Volume (vph)	268	30	36	28	18	80	43	727	70	77	354	340
Future Volume (vph)	268	30	36	28	18	80	43	727	70	77	354	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	0	1802	1601	0	1703	0	1789	1859	0	0	1866	1601
Flt Permitted		0.663			0.855		0.399				0.474	
Satd. Flow (perm)	0	1249	1601	0	1472	0	751	1859	0	0	893	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			12				291
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	45	0	148	0	46	847	0	0	479	378
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	38.5%		61.5%	61.5%		61.5%	61.5%	61.5%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0			-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		21.0	21.0		21.0		35.2	35.2			35.2	35.2
Actuated g/C Ratio		0.33	0.33		0.33		0.55	0.55			0.55	0.55
v/c Ratio		0.92	0.08		0.27		0.11	0.83			0.98	0.37
Control Delay		52.6	6.0		8.6		7.8	20.8			54.1	3.2
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		52.6	6.0		8.6		7.8	20.8			54.1	3.2
LOS		D	A		A		A	C			D	A
Approach Delay		47.6			8.6			20.1			31.7	
Approach LOS		D			A			C			C	
Intersection Summary												
Area Type:	Other											
Cycle Length:	65											
Actuated Cycle Length:	64.2											

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton

Option 1

Timing Plan: PM Peak

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.98

Intersection Signal Delay: 28.6

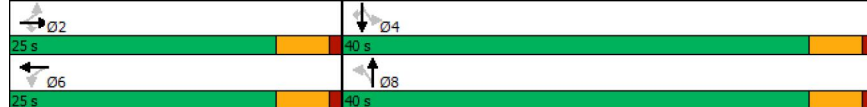
Intersection LOS: C

Intersection Capacity Utilization 98.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	557	1017	9	25	875	172	60	44	51	144	28	200
Future Volume (vph)	557	1017	9	25	875	172	60	44	51	144	28	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1807	3602	0	1825	3412	0	0	1794	1633	0	1728	1617
Flt Permitted	0.121			0.249				0.605			0.667	
Satd. Flow (perm)	230	3602	0	478	3412	0	0	1116	1633	0	1201	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			27				85			286
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	619	1140	0	28	1163	0	0	116	57	0	246	286
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	28.0	61.0		33.0	33.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	31.1%	67.8%		36.7%	36.7%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	23.0	56.0		28.0	28.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.1	57.1		29.1	29.1		21.9	21.9		21.9	21.9	
Actuated g/C Ratio	0.66	0.66		0.33	0.33		0.25	0.25		0.25	0.25	
v/c Ratio	1.06	0.48		0.18	1.01		0.41	0.12		0.82	0.46	
Control Delay	78.2	8.8		25.5	58.1		31.9	3.3		52.8	6.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	78.2	8.8		25.5	58.1		31.9	3.3		52.8	6.0	
LOS	E	A		C	E		C	A		D	A	
Approach Delay		33.2			57.3			22.4			27.6	
Approach LOS		C			E			C			C	

Intersection Summary

Area Type: Other

Cycle Length: 90

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1

Timing Plan: PM Peak

Actuated Cycle Length: 87

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 39.7

Intersection LOS: D

Intersection Capacity Utilization 86.6%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶	↷	↰	↶	↷	↰	↶	↷	↰	↶	↷
Traffic Volume (vph)	24	1291	24	8	781	23	176	4	9	31	0	17
Future Volume (vph)	24	1291	24	8	781	23	176	4	9	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3568	0	1789	3564	0	0	1788	0	0	1789	1601
Flt Permitted	0.286			0.136				0.712			0.737	
Satd. Flow (perm)	539	3568	0	256	3564	0	0	1333	0	0	1388	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			5				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1429	0	9	894	0	0	210	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0			-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	30.4	30.4		30.4	30.4			13.5			13.5	13.5
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.28			0.28	0.28
v/c Ratio	0.08	0.64		0.06	0.40			0.56			0.10	0.04
Control Delay	7.5	10.5		8.0	7.4			20.4			12.9	3.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	7.5	10.5		8.0	7.4			20.4			12.9	3.4
LOS	A	B		A	A			C			B	A
Approach Delay		10.4			7.5			20.4			9.6	
Approach LOS		B			A			C			A	
Intersection Summary												
Area Type:		Other										
Cycle Length:		60										
Actuated Cycle Length:		48.3										

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Option 1
Timing Plan: PM Peak

Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 10.2
Intersection Capacity Utilization 60.3%
Analysis Period (min) 15

Intersection LOS: B
ICU Level of Service B

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1
Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↗
Traffic Volume (vph)	240	1092	504	84	197	307
Future Volume (vph)	240	1092	504	84	197	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0			15.0		
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.447				0.950	
Satd. Flow (perm)	842	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				91		334
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	261	1187	548	91	214	334
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	30.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	53.0	53.0	53.0	53.0	27.0	27.0
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.8%	33.8%
Maximum Green (s)	48.0	48.0	48.0	48.0	22.0	22.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	30.7	30.7	30.7	30.7	12.4	12.4
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.23	0.23
v/c Ratio	0.54	0.58	0.27	0.10	0.52	0.53
Control Delay	13.0	9.0	6.5	1.9	24.1	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.0	9.0	6.5	1.9	24.1	6.4
LOS	B	A	A	A	C	A
Approach Delay		9.7	5.9		13.3	
Approach LOS		A	A		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 80						
Actuated Cycle Length: 53.6						

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1
Timing Plan: PM Peak

Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 9.5	Intersection LOS: A
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	412	1615	89	7	1005	56	51	9	17	33	5	197
Future Volume (vph)	412	1615	89	7	1005	56	51	9	17	33	5	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.106			0.126			0.754			0.749		
Satd. Flow (perm)	200	3579	1601	237	3579	1601	1420	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			107			105			229
Link Speed (k/h)		60			60			48				48
Link Distance (m)		99.5			125.4			116.5				145.4
Travel Time (s)		6.0			7.5			8.7				10.9
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1737	165	11	1155	66	61	13	25	41	5	229
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	24.0	61.3	61.3	37.3	37.3	37.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	26.7%	68.1%	68.1%	41.4%	41.4%	41.4%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	17.9	55.7	55.7	31.7	31.7	31.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	55.2	55.7	55.7	31.8	31.8	31.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.62	0.62	0.35	0.35	0.35	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.95	0.78	0.16	0.13	0.91	0.10	0.17	0.03	0.05	0.11	0.01	0.14
Control Delay	58.1	16.0	3.3	24.9	40.3	1.8	27.6	25.4	0.2	26.8	25.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	16.0	3.3	24.9	40.3	1.8	27.6	25.4	0.2	26.8	25.2	0.2
LOS	E	B	A	C	D	A	C	C	A	C	C	A
Approach Delay		22.6			38.1			20.4			4.6	
Approach LOS		C			D			C			A	
Intersection Summary												
Area Type: Other												
Cycle Length: 90												
Actuated Cycle Length: 90												

01-03-2018
NS

Synchro 10 Report
Page 15

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1
Timing Plan: PM Peak

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 26.2

Intersection LOS: C

Intersection Capacity Utilization 89.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Option 1
Timing Plan: PM Peak

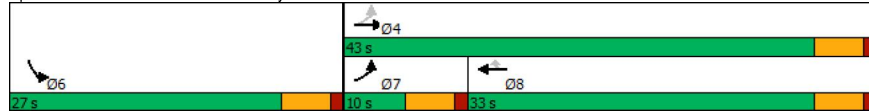
	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	80	1209	485	28	66	102
Future Volume (vph)	80	1209	485	28	66	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1696	0
Flt Permitted	0.386				0.981	
Satd. Flow (perm)	727	3579	3579	1601	1696	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				30	111	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	181.9		116.7	
Travel Time (s)		37.0	13.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	1314	527	30	183	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	10.0	43.0	33.0	33.0	27.0	
Total Split (%)	14.3%	61.4%	47.1%	47.1%	38.6%	
Maximum Green (s)	5.0	38.0	28.0	28.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	Min	None	
Walk Time (s)		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)		0	0	0	0	
Act Effct Green (s)	33.2	33.2	27.5	27.5	8.7	
Actuated g/C Ratio	0.64	0.64	0.53	0.53	0.17	
v/c Ratio	0.15	0.58	0.28	0.03	0.49	
Control Delay	4.7	6.9	8.7	4.2	13.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.7	6.9	8.7	4.2	13.8	
LOS	A	A	A	A	B	
Approach Delay		6.7	8.5		13.8	
Approach LOS		A	A		B	
Intersection Summary						
Area Type:	Other					
Cycle Length: 70						
Actuated Cycle Length: 52						

Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Option 1
Timing Plan: PM Peak

Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.58	
Intersection Signal Delay: 7.8	Intersection LOS: A
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 7050: Dollarton Hwy & Collector A



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton

Option 1
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations												
Traffic Volume (veh/h)	145	203	25	0	248	84	0	0	47	82	0	158
Future Volume (Veh/h)	145	203	25	0	248	84	0	0	47	82	0	158
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	223	50	0	285	125	0	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		235			201							
pX, platoon unblocked				0.99			0.99	0.99	0.99	0.99	0.99	
vC, conflicting volume	410			273			1250	1020	248	1044	982	348
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	410			264			1249	1017	239	1041	979	348
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			100			100	100	89	22	100	58
cM capacity (veh/h)	1154			1302			76	201	799	162	209	696
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	454	410	87	419								
Volume Left	181	0	0	126								
Volume Right	50	125	87	293								
cSH	1154	1302	799	349								
Volume to Capacity	0.16	0.00	0.11	1.20								
Queue Length 95th (m)	4.2	0.0	2.8	134.0								
Control Delay (s)	4.4	0.0	10.1	147.3								
Lane LOS	A		B	F								
Approach Delay (s)	4.4	0.0	10.1	147.3								
Approach LOS			B	F								
Intersection Summary												
Average Delay			47.2									
Intersection Capacity Utilization			69.3%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 1
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↗
Traffic Volume (veh/h)	81	59	319	155	171	209
Future Volume (Veh/h)	81	59	319	155	171	209
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	354	172	190	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.90	0.90			0.90	
vC, conflicting volume	1052	440			526	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1000	316			412	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	90			81	
cM capacity (veh/h)	197	648			1027	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	526	422			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	279	1700	1027			
Volume to Capacity	0.56	0.31	0.19			
Queue Length 95th (m)	24.0	0.0	5.1			
Control Delay (s)	33.1	0.0	5.3			
Lane LOS	D		A			
Approach Delay (s)	33.1	0.0	5.3			
Approach LOS	D					
Intersection Summary						
Average Delay		6.7				
Intersection Capacity Utilization		64.8%	ICU Level of Service	C		
Analysis Period (min)		15				











HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive & Windridge Dr

Option 1
Timing Plan: PM Peak

	↖	→	↘	↖	←	↖	↗	↑	↗	↘	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖				↗			↗	↘
Traffic Volume (veh/h)	5	0	10	27	0	21	0	1014	55	25	764	0
Future Volume (Veh/h)	5	0	10	27	0	21	0	1014	55	25	764	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	6	0	11	45	0	35	0	1268	69	26	804	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None		None		
Median storage (veh)												
Upstream signal (m)								264			113	
pX, platoon unblocked	0.62	0.62	0.92	0.62	0.62	0.58	0.92			0.58		
vC, conflicting volume	2194	2193	804	2170	2158	1302	804			1337		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2338	2337	744	2299	2281	1157	744			1217		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	46	100	97	0	100	75	100			92		
cM capacity (veh/h)	11	21	382	15	23	138	795			330		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	80	1337	830								
Volume Left	6	45	0	26								
Volume Right	11	35	69	0								
cSH	30	25	1700	330								
Volume to Capacity	0.57	3.19	0.79	0.08								
Queue Length 95th (m)	14.1	Err	0.0	1.9								
Control Delay (s)	231.6	Err	0.0	3.0								
Lane LOS	F	F		A								
Approach Delay (s)	231.6	Err	0.0	3.0								
Approach LOS	F	F										
Intersection Summary												
Average Delay			356.1									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive /Riverside Drive & Front St

Option 1
Timing Plan: PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	81	73	685	219	167
Future Volume (Veh/h)	137	81	73	685	219	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	761	243	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	878	214	429			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	878	214	429			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	43	89	93			
cM capacity (veh/h)	267	790	1127			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	335	507	162	267	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	186	
cSH	354	1127	1700	1700	1700	
Volume to Capacity	0.68	0.07	0.30	0.10	0.16	
Queue Length 95th (m)	36.7	1.8	0.0	0.0	0.0	
Control Delay (s)	34.6	2.6	0.0	0.0	0.0	
Lane LOS	D	A				
Approach Delay (s)	34.6	1.0		0.0		
Approach LOS	D					
Intersection Summary						
Average Delay		6.1				
Intersection Capacity Utilization		55.0%		ICU Level of Service	B	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 1
Timing Plan: PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	20	18	18	42	6
Future Volume (Veh/h)	44	20	18	18	42	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	22	20	20	47	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			71		120	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		120	60
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	99
cM capacity (veh/h)			1529		864	1005
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	71	40	54			
Volume Left	0	20	47			
Volume Right	22	0	7			
cSH	1700	1529	880			
Volume to Capacity	0.04	0.01	0.06			
Queue Length 95th (m)	0.0	0.3	1.5			
Control Delay (s)	0.0	3.7	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.7	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay		4.0				
Intersection Capacity Utilization		18.6%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Option 1
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰			↱	
Traffic Volume (veh/h)	12	2088	8	24	1223	7	1	0	22	8	0	14
Future Volume (Veh/h)	12	2088	8	24	1223	7	1	0	22	8	0	14
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70
Hourly flow rate (vph)	13	2221	9	27	1359	8	2	0	44	11	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked	0.69						0.69	0.69		0.69	0.69	0.69
vC, conflicting volume	1367			2230			3005	3672	1115	2598	3673	684
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	644			2230			3007	3970	1115	2419	3971	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			88			43	100	78	0	100	97
cM capacity (veh/h)	649			230			4	2	202	8	2	752
Direction, Lane #												
Volume Total	13	1481	749	27	906	461	46	31				
Volume Left	13	0	0	27	0	0	2	11				
Volume Right	0	0	9	0	0	8	44	20				
cSH	649	1700	1700	230	1700	1700	59	23				
Volume to Capacity	0.02	0.87	0.44	0.12	0.53	0.27	0.78	1.37				
Queue Length 95th (m)	0.5	0.0	0.0	3.0	0.0	0.0	26.1	30.2				
Control Delay (s)	10.7	0.0	0.0	22.8	0.0	0.0	172.7	572.4				
Lane LOS	B			C			F	F				
Approach Delay (s)	0.1			0.4			172.7	572.4				
Approach LOS							F	F				
Intersection Summary												
Average Delay			7.1									
Intersection Capacity Utilization			69.5%				ICU Level of Service		C			
Analysis Period (min)			15									

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 2
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱			↰			↱	
Traffic Volume (vph)	179	1052	114	96	1860	10	94	27	60	18	62	346
Future Volume (vph)	179	1052	114	96	1860	10	94	27	60	18	62	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.075			0.216				0.696			0.913	
Satd. Flow (perm)	126	3341	0	411	3507	0	0	1224	1408	0	1754	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17							69			433
Link Speed (k/h)		48			48				48			48
Link Distance (m)		69.3			68.7				223.8			98.2
Travel Time (s)		5.2			5.2				16.8			7.4
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1281	0	100	1948	0	0	127	63	0	101	433
Number of Detectors	1	1		1	1		1	2	1	1	2	1
Detector Template	Left			Left			Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	10.0		2.0	10.0		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)								9.4			9.4	
Detector 2 Size(m)								0.6			0.6	
Detector 2 Type								CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	37.0	67.0		30.0	30.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	33.6%	60.9%		27.3%	27.3%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	32.0	62.0		25.0	25.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effect Green (s)	63.2	63.2		49.1	49.1			14.7	14.7		14.7	14.7
Actuated g/C Ratio	0.74	0.74		0.57	0.57			0.17	0.17		0.17	0.17
v/c Ratio	0.75	0.52		0.43	0.97			0.61	0.21		0.34	0.69
Control Delay	35.0	6.2		20.7	34.7			45.4	8.8		34.0	9.4
Queue Delay	0.0	12.1		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	35.0	18.4		20.7	34.7			45.4	8.8		34.0	9.4
LOS	C	B		C	C			D	A		C	A
Approach Delay		20.6			34.0			33.3			14.0	
Approach LOS		C			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 85.9

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 26.8

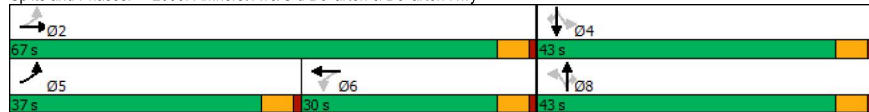
Intersection LOS: C

Intersection Capacity Utilization 89.8%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings

3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	36	833	270	370	1439	42	228	49	312	115	73	115
Future Volume (vph)	36	833	270	370	1439	42	228	49	312	115	73	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1710	0
Flt Permitted	0.063			0.950			0.213			0.717		
Satd. Flow (perm)	119	3446	0	3471	3579	1601	401	1883	1601	1350	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37				170			357		48	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	411	1599	47	285	61	390	144	235	0
Number of Detectors	2	2		2	2	2	2	2	0	2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2	15.2	15.2	15.2	0.0	15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8	1.8	1.8	1.8	0.0	1.8	1.8	
Detector 1 Type	CH+Ex	CH+Ex		CH+Ex	CH+Ex	CH+Ex	CH+Ex	CH+Ex		CH+Ex	CH+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4	13.4	13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8	1.8	1.8	1.8		1.8	1.8	
Detector 2 Type	CH+Ex	CH+Ex		CH+Ex	CH+Ex	CH+Ex	CH+Ex	CH+Ex		CH+Ex	CH+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	64.6		25.0	78.2	78.2	25.0	41.7		13.7	30.4	
Total Split (%)	7.9%	44.6%		17.2%	53.9%	53.9%	17.2%	28.8%		9.4%	21.0%	
Maximum Green (s)	5.0	59.1		18.6	72.7	72.7	18.6	35.3		7.3	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	

01-03-2018
NSSynchro 10 Report
Page 5

Lanes, Volumes, Timings

3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	71.8	64.0		21.4	80.0	78.5	43.6	30.4	145.0	35.3	22.5	
Actuated g/C Ratio	0.50	0.44		0.15	0.55	0.54	0.30	0.21	1.00	0.24	0.16	
v/c Ratio	0.27	0.80		0.80	0.81	0.05	0.89	0.15	0.24	0.38	0.77	
Control Delay	18.9	39.3		72.2	32.0	0.1	69.5	44.2	0.4	39.9	62.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	39.3		72.2	32.0	0.1	69.5	44.2	0.4	39.9	62.9	
LOS	B	D		E	C	A	E	D	A	D	E	
Approach Delay		38.6			39.3			30.8			54.2	
Approach LOS		D			D			C			D	

Intersection Summary

Area Type: Other

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 39.0

Intersection LOS: D

Intersection Capacity Utilization 80.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	229	10	46	45	22	82	25	267	24	51	514	220
Future Volume (vph)	229	10	46	45	22	82	25	267	24	51	514	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	30.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1859	0	0	1876	1601
Flt Permitted		0.617			0.827		0.217				0.944	
Satd. Flow (perm)	0	1162	1601	0	1441	0	409	1859	0	0	1778	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			9				119
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	66	0	212	0	28	324	0	0	621	242
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		21.3			21.3			23.1			23.1	
Actuated g/C Ratio		0.40			0.40			0.44			0.44	
v/c Ratio		0.73			0.33			0.16			0.80	

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton

Option 2

Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		23.7	3.4		6.7		13.5	12.6			24.3	7.2
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	0.0
Total Delay		23.7	3.4		6.7		13.5	12.6			24.3	7.2
LOS		C	A		A		B	B			C	A
Approach Delay		20.4			6.7			12.7			19.5	
Approach LOS		C			A			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 52.6

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 75.3%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3030: Riverside Drive & Old Dollarton

→ Ø2		↓ Ø4
31 s		29 s
← Ø6		↑ Ø8
31 s		29 s

01-03-2018
NSSynchro 10 Report
Page 8

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Option 2

Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	185	846	16	46	1538	87	81	47	34	114	68	300
Future Volume (vph)	185	846	16	46	1538	87	81	47	34	114	68	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1706	3388	0	1825	3429	0	1630	1627	0	1573	1608	0
Flt Permitted	0.059			0.302			0.173			0.640		
Satd. Flow (perm)	106	3388	0	580	3429	0	297	1627	0	1060	1608	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			28			164	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	203	948	0	51	1806	0	101	102	0	127	409	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2			6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0		25.0	25.0		8.0	29.0		8.0	29.0	
Total Split (s)	15.0	83.0		68.0	68.0		8.0	29.0		8.0	29.0	
Total Split (%)	12.5%	69.2%		56.7%	56.7%		6.7%	24.2%		6.7%	24.2%	
Maximum Green (s)	10.0	78.0		63.0	63.0		4.0	24.0		4.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		13.0		13.0	13.0			17.0			17.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	79.1	79.1		64.1	64.1		29.1	23.1		29.1	23.1	
Actuated g/C Ratio	0.67	0.67		0.54	0.54		0.25	0.20		0.25	0.20	

01-03-2018
NSSynchro 10 Report
Page 9

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	0.92	0.42		0.16	0.97		0.78	0.30		0.45	0.92	
Control Delay	74.6	9.9		16.1	41.8		73.9	31.5		41.0	54.5	
Queue Delay	0.0	0.0		0.0	6.5		0.0	0.0		0.0	0.0	
Total Delay	74.6	9.9		16.1	48.3		73.9	31.5		41.0	54.5	
LOS	E	A		B	D		E	C		D	D	
Approach Delay		21.3			47.4			52.6			51.3	
Approach LOS		C			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 118.2

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 40.2

Intersection LOS: D

Intersection Capacity Utilization 95.4%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3050: Riverside Drive & Dollarton Hwy

Ø2	Ø3	Ø4
83 s	8 s	29 s
Ø5	Ø6	Ø7
15 s	58 s	8 s
		29 s

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱		↱	↱	↰	↱	↱
Traffic Volume (vph)	26	797	109	20	1599	15	81	1	11	28	1	33
Future Volume (vph)	26	797	109	20	1599	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3514	0	1789	3575	0	0	1775	0	0	1797	1601
Flt Permitted	0.112			0.273				0.719			0.741	
Satd. Flow (perm)	211	3514	0	514	3575	0	0	1333	0	0	1396	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			2			11				31
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	974	0	21	1682	0	0	100	0	0	49	55
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Detector 1 Type	CH+Ex	CH+Ex		CH+Ex	CH+Ex		CH+Ex	CH+Ex		CH+Ex	CH+Ex	CH+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	41.4%
Maximum Green (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	36.5	36.5		36.5	36.5			10.1			10.1	10.1
Actuated g/C Ratio	0.71	0.71		0.71	0.71			0.20			0.20	0.20
v/c Ratio	0.19	0.39		0.06	0.66			0.37			0.18	0.16

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Control Delay	8.0	4.6		4.3	7.4			21.3			19.8	12.2
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.0	4.6		4.3	7.4			21.3			19.8	12.2
LOS	A	A		A	A			C			B	B
Approach Delay		4.7			7.3			21.3			15.8	
Approach LOS		A			A			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 51.1

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 7.2

Intersection LOS: A

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy

→ Ø2	↓ Ø4
← Ø6	↑ Ø8
41 s	29 s

Lanes, Volumes, Timings

6050: Dollarton Hwy & Berkley Road

Option 2

Timing Plan: AM PEAK

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	332	504	1223	182	100	411
Future Volume (vph)	332	504	1223	182	100	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.101				0.950	
Satd. Flow (perm)	190	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				143		313
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	369	560	1359	202	111	457
Number of Detectors	2	2	2	0	2	0
Detector Template						
Leading Detector (m)	15.2	15.2	15.2	0.0	15.2	0.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	1.8	1.8	1.8	0.0	1.8	0.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)	13.4	13.4	13.4		13.4	
Detector 2 Size(m)	1.8	1.8	1.8		1.8	
Detector 2 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	19.0	60.0	41.0	41.0	30.0	30.0
Total Split (%)	21.1%	66.7%	45.6%	45.6%	33.3%	33.3%
Maximum Green (s)	14.0	55.0	36.0	36.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2
Timing Plan: AM PEAK

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	53.8	53.8	34.6	34.6	14.5	14.5
Actuated g/C Ratio	0.69	0.69	0.44	0.44	0.18	0.18
v/c Ratio	0.88	0.23	0.86	0.26	0.34	0.83
Control Delay	44.6	5.7	28.2	6.5	30.1	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.6	5.7	28.2	6.5	30.1	23.6
LOS	D	A	C	A	C	C
Approach Delay		21.2	25.4		24.9	
Approach LOS		C	C		C	

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 78.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 70.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↕	↔	↕	↕	↔	↕	↕	↔	↕	↕
Traffic Volume (vph)	179	998	124	307	1492	52	39	9	122	74	82	370
Future Volume (vph)	179	998	124	307	1492	52	39	9	122	74	82	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.084			0.161			0.691			0.750		
Satd. Flow (perm)	158	3579	1601	303	3579	1601	1301	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			107			173			411
Link Speed (k/h)		60			60			48				48
Link Distance (m)		99.6			116.0			119.3				142.6
Travel Time (s)		6.0			7.0			8.9				10.7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1085	135	334	1622	57	49	11	153	82	91	411
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	0.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	13.0	36.3	36.3	25.0	48.3	48.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	14.4%	40.3%	40.3%	27.8%	53.7%	53.7%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	6.9	30.7	30.7	19.4	42.7	42.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	

01-03-2018
NS

Synchro 10 Report
Page 15

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

Option 2

Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		12.0	12.0		10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	
Act Effct Green (s)	59.5	47.3	47.3	69.2	53.3	53.3	12.5	12.5	12.5	12.5	12.5	90.0
Actuated g/C Ratio	0.66	0.53	0.53	0.77	0.59	0.59	0.14	0.14	0.14	0.14	0.14	1.00
v/c Ratio	0.60	0.58	0.15	0.63	0.76	0.06	0.27	0.04	0.41	0.42	0.35	0.26
Control Delay	25.5	17.8	1.7	13.6	18.4	0.6	37.4	31.8	7.6	41.2	37.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.5	17.8	1.7	13.6	18.4	0.6	37.4	31.8	7.6	41.2	37.9	0.4
LOS	C	B	A	B	B	A	D	C	A	D	D	A
Approach Delay		17.3			17.1			15.7			12.0	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 16.4

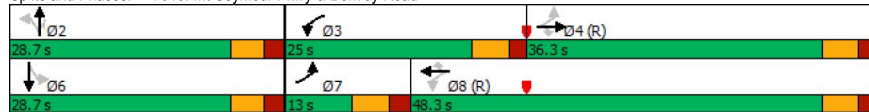
Intersection LOS: B

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road

01-03-2018
NSSynchro 10 Report
Page 16

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Option 2

Timing Plan: AM PEAK

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	111	494	1293	61	33	113
Future Volume (vph)	111	494	1293	61	33	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.115				0.950	
Satd. Flow (perm)	217	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62		123
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	391.4		116.7	
Travel Time (s)		37.0	29.4		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	537	1405	66	36	123
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	10.0	46.0	36.0	36.0	24.0	24.0
Total Split (%)	14.3%	65.7%	51.4%	51.4%	34.3%	34.3%
Maximum Green (s)	5.0	41.0	31.0	31.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0

01-03-2018
NSSynchro 10 Report
Page 17

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Option 2

Timing Plan: AM PEAK

	EBL	EBT	WBT	WBR	SBL	SBR
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	37.5	37.5	29.9	29.9	19.2	19.2
Actuated g/C Ratio	0.56	0.56	0.45	0.45	0.29	0.29
v/c Ratio	0.50	0.27	0.88	0.09	0.07	0.22
Control Delay	14.2	7.7	25.5	4.2	19.5	5.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.2	7.7	25.5	4.2	19.5	5.7
LOS	B	A	C	A	B	A
Approach Delay		8.9	24.6		8.8	
Approach LOS		A	C		A	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 19.0

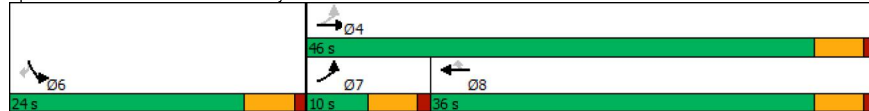
Intersection LOS: B

Intersection Capacity Utilization 60.2%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Collector A



HCM Unsignalized Intersection Capacity Analysis

2030: Semour River PI & Old Dollarton

Option 2

Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	97	103	5	0	234	88	0	0	44	94	0	181
Future Volume (Veh/h)	97	103	5	0	234	88	0	0	44	94	0	181
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	121	129	6	0	252	95	0	0	55	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		235			201							
pX, platoon unblocked												
vC, conflicting volume	347			135			900	721	132	728	676	300
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	347			135			900	721	132	728	676	300
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			100	100	94	60	100	69
cM capacity (veh/h)	1185			1279			167	320	923	294	339	738

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	256	347	55	344
Volume Left	121	0	0	118
Volume Right	6	95	55	226
cSH	1185	1279	923	486
Volume to Capacity	0.10	0.00	0.06	0.71
Queue Length 95th (m)	2.6	0.0	1.4	42.2
Control Delay (s)	4.5	0.0	9.1	28.5
Lane LOS	A		A	D
Approach Delay (s)	4.5	0.0	9.1	28.5
Approach LOS			A	D

Intersection Summary

Average Delay 11.4

Intersection Capacity Utilization 61.8%

ICU Level of Service

B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 2
Timing Plan: AM PEAK

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↗
Traffic Volume (veh/h)	178	31	150	71	52	353
Future Volume (Veh/h)	178	31	150	71	52	353
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	198	34	167	79	58	392
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			98		338	
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	714	206			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	705	190			230	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	48	96			96	
cM capacity (veh/h)	380	841			1321	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	246	450			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	414	1700	1321			
Volume to Capacity	0.56	0.14	0.04			
Queue Length 95th (m)	25.4	0.0	1.0			
Control Delay (s)	24.3	0.0	1.4			
Lane LOS	C		A			
Approach Delay (s)	24.3	0.0	1.4			
Approach LOS	C					
Intersection Summary						
Average Delay		6.7				
Intersection Capacity Utilization		55.4%		ICU Level of Service	B	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive/Riverside & Windridge Dr

Option 2
Timing Plan: AM PEAK

	↖	→	↘	↖	←	↖	↗	↑	↗	↘	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖				↗			↗	↖
Traffic Volume (veh/h)	10	0	35	73	0	29	0	552	18	12	705	0
Future Volume (Veh/h)	10	0	35	73	0	29	0	552	18	12	705	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	11	0	39	81	0	32	0	613	20	13	783	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								264			113	
pX, platoon unblocked												
vC, conflicting volume	1464	1442	783	1471	1432	623	783			633		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1464	1442	783	1471	1432	623	783			633		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	90	14	100	93	100			99		
cM capacity (veh/h)	98	131	394	94	132	486	835			950		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	113	633	796								
Volume Left	11	81	0	13								
Volume Right	39	32	20	0								
cSH	237	122	1700	950								
Volume to Capacity	0.21	0.93	0.37	0.01								
Queue Length 95th (m)	5.9	45.6	0.0	0.3								
Control Delay (s)	24.2	131.2	0.0	0.4								
Lane LOS	C	F		A								
Approach Delay (s)	24.2	131.2	0.0	0.4								
Approach LOS	C	F										
Intersection Summary												
Average Delay			10.3									
Intersection Capacity Utilization			Err%		ICU Level of Service				H			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Option 2
Timing Plan: AM PEAK

	EBL	EBR	NBL	NBT	SBT	SBR
Movement						
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	48	39	38	253	420	157
Future Volume (Veh/h)	48	39	38	253	420	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	42	41	275	457	171
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked	0.76	0.74	0.74			
vC, conflicting volume	900	542	628			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	629	214	328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	93	96			
cM capacity (veh/h)	323	615	916			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	94	316	628			
Volume Left	52	41	0			
Volume Right	42	0	171			
cSH	410	916	1700			
Volume to Capacity	0.23	0.04	0.37			
Queue Length 95th (m)	6.6	1.1	0.0			
Control Delay (s)	16.4	1.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.4	1.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		2.0				
Intersection Capacity Utilization		57.1%		ICU Level of Service	B	
Analysis Period (min)		15				



















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 2
Timing Plan: AM PEAK

	EBT	EBR	WBL	WBT	NBL	NBR
Movement						
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	17	31	27	16	33	18
Future Volume (Veh/h)	17	31	27	16	33	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	34	30	18	37	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			53		114	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		114	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	98
cM capacity (veh/h)			1553		865	1037
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	53	48	57			
Volume Left	0	30	37			
Volume Right	34	0	20			
cSH	1700	1553	919			
Volume to Capacity	0.03	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	4.7	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.7	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay		4.7				
Intersection Capacity Utilization		19.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 2
Timing Plan: AM PEAK

														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations														
Traffic Volume (veh/h)	1	1257	6	49	1846	7	1	0	31	12	0	6		
Future Volume (Veh/h)	1	1257	6	49	1846	7	1	0	31	12	0	6		
Sign Control	Free			Free			Stop			Stop				
Grade	0%			0%			0%			0%				
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50		
Hourly flow rate (vph)	1	1397	7	54	2051	8	1	0	39	24	0	12		
Pedestrians														
Lane Width (m)														
Walking Speed (m/s)														
Percent Blockage														
Right turn flare (veh)														
Median type	None			None										
Median storage veh														
Upstream signal (m)	284													
pX, platoon unblocked	0.63							0.63	0.63			0.63	0.63	
vC, conflicting volume	2059				1404				2548	3570	702	2902	3569	1030
vC1, stage 1 conf vol														
vC2, stage 2 conf vol														
vCu, unblocked vol	1497				1404				2278	3910	702	2844	3909	0
tC, single (s)	4.1				4.1				7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)														
tF (s)	2.2				2.2				3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100				89				92	100	90	0	100	98
cM capacity (veh/h)	278				482				12	2	381	4	2	679
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1						
Volume Total	1	931	473	54	1367	692	40	36						
Volume Left	1	0	0	54	0	0	1	24						
Volume Right	0	0	7	0	0	8	39	12						
cSH	278	1700	1700	482	1700	1700	216	6						
Volume to Capacity	0.00	0.55	0.28	0.11	0.80	0.41	0.18	5.99						
Queue Length 95th (m)	0.1	0.0	0.0	2.9	0.0	0.0	5.0	Err						
Control Delay (s)	18.0	0.0	0.0	13.4	0.0	0.0	25.4	Err						
Lane LOS	C				B				D	F				
Approach Delay (s)	0.0				0.3				25.4	Err				
Approach LOS							D			F				
Intersection Summary														
Average Delay	100.6													
Intersection Capacity Utilization	65.4%			ICU Level of Service					C					
Analysis Period (min)	15													

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 2
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↲	↰	↱	↲	↰	↱	↲	↰	↱	↲
Traffic Volume (vph)	401	1618	46	37	1304	15	138	19	55	13	19	239
Future Volume (vph)	401	1618	46	37	1304	15	138	19	55	13	19	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3554	0	1690	3559	0	0	1778	1526	0	1883	1570
Flt Permitted	0.100			0.122				0.727			0.869	
Satd. Flow (perm)	188	3554	0	217	3559	0	0	1349	1526	0	1669	1570
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	6			2			85			266		
Link Speed (k/h)	48			48			48			48		
Link Distance (m)	69.3			68.7			223.8			98.7		
Travel Time (s)	5.2			5.2			16.8			7.4		
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	1751	0	44	1552	0	0	197	69	0	35	266
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	20.0	60.0		40.0	40.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	22.2%	66.7%		44.4%	44.4%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	56.2	56.2		36.1	36.1		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.68	0.68		0.44	0.44		0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.96	0.72		0.46	0.99		0.67	0.17	0.17	0.10	0.48	0.48
Control Delay	57.8	11.3		38.9	46.1		40.8	5.3	25.2	6.6	6.6	6.6
Queue Delay	42.9	48.1		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.7	59.3		38.9	46.1		40.8	5.3	25.2	6.6	6.6	6.6
LOS	F	E		D	D		D	A	C	C	A	A
Approach Delay	67.4			45.9			31.6			8.8		
Approach LOS	E			D			C			A		
Queue Length 50th (m)	49.2			4.7			28.3			4.4		
Queue Length 95th (m)	#120.4	136.6		#19.1	#183.6		42.1	4.9	11.3	16.8	16.8	16.8
Internal Link Dist (m)	45.3			44.7			199.8			74.7		
Turn Bay Length (m)	20.0			75.0			15.0			30.0		
Base Capacity (vph)	441	2431		95	1565		428	542	529	679	679	679
Starvation Cap Reductn	91	921		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.21	1.16		0.46	0.99		0.46	0.13	0.07	0.39	0.39	0.39

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 2

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 82.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 53.2

Intersection LOS: D

Intersection Capacity Utilization 84.0%

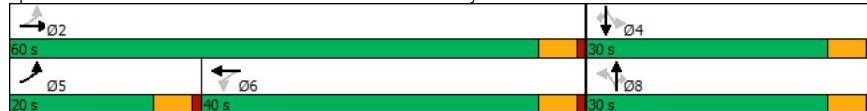
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings

3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Option 2

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	99	1342	322	290	717	61	165	96	502	44	55	71
Future Volume (vph)	99	1342	322	290	717	61	165	96	502	44	55	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1725	0
Flt Permitted	0.313			0.046			0.312			0.670		
Satd. Flow (perm)	590	3475	0	168	3579	1601	588	1883	1601	1262	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				122			303		39	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	322	797	68	206	120	628	55	158	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	12.0	82.0		15.0	85.0	85.0	17.5	33.0		15.0	30.5	
Total Split (%)	8.3%	56.6%		10.3%	58.6%	58.6%	12.1%	22.8%		10.3%	21.0%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	92.5	82.5		101.4	87.6	86.1	34.3	23.5	145.0	28.2	17.9	
Actuated g/C Ratio	0.64	0.57		0.70	0.60	0.59	0.24	0.16	1.00	0.19	0.12	
v/c Ratio	0.26	1.02		0.70	0.37	0.07	0.82	0.39	0.39	0.20	0.64	
Control Delay	9.5	56.0		42.6	15.9	0.1	72.6	58.7	0.7	42.8	56.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.5	56.0		42.6	15.9	0.1	72.6	58.7	0.7	42.8	56.5	
LOS	A	E		D	B	A	E	E	A	D	E	
Approach Delay		53.4			22.2			23.5			52.9	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	10.3	~331.1		30.0	59.1	0.0	51.0	32.1	0.0	12.4	33.0	
Queue Length 95th (m)	17.8	#319.4		#53.0	80.4	0.0	62.0	43.6	0.0	20.1	46.2	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0	50.0		
Base Capacity (vph)	459	1991		461	2162	1000	251	376	1601	291	347	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	1.02		0.70	0.37	0.07	0.82	0.32	0.39	0.19	0.46	

01-03-2018
NSSynchro 10 Report
Page 5

Lanes, Volumes, Timings

Option 2

3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 38.8

Intersection LOS: D

Intersection Capacity Utilization 85.4%

ICU Level of Service E

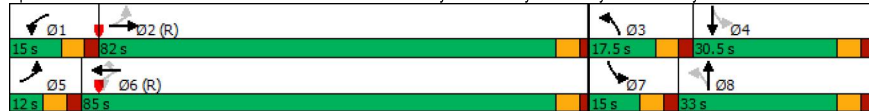
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

Option 2

3030: Riverside & Old Dollarton

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	202	30	36	28	18	80	43	524	70	77	283	288
Future Volume (vph)	202	30	36	28	18	80	43	524	70	77	283	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	0	1804	1601	0	1703	0	1789	1850	0	0	1863	1601
Flt Permitted		0.706			0.892		0.454				0.643	
Satd. Flow (perm)	0	1330	1601	0	1536	0	855	1850	0	0	1211	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			15				276
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	45	0	148	0	46	631	0	0	400	320
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	55.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Act Effct Green (s)		17.7	17.7		17.7		24.3	24.3		24.3	24.3	24.3
Actuated g/C Ratio		0.35	0.35		0.35		0.48	0.48		0.48	0.48	0.48
v/c Ratio		0.62	0.08		0.25		0.11	0.70		0.68	0.35	
Control Delay		21.0	4.8		6.9		9.1	15.8		18.6	3.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		21.0	4.8		6.9		9.1	15.8		18.6	3.3	
LOS		C	A		A		A	B		B	A	
Approach Delay		18.9			6.9			15.3			11.8	
Approach LOS		B			A			B			B	
Queue Length 50th (m)		22.8	0.0		3.4		2.2	41.7		26.8	2.0	
Queue Length 95th (m)		38.3	4.0		12.0		7.3	82.4		#61.8	13.3	
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)		634	786		781		514	1118		728	1072	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.46	0.06		0.19		0.09	0.56		0.55	0.30	

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 2
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 50.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 13.9	Intersection LOS: B
Intersection Capacity Utilization 80.4%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3030: Riverside & Old Dollarton

























→ Ø2	↓ Ø4
27 s	33 s
← Ø6	↑ Ø8
27 s	33 s

01-03-2018
NS

Synchro 10 Report
Page 8

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 2
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 			 	
Traffic Volume (vph)	435	1205	9	25	1112	91	60	44	51	117	28	157
Future Volume (vph)	435	1205	9	25	1112	91	60	44	51	117	28	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1807	3603	0	1825	3484	0	0	1794	1633	0	1734	1617
Flt Permitted	0.108			0.202				0.643			0.673	
Satd. Flow (perm)	205	3603	0	388	3484	0	0	1186	1633	0	1215	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			11				85			224
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	483	1349	0	28	1337	0	0	116	57	0	207	224
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	24.0	61.0		37.0	37.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	26.7%	67.8%		41.1%	41.1%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Act Effct Green (s)	57.2	57.2		33.1	33.1			19.5	19.5		19.5	19.5
Actuated g/C Ratio	0.68	0.68		0.39	0.39			0.23	0.23		0.23	0.23
v/c Ratio	0.93	0.55		0.19	0.98			0.43	0.13		0.74	0.41
Control Delay	50.3	8.9		22.9	46.8			32.5	3.4		46.7	6.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	50.3	8.9		22.9	46.8			32.5	3.4		46.7	6.2
LOS	D	A		C	D			C	A		D	A
Approach Delay		19.8			46.3			22.9			25.7	
Approach LOS		B			D			C			C	
Queue Length 50th (m)	60.8	53.6		3.0	110.8			16.0	0.0		31.1	0.0
Queue Length 95th (m)	#129.9	82.2		10.0	#173.1			30.9	4.7		39.2	5.4
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0					25.0			
Base Capacity (vph)	518	2433		151	1368			351	543		359	636
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.93	0.55		0.19	0.98			0.33	0.10		0.58	0.35

01-03-2018
NS

Synchro 10 Report
Page 9





Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 2
Timing Plan: PM Peak

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 84.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 82.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside & Dollarton Hwy



















 Ø2	 Ø4
61 s	29 s
 Ø5	 Ø6
24 s	37 s
	29 s

01-03-2018
NS

Synchro 10 Report
Page 10

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Option 2
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	1452	24	8	938	23	176	4	9	31	0	17
Future Volume (vph)	24	1452	24	8	938	23	176	4	9	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3571	0	1789	3564	0	0	1788	0	0	1789	1601
Flt Permitted	0.222			0.135				0.712			0.738	
Satd. Flow (perm)	418	3571	0	254	3564	0	0	1333	0	0	1390	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			5				36
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		242.5			340.8			214.7			160.0	
Travel Time (s)		18.2			25.6			16.1			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1604	0	9	1068	0	0	210	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	30.6	30.6		30.6	30.6			13.6			13.5	13.5
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.28			0.28	0.28
v/c Ratio	0.10	0.71		0.06	0.47			0.56			0.10	0.04
Control Delay	8.1	12.5		8.0	8.1			20.5			12.9	3.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.1	12.5		8.0	8.1			20.5			12.9	3.4
LOS	A	B		A	A			C			B	A
Approach Delay		12.4			8.1			20.5			9.6	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	0.9	49.9		0.3	26.1			14.8			2.5	0.0
Queue Length 95th (m)	5.0	#120.0		2.5	53.5			30.1			6.5	1.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	264	2257		160	2254			694			722	849
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.10	0.71		0.06	0.47			0.30			0.05	0.02

01-03-2018
NS

Synchro 10 Report
Page 11

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Option 2
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 48.5	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 4050: Forester St & Dollarton Hwy

→ Ø2	↓ Ø4
31 s	29 s
← Ø6	↑ Ø8
31 s	29 s

01-03-2018
NS

Synchro 10 Report
Page 12

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2
Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗		↖	↗
Traffic Volume (vph)	403	1091	523	84	248	445
Future Volume (vph)	403	1091	523	84	248	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3503	0	1789	1601
Flt Permitted	0.269				0.950	
Satd. Flow (perm)	507	3579	3503	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			23			364
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	438	1186	659	0	270	484
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0		7.0	7.0
Minimum Split (s)	9.0	30.0	30.0		24.0	24.0
Total Split (s)	15.0	54.0	39.0		36.0	36.0
Total Split (%)	16.7%	60.0%	43.3%		40.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	Min	None		None	None
Act Effct Green (s)	40.3	40.3	25.2		16.5	16.5
Actuated g/C Ratio	0.60	0.60	0.38		0.25	0.25
v/c Ratio	0.88	0.55	0.49		0.61	0.72
Control Delay	32.5	10.0	17.8		28.3	12.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	32.5	10.0	17.8		28.3	12.8
LOS	C	B	B		C	B
Approach Delay		16.1	17.8		18.4	
Approach LOS		B	B		B	
Queue Length 50th (m)	24.3	39.0	30.1		29.5	12.1
Queue Length 95th (m)	#91.9	77.2	54.3		49.7	39.2
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0					
Base Capacity (vph)	499	2641	1805		835	941
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.88	0.45	0.37		0.32	0.51

01-03-2018
NS

Synchro 10 Report
Page 13

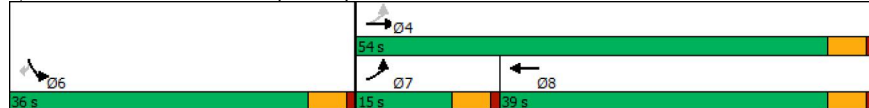
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 66.8	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 69.4%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↗	↔	↕	↗	↔	↕	↗	↔	↕	↗
Traffic Volume (vph)	412	1292	196	123	850	56	96	9	297	31	65	138
Future Volume (vph)	412	1292	196	123	850	56	96	9	297	31	65	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.108			0.130			0.715			0.749		
Satd. Flow (perm)	203	3579	1601	245	3579	1601	1347	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203			175			246			242
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			116.5			145.4	
Travel Time (s)		6.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1389	363	195	977	66	116	13	430	39	65	160
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	26.0	46.3	46.3	15.0	35.3	35.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	28.9%	51.4%	51.4%	16.7%	39.2%	39.2%	31.9%	31.9%	31.9%	31.9%	31.9%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?		Yes	Yes	Yes								
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max	Max	
Act Effct Green (s)	55.2	41.1	41.1	39.8	30.8	30.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.46	0.46	0.44	0.34	0.34	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.91	0.85	0.43	0.74	0.80	0.10	0.34	0.03	0.73	0.11	0.14	0.10
Control Delay	48.9	28.2	8.7	37.7	33.2	0.3	30.7	25.4	20.9	26.7	26.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	28.2	8.7	37.7	33.2	0.3	30.7	25.4	20.9	26.7	26.8	0.1
LOS	D	C	A	D	C	A	C	C	C	C	C	A
Approach Delay		28.9			32.1			23.0			10.6	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	53.7	109.2	16.3	16.5	81.1	0.0	16.4	1.7	28.2	5.2	8.7	0.0
Queue Length 95th (m)	#104.6	139.2	9.8	19.8	100.0	0.0	28.3	4.7	31.5	11.4	18.6	0.0
Internal Link Dist (m)		75.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0		30.0		30.0	
Base Capacity (vph)	475	1635	841	270	1225	662	344	481	592	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.85	0.43	0.72	0.80	0.10	0.34	0.03	0.73	0.11	0.14	0.10

01-03-2018
NS

Synchro 10 Report
Page 15

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	27.9
Intersection LOS:	C
Intersection Capacity Utilization	74.1%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road













--	--

01-03-2018
NS

Synchro 10 Report
Page 16

Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Option 2
Timing Plan: PM Peak

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	134	1205	524	28	83	82
Future Volume (vph)	134	1205	524	28	83	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1713	0
Flt Permitted	0.347				0.975	
Satd. Flow (perm)	654	3579	3579	1601	1713	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				30	51	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	437.4		116.7	
Travel Time (s)		37.0	32.8		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	1310	570	30	179	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	22.0	65.0	43.0	43.0	25.0	
Total Split (%)	24.4%	72.2%	47.8%	47.8%	27.8%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	
Act Effct Green (s)	36.1	36.1	25.6	25.6	9.9	
Actuated g/C Ratio	0.64	0.64	0.46	0.46	0.18	
v/c Ratio	0.25	0.57	0.35	0.04	0.52	
Control Delay	5.3	7.1	12.4	5.3	22.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.3	7.1	12.4	5.3	22.2	
LOS	A	A	B	A	C	
Approach Delay		6.9	12.1		22.2	
Approach LOS		A	B		C	
Queue Length 50th (m)	4.6	31.3	20.4	0.0	12.4	
Queue Length 95th (m)	11.9	57.0	37.0	4.2	28.7	
Internal Link Dist (m)		469.5	413.4		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	770	3519	2474	1116	655	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.37	0.23	0.03	0.27	

01-03-2018
NS

Synchro 10 Report
Page 17

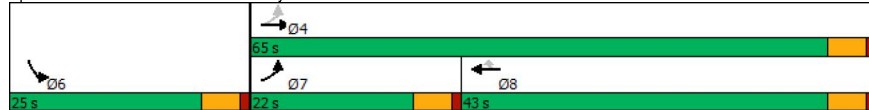
Lanes, Volumes, Timings
7050: Dollarton Hwy & Collector A

Option 2
Timing Plan: PM Peak

Intersection Summary
















Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	56.2
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	9.5
Intersection Capacity Utilization:	51.3%
Analysis Period (min):	15
Intersection LOS:	A
ICU Level of Service:	A

Splits and Phases: 7050: Dollarton Hwy & Collector A



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton

Option 2
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	137	25	0	196	84	0	0	47	82	0	158
Future Volume (Veh/h)	145	137	25	0	196	84	0	0	47	82	0	158
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	151	50	0	225	125	0	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	350			201			1118	888	176	912	850	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	350			201			1118	888	176	912	850	288
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			100	100	90	38	100	61
cM capacity (veh/h)	1214			1383			100	242	872	203	252	752
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	382	350	87	419								
Volume Left	181	0	0	126								
Volume Right	50	125	87	293								
cSH	1214	1383	872	414								
Volume to Capacity	0.15	0.00	0.10	1.01								
Queue Length 95th (m)	4.0	0.0	2.5	97.5								
Control Delay (s)	4.8	0.0	9.6	79.1								
Lane LOS	A		A	F								
Approach Delay (s)	4.8	0.0	9.6	79.1								
Approach LOS			A	F								
Intersection Summary												
Average Delay				28.9								
Intersection Capacity Utilization				63.1%	ICU Level of Service			B				
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 2
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↓
Traffic Volume (veh/h)	81	59	253	155	171	157
Future Volume (Veh/h)	81	59	253	155	171	157
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	281	172	190	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	921	367			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	860	248			343	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	63	91			83	
cM capacity (veh/h)	244	715			1100	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	453	364			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	339	1700	1100			
Volume to Capacity	0.46	0.27	0.17			
Queue Length 95th (m)	17.7	0.0	4.7			
Control Delay (s)	24.4	0.0	5.5			
Lane LOS	C		A			
Approach Delay (s)	24.4	0.0	5.5			
Approach LOS	C					
Intersection Summary						
Average Delay		6.0				
Intersection Capacity Utilization		58.6%		ICU Level of Service	B	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
3020: Riverside & Windridge Dr

Option 2
Timing Plan: PM Peak

	↖	→	↘	↖	←	↖	↗	↑	↗	↘	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖				↑			↓	↖
Traffic Volume (veh/h)	5	0	10	27	0	21	0	745	55	25	642	0
Future Volume (Veh/h)	5	0	10	27	0	21	0	745	55	25	642	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	6	0	11	45	0	35	0	931	69	26	676	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								264			113	
pX, platoon unblocked	0.79	0.79	0.94	0.79	0.79	0.76	0.94			0.76		
vC, conflicting volume	1728	1728	676	1704	1694	966	676			1000		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1625	1624	626	1595	1581	801	626			846		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	98	30	100	88	100			96		
cM capacity (veh/h)	56	78	456	65	83	294	901			605		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	80	1000	702								
Volume Left	6	45	0	26								
Volume Right	11	35	69	0								
cSH	129	98	1700	605								
Volume to Capacity	0.13	0.82	0.59	0.04								
Queue Length 95th (m)	3.4	33.9	0.0	1.0								
Control Delay (s)	37.2	123.6	0.0	1.2								
Lane LOS	E	F		A								
Approach Delay (s)	37.2	123.6	0.0	1.2								
Approach LOS	E	F										
Intersection Summary												
Average Delay			6.3									
Intersection Capacity Utilization			Err%		ICU Level of Service					H		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
3040: Riverside & Front St

Option 2
Timing Plan: PM Peak

	EBL	EBR	NBL	NBT	SBT	SBR
Movement						
Lane Configurations	↔			↕	↕	
Traffic Volume (veh/h)	137	81	73	483	149	167
Future Volume (Veh/h)	137	81	73	483	149	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	537	166	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	690	176	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	690	176	352			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	89	93			
cM capacity (veh/h)	354	837	1203			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	260	358	111	241	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	186	
cSH	450	1203	1700	1700	1700	
Volume to Capacity	0.54	0.07	0.21	0.07	0.14	
Queue Length 95th (m)	23.6	1.6	0.0	0.0	0.0	
Control Delay (s)	21.9	3.0	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	21.9	1.3		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay		5.0				
Intersection Capacity Utilization		47.5%		ICU Level of Service	A	
Analysis Period (min)		15				



















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 2
Timing Plan: PM Peak

	EBT	EBR	WBL	WBT	NBL	NBR
Movement						
Lane Configurations	↔			↕	↕	
Traffic Volume (veh/h)	48	22	18	22	55	6
Future Volume (Veh/h)	48	22	18	22	55	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	53	24	20	24	61	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			77		129	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			77		129	65
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	99
cM capacity (veh/h)			1522		854	999
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	77	44	68			
Volume Left	0	20	61			
Volume Right	24	0	7			
cSH	1700	1522	867			
Volume to Capacity	0.05	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	3.4	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.4	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay		4.2				
Intersection Capacity Utilization		18.9%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Option 2
Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	12	1873	8	24	1053	7	1	0	20	8	0	14	
Future Volume (Veh/h)	12	1873	8	24	1053	7	1	0	20	8	0	14	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70	
Hourly flow rate (vph)	13	1993	9	27	1170	8	2	0	40	11	0	20	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)	284												
pX, platoon unblocked	0.76						0.76	0.76			0.76	0.76	0.76
vC, conflicting volume	1178	2002					2682	3256	1001	2290	3256	589	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	598	2002					2581	3337	1001	2065	3337	0	
tC, single (s)	4.1	4.1					7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2	2.2					3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	98	90					77	100	83	40	100	98	
cM capacity (veh/h)	739	282					9	5	241	18	5	823	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	13	1329	673	27	780	398	42	31					
Volume Left	13	0	0	27	0	0	2	11					
Volume Right	0	0	9	0	0	8	40	20					
cSH	739	1700	1700	282	1700	1700	105	49					
Volume to Capacity	0.02	0.78	0.40	0.10	0.46	0.23	0.40	0.63					
Queue Length 95th (m)	0.4	0.0	0.0	2.4	0.0	0.0	12.6	18.6					
Control Delay (s)	10.0	0.0	0.0	19.1	0.0	0.0	60.6	160.1					
Lane LOS	A	C					F	F					
Approach Delay (s)	0.1	0.4					60.6	160.1					
Approach LOS							F	F					
Intersection Summary													
Average Delay	2.5												
Intersection Capacity Utilization	63.4%			ICU Level of Service				B					
Analysis Period (min)	15												

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 3
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱		↰	↱		↰	↱		↰	↱	
Traffic Volume (vph)	179	1052	114	96	1859	10	94	27	60	18	62	390
Future Volume (vph)	179	1052	114	96	1859	10	94	27	60	18	62	390
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.075			0.216				0.696			0.913	
Satd. Flow (perm)	126	3341	0	411	3507	0	0	1224	1408	0	1754	1601
Right Turn on Red				Yes			Yes			Yes		
Satd. Flow (RTOR)	17						69			488		
Link Speed (k/h)	48			48			48			48		
Link Distance (m)	69.3			68.7			223.8			98.2		
Travel Time (s)	5.2			5.2			16.8			7.4		
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1281	0	100	1946	0	0	127	63	0	101	488
Number of Detectors	1	1		1	1		1	2	1	1	2	1
Detector Template	Left			Left			Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	10.0		2.0	10.0		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	CH+Ex	CH+Ex		CH+Ex	CH+Ex		CH+Ex	CH+Ex	CH+Ex	CH+Ex	CH+Ex	CH+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)												
Detector 2 Size(m)												
Detector 2 Type	CH+Ex											
Detector 2 Channel												
Detector 2 Extend (s)	0.0											
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	37.0	67.0		30.0	30.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	33.6%	60.9%		27.3%	27.3%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	32.0	62.0		25.0	25.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None

Option 3 12:00 pm 06-05-2017
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 3

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effect Green (s)	63.2	63.2		49.1	49.1			14.7	14.7		14.7	14.7
Actuated g/C Ratio	0.74	0.74		0.57	0.57			0.17	0.17		0.17	0.17
v/c Ratio	0.75	0.52		0.43	0.97			0.61	0.21		0.34	0.72
Control Delay	35.0	6.2		20.7	34.6			45.4	8.8		34.0	9.8
Queue Delay	0.0	12.1		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	35.0	18.4		20.7	34.6			45.4	8.8		34.0	9.8
LOS	C	B		C	C			D	A		C	A
Approach Delay		20.6			33.9			33.3			13.9	
Approach LOS		C			C			C			B	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 85.9

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 92.5%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

→ Ø2	↓ Ø4
67 s	43 s
↖ Ø5	↗ Ø6
37 s	30 s
	43 s

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings

3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 3

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↗	↖	↑	↗	↖	↑	↗	↖	↑	↗
Traffic Volume (vph)	36	833	270	370	1439	42	228	59	312	115	73	115
Future Volume (vph)	36	833	270	370	1439	42	228	59	312	115	73	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	7.5			7.5			0.0			15.0		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1710	0
Flt Permitted	0.062			0.950			0.187			0.709		
Satd. Flow (perm)	117	3446	0	3471	3579	1601	352	1883	1601	1335	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37				170			357		48	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	411	1599	47	285	74	390	144	235	0
Number of Detectors	2	2		2	2	2	2	2	0	2	2	
Detector Template												
Leading Detector (m)	15.2	15.2		15.2	15.2	15.2	15.2	15.2	0.0	15.2	15.2	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	1.8	1.8		1.8	1.8	1.8	1.8	1.8	0.0	1.8	1.8	
Detector 1 Type	CH+Ex	CH+Ex		CH+Ex	CH+Ex	CH+Ex	CH+Ex	CH+Ex		CH+Ex	CH+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)	13.4	13.4		13.4	13.4	13.4	13.4	13.4		13.4	13.4	
Detector 2 Size(m)	1.8	1.8		1.8	1.8	1.8	1.8	1.8		1.8	1.8	
Detector 2 Type	CH+Ex	CH+Ex		CH+Ex	CH+Ex	CH+Ex	CH+Ex	CH+Ex		CH+Ex	CH+Ex	
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	64.6		25.0	78.2	78.2	25.0	41.7		13.7	30.4	
Total Split (%)	7.9%	44.6%		17.2%	53.9%	53.9%	17.2%	28.8%		9.4%	21.0%	
Maximum Green (s)	5.0	59.1		18.6	72.7	72.7	18.6	35.3		7.3	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 5

Lanes, Volumes, Timings

3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 3

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		7.0			7.0	7.0		17.0				17.0
Pedestrian Calls (#/hr)		0			0	0		0				0
Act Effct Green (s)	71.8	64.0		21.4	80.0	78.5	47.5	33.8	145.0	32.2		22.5
Actuated g/C Ratio	0.50	0.44		0.15	0.55	0.54	0.33	0.23	1.00	0.22		0.16
v/c Ratio	0.27	0.80		0.80	0.81	0.05	0.88	0.17	0.24	0.44		0.77
Control Delay	19.1	39.3		72.2	32.0	0.1	66.8	44.1	0.4	41.3		62.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
Total Delay	19.1	39.3		72.2	32.0	0.1	66.8	44.1	0.4	41.3		62.9
LOS	B	D		E	C	A	E	D	A	D		E
Approach Delay		38.6			39.3			30.0				54.7
Approach LOS		D			D			C				D

Intersection Summary

Area Type: Other

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 105

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 38.9

Intersection LOS: D

Intersection Capacity Utilization 80.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 6

Lanes, Volumes, Timings

3030: Riverside & Old Dollarton

Option 3

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	230	10	46	45	22	82	27	267	24	51	504	231
Future Volume (vph)	230	10	46	45	22	82	27	267	24	51	504	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	30.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (m)	0.0			0.0			15.0			0.0		
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1859	0	0	1874	1601
Flt Permitted		0.613			0.825		0.242				0.944	
Satd. Flow (perm)	0	1155	1601	0	1437	0	456	1859	0	0	1778	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			10				139
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	343	66	0	212	0	30	324	0	0	610	254
Number of Detectors	1	1	1	1	1		1	1		1	1	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position (m)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size (m)	2.0	10.0	2.0	2.0	10.0		2.0	10.0		2.0	10.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	32.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	53.3%
Maximum Green (s)	23.0	23.0	23.0	23.0	23.0		27.0	27.0		27.0	27.0	27.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0			4.0		4.0	4.0		4.0		4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		20.8			20.8			24.5			24.5	
Actuated g/C Ratio		0.39			0.39			0.46			0.46	
v/c Ratio		0.76			0.34			0.14			0.38	

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 7

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 3
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	28.9	4.1		7.7			11.3	11.3			19.8	5.9
Queue Delay	0.0	0.0		0.0			0.0	0.0			0.0	0.0
Total Delay	28.9	4.1		7.7			11.3	11.3			19.8	5.9
LOS	C	A		A			B	B			B	A
Approach Delay	24.9			7.7			11.3				15.7	
Approach LOS	C			A			B				B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 53.5

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 74.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 3030: Riverside & Old Dollarton

→ Ø2	→ Ø4
28 s	32 s
← Ø6	← Ø8
28 s	32 s

Option 3 12:00 pm 06-05-2017
NS

Synchro 10 Report
Page 8

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 3
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	185	846	16	46	1538	67	81	47	34	114	68	299
Future Volume (vph)	185	846	16	46	1538	67	81	47	34	114	68	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1706	3388	0	1825	3440	0	1630	1627	0	1573	1607	0
Flt Permitted	0.058			0.302			0.169			0.641		
Satd. Flow (perm)	104	3388	0	580	3440	0	290	1627	0	1062	1607	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			28			150	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	203	948	0	51	1783	0	101	102	0	127	408	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2			6		3	8		7	4	
Permitted Phases	2			6			8			4		
Detector Phase	5	2		6	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0		25.0	25.0		8.0	29.0		8.0	29.0	
Total Split (s)	14.0	83.0		69.0	69.0		8.0	29.0		8.0	29.0	
Total Split (%)	11.7%	69.2%		57.5%	57.5%		6.7%	24.2%		6.7%	24.2%	
Maximum Green (s)	9.0	78.0		64.0	64.0		4.0	24.0		4.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		13.0		13.0	13.0			17.0			17.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	79.1	79.1		65.1	65.1		29.6	23.6		29.6	23.6	
Actuated g/C Ratio	0.67	0.67		0.55	0.55		0.25	0.20		0.25	0.20	

Option 3 12:00 pm 06-05-2017
NS













Synchro 10 Report
Page 9

Lanes, Volumes, Timings

3050: Riverside & Dollarton Hwy

Option 3

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
v/c Ratio	1.00	0.42		0.16	0.94		0.79	0.29		0.44	0.93	
Control Delay	94.3	10.0		15.6	37.1		74.9	31.3		40.7	58.1	
Queue Delay	0.0	0.0		0.0	4.9		0.0	0.0		0.0	0.0	
Total Delay	94.3	10.0		15.6	42.0		74.9	31.3		40.7	58.1	
LOS	F	B		B	D		E	C		D	E	
Approach Delay		24.9			41.3			53.0			54.0	
Approach LOS		C			D			D			D	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 118.7

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.00

Intersection Signal Delay: 38.7

Intersection LOS: D

Intersection Capacity Utilization 94.7%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 3050: Riverside & Dollarton Hwy

↗ Ø2	↖ Ø3	↘ Ø4
83 s	8 s	29 s
↖ Ø5	↗ Ø6	↘ Ø7
14 s	69 s	8 s
		29 s




















Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 3

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	797	109	20	1599	15	81	1	11	28	1	33
Future Volume (vph)	26	797	109	20	1599	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3514	0	1789	3575	0	0	1775	0	0	1797	1601
Flt Permitted	0.132			0.277				0.719			0.769	
Satd. Flow (perm)	249	3514	0	522	3575	0	0	1333	0	0	1448	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			2			12				36
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		242.5			340.8			214.7			160.0	
Travel Time (s)		18.2			25.6			16.1			12.0	
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	974	0	21	1682	0	0	100	0	0	49	55
Number of Detectors	1	1		1	1		1	1		1	1	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	32.3	32.3		32.3	32.3			9.6			9.6	9.6
Actuated g/C Ratio	0.76	0.76		0.76	0.76			0.22			0.22	0.22
v/c Ratio	0.15	0.37		0.05	0.62			0.32			0.15	0.14

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 3

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	7.2	4.3		4.8	7.3			16.0			14.9	8.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	7.2	4.3		4.8	7.3			16.0			14.9	8.8
LOS	A	A		A	A			B			B	A
Approach Delay		4.4			7.2			16.0			11.7	
Approach LOS		A			A			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 42.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 6.7

Intersection LOS: A

Intersection Capacity Utilization 66.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy

→ Ø2	↓ Ø4
31 s	29 s
← Ø6	↑ Ø8
31 s	29 s

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 12

Lanes, Volumes, Timings

6050: Dollarton Hwy & 2420 Dollarton

Option 3

Timing Plan: AM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	195	641	1407	53	20	227
Future Volume (vph)	195	641	1407	53	20	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	0
Taper Length (m)	0.0				0.0	
Satd. Flow (prot)	1789	3579	3561	0	1643	0
Flt Permitted	0.088				0.996	
Satd. Flow (perm)	166	3579	3561	0	1643	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			6		181	
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	217	712	1622	0	274	0
Number of Detectors	2	2	2		2	
Detector Template						
Leading Detector (m)	15.2	15.2	15.2		15.2	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	1.8	1.8	1.8		1.8	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)	13.4	13.4	13.4		13.4	
Detector 2 Size(m)	1.8	1.8	1.8		1.8	
Detector 2 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	
Detector 2 Channel						
Detector 2 Extend (s)	0.0	0.0	0.0		0.0	
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Detector Phase	7	4	8		6	
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0		7.0	
Minimum Split (s)	9.0	30.0	30.0		28.0	
Total Split (s)	13.0	61.0	48.0		29.0	
Total Split (%)	14.4%	67.8%	53.3%		32.2%	
Maximum Green (s)	8.0	56.0	43.0		24.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	Min	None		None	
Walk Time (s)		7.0	7.0		7.0	

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 13

Lanes, Volumes, Timings

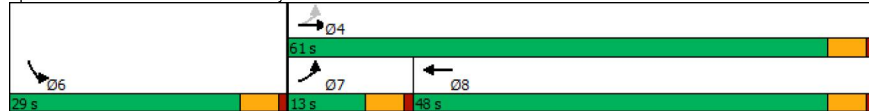
6050: Dollarton Hwy & 2420 Dollarton

Option 3

Timing Plan: AM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Flash Dont Walk (s)		12.0	12.0		12.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	53.3	53.3	40.2		10.9	
Actuated g/C Ratio	0.72	0.72	0.54		0.15	
v/c Ratio	0.74	0.28	0.84		0.70	
Control Delay	30.5	4.4	20.2		21.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	30.5	4.4	20.2		21.3	
LOS	C	A	C		C	
Approach Delay		10.5	20.2		21.3	
Approach LOS		B	C		C	
Intersection Summary						
Area Type:	Other					
Cycle Length: 90						
Actuated Cycle Length: 74.3						
Natural Cycle: 90						
Control Type: Actuated-Uncoordinated						
Maximum v/c Ratio: 0.84						
Intersection Signal Delay: 17.1	Intersection LOS: B					
Intersection Capacity Utilization 79.0%	ICU Level of Service D					
Analysis Period (min) 15						

Splits and Phases: 6050: Dollarton Hwy & 2420 Dollarton

























Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 14

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

Option 3

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	998	124	307	1492	52	39	9	122	74	82	370
Future Volume (vph)	179	998	124	307	1492	52	39	9	122	74	82	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.085			0.158			0.691			0.750		
Satd. Flow (perm)	160	3579	1601	298	3579	1601	1301	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			107			173			402
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.6			116.0			119.3			142.6	
Travel Time (s)		6.0			7.0			8.9			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1085	135	334	1622	57	49	11	153	82	91	411
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	12.0	39.9	39.9	21.4	49.3	49.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	13.3%	44.3%	44.3%	23.8%	54.8%	54.8%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	5.9	34.3	34.3	15.8	43.7	43.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 15

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

Option 3

Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Flash Dont Walk (s)		12.0	12.0		10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	
Act Effct Green (s)	59.3	46.6	46.6	69.3	52.9	52.9	12.5	12.5	12.5	12.5	12.5	90.0
Actuated g/C Ratio	0.66	0.52	0.52	0.77	0.59	0.59	0.14	0.14	0.14	0.14	0.14	1.00
v/c Ratio	0.58	0.59	0.15	0.62	0.77	0.06	0.27	0.04	0.41	0.42	0.35	0.26
Control Delay	24.8	18.3	1.7	13.4	18.7	0.5	37.4	31.8	7.6	41.2	37.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	18.3	1.7	13.4	18.7	0.5	37.4	31.8	7.6	41.2	37.9	0.4
LOS	C	B	A	B	B	A	D	C	A	D	D	A
Approach Delay		17.6			17.3			15.7			12.0	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 16.6

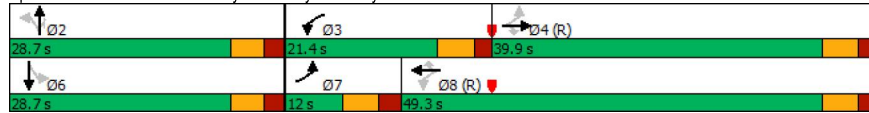
Intersection LOS: B

Intersection Capacity Utilization 71.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 16

Lanes, Volumes, Timings

7050: Dollarton Hwy & Berkley Road

Option 3

Timing Plan: AM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	248	414	1164	190	113	297
Future Volume (vph)	248	414	1164	190	113	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5			7.5		
Satd. Flow (prot)	1789	1883	1883	1601	1789	1601
Flt Permitted	0.057				0.950	
Satd. Flow (perm)	107	1883	1883	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				99		199
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	391.4		116.7	
Travel Time (s)		37.0	29.4		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	270	450	1265	207	123	323
Number of Detectors	1	2	2	1	1	1
Detector Template	Left	Thru	Thru	Right	Left	Right
Leading Detector (m)	2.0	10.0	10.0	2.0	2.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	0.6	2.0	2.0	2.0
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	15.0	85.0	70.0	70.0	25.0	25.0
Total Split (%)	13.6%	77.3%	63.6%	63.6%	22.7%	22.7%
Maximum Green (s)	10.0	80.0	65.0	65.0	20.0	20.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0

Option 3 12:00 pm 06-05-2017
NSSynchro 10 Report
Page 17

Lanes, Volumes, Timings
7050: Dollarton Hwy & Berkley Road

Option 3
Timing Plan: AM Peak

	EBL	EBT	WBT	WBR	SBL	SBR
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	80.0	80.0	65.0	65.0	20.0	20.0
Actuated g/C Ratio	0.73	0.73	0.59	0.59	0.18	0.18
v/c Ratio	1.17	0.33	1.14	0.21	0.38	0.71
Control Delay	143.6	6.1	97.2	5.8	43.5	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	143.6	6.1	97.2	5.8	43.5	25.8
LOS	F	A	F	A	D	C
Approach Delay		57.7	84.3		30.7	
Approach LOS		E	F		C	

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 110

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 68.0

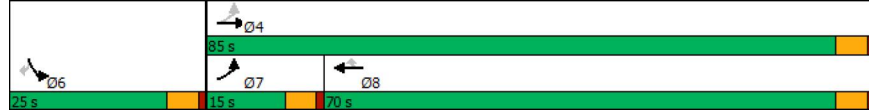
Intersection LOS: E

Intersection Capacity Utilization 93.8%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Berkley Road



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton

Option 3
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	96	106	2	3	259	88	18	1	20	94	0	181
Future Volume (Veh/h)	96	106	2	3	259	88	18	1	20	94	0	181
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	120	133	3	3	278	95	23	1	25	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)		235			201							
pX, platoon unblocked												
vC, conflicting volume	373			136			932	754	134	732	708	326
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	373			136			932	754	134	732	708	326
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			85	100	97	61	100	68
cM capacity (veh/h)	1159			1278			156	305	920	301	324	713

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	256	376	49	344
Volume Left	120	3	23	118
Volume Right	3	95	25	226
cSH	1159	1278	276	485
Volume to Capacity	0.10	0.00	0.18	0.71
Queue Length 95th (m)	2.6	0.1	4.8	42.3
Control Delay (s)	4.5	0.1	20.9	28.6
Lane LOS	A	A	C	D
Approach Delay (s)	4.5	0.1	20.9	28.6
Approach LOS			C	D

Intersection Summary

Average Delay 11.7

Intersection Capacity Utilization 59.1%

ICU Level of Service

B

Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 3
Timing Plan: AM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↗		↘	↗
Traffic Volume (veh/h)	133	30	150	71	52	396
Future Volume (Veh/h)	133	30	150	71	52	396
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	148	33	167	79	58	440
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			98		338	
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	762	206			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	753	190			230	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	58	96			96	
cM capacity (veh/h)	356	841			1321	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	181	246	498			
Volume Left	148	0	58			
Volume Right	33	79	0			
cSH	398	1700	1321			
Volume to Capacity	0.45	0.14	0.04			
Queue Length 95th (m)	17.5	0.0	1.0			
Control Delay (s)	21.4	0.0	1.3			
Lane LOS	C		A			
Approach Delay (s)	21.4	0.0	1.3			
Approach LOS	C					
Intersection Summary						
Average Delay		4.9				
Intersection Capacity Utilization		55.1%	ICU Level of Service	B		
Analysis Period (min)		15				







HCM Unsignalized Intersection Capacity Analysis
3020: Riverside & Windridge Dr

Option 3
Timing Plan: AM Peak

	↖	→	↘	↖	←	↖	↗	↑	↗	↘	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖				↗			↗	↘
Traffic Volume (veh/h)	10	0	35	73	0	29	0	553	18	12	705	0
Future Volume (Veh/h)	10	0	35	73	0	29	0	553	18	12	705	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	11	0	39	81	0	32	0	614	20	13	783	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)								264			113	
pX, platoon unblocked												
vC, conflicting volume	1465	1443	783	1472	1433	624	783			634		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1465	1443	783	1472	1433	624	783			634		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	90	13	100	93	100			99		
cM capacity (veh/h)	98	130	394	94	132	485	835			949		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	113	634	796								
Volume Left	11	81	0	13								
Volume Right	39	32	20	0								
cSH	237	121	1700	949								
Volume to Capacity	0.21	0.93	0.37	0.01								
Queue Length 95th (m)	5.9	45.7	0.0	0.3								
Control Delay (s)	24.2	131.8	0.0	0.4								
Lane LOS	C	F		A								
Approach Delay (s)	24.2	131.8	0.0	0.4								
Approach LOS	C	F										
Intersection Summary												
Average Delay			10.3									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									







HCM Unsignalized Intersection Capacity Analysis 3040: Riverside & Front St

Option 3
Timing Plan: AM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	39	36	255	419	146
Future Volume (Veh/h)	48	39	36	255	419	146
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	42	39	277	455	159
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked	0.78	0.76	0.76			
vC, conflicting volume	890	534	614			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	625	234	338			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	93	96			
cM capacity (veh/h)	335	614	931			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	94	316	614			
Volume Left	52	39	0			
Volume Right	42	0	159			
cSH	420	931	1700			
Volume to Capacity	0.22	0.04	0.36			
Queue Length 95th (m)	6.4	1.0	0.0			
Control Delay (s)	16.0	1.5	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.0	1.5	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay		1.9				
Intersection Capacity Utilization		55.5%		ICU Level of Service	B	
Analysis Period (min)		15				



















HCM Unsignalized Intersection Capacity Analysis 4030: Forester St & Old Dollarton

Option 3
Timing Plan: AM Peak

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	17	31	27	16	33	18
Future Volume (Veh/h)	17	31	27	16	33	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	34	30	18	37	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			53		114	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		114	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	98
cM capacity (veh/h)			1553		865	1037
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	53	48	57			
Volume Left	0	30	37			
Volume Right	34	0	20			
cSH	1700	1553	919			
Volume to Capacity	0.03	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	4.7	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.7	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay		4.7				
Intersection Capacity Utilization		19.0%		ICU Level of Service	A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Option 3
Timing Plan: AM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	1	1257	6	49	1846	7	1	0	31	12	0	6	
Future Volume (Veh/h)	1	1257	6	49	1846	7	1	0	31	12	0	6	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50	
Hourly flow rate (vph)	1	1397	7	54	2051	8	1	0	39	24	0	12	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)	284												
pX, platoon unblocked	0.62						0.62	0.62			0.62	0.62	0.62
vC, conflicting volume	2059	1404					2548	3570	702	2902	3569	1030	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1488	1404					2274	3915	702	2843	3914	0	
tC, single (s)	4.1	4.1					7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2	2.2					3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	100	89					92	100	90	0	100	98	
cM capacity (veh/h)	279	482					12	2	381	4	2	675	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	1	931	473	54	1367	692	40	36					
Volume Left	1	0	0	54	0	0	1	24					
Volume Right	0	0	7	0	0	8	39	12					
cSH	279	1700	1700	482	1700	1700	216	6					
Volume to Capacity	0.00	0.55	0.28	0.11	0.80	0.41	0.18	6.01					
Queue Length 95th (m)	0.1	0.0	0.0	2.9	0.0	0.0	5.0	Err					
Control Delay (s)	18.0	0.0	0.0	13.4	0.0	0.0	25.4	Err					
Lane LOS	C	B					D	F					
Approach Delay (s)	0.0	0.3					25.4	Err					
Approach LOS							D	F					
Intersection Summary													
Average Delay	100.6												
Intersection Capacity Utilization	65.4%			ICU Level of Service			C						
Analysis Period (min)	15												

Option 3 12:00 pm 06-05-2017
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 3
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↶↷		↰	↶↷			↷↰				↷↰
Traffic Volume (vph)	401	1618	46	37	1304	15	138	19	55	13	19	239
Future Volume (vph)	401	1618	46	37	1304	15	138	19	55	13	19	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3554	0	1690	3559	0	0	1778	1526	0	1883	1570
Flt Permitted	0.078			0.134				0.727			0.868	
Satd. Flow (perm)	147	3554	0	238	3559	0	0	1349	1526	0	1668	1570
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	5			1			69			266		
Link Speed (k/h)	48			48			48			48		
Link Distance (m)	69.3			68.7			223.8			98.7		
Travel Time (s)	5.2			5.2			16.8			7.4		
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	1751	0	44	1552	0	0	197	69	0	35	266
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	43.0	78.0		35.0	35.0		32.0	32.0	32.0	32.0	32.0	32.0
Total Split (%)	39.1%	70.9%		31.8%	31.8%		29.1%	29.1%	29.1%	29.1%	29.1%	29.1%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	74.2	74.2		47.0	47.0		20.7	20.7	20.7	20.7	20.7	20.7
Actuated g/C Ratio	0.72	0.72		0.46	0.46		0.20	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.89	0.68		0.41	0.95		0.73	0.19	0.73	0.10	0.50	0.50
Control Delay	47.9	10.4		41.3	43.8		54.3	9.3	54.3	9.3	33.2	7.7
Queue Delay	3.2	48.1		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	58.6		41.3	43.8		54.3	9.3	54.3	9.3	33.2	7.7
LOS	D	E		D	D		D	A	D	A	C	A
Approach Delay	57.1			43.7			42.6			10.7		
Approach LOS	E			D			D			B		
Queue Length 50th (m)	65.6	88.4		5.8	153.8		37.1	0.0	37.1	0.0	5.7	0.0
Queue Length 95th (m)	98.5	140.8		#23.7	#256.6		52.4	8.1	52.4	8.1	13.8	19.2
Internal Link Dist (m)	45.3			44.7			199.8			74.7		
Turn Bay Length (m)	20.0			75.0			15.0			30.0		
Base Capacity (vph)	730	2564		108	1626		368	466	368	466	455	621
Starvation Cap Reductn	209	1035		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.15		0.41	0.95		0.54	0.15	0.54	0.15	0.08	0.43

01-03-2018
NS

Synchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 3

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 102.9

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 48.1

Intersection LOS: D

Intersection Capacity Utilization 84.0%

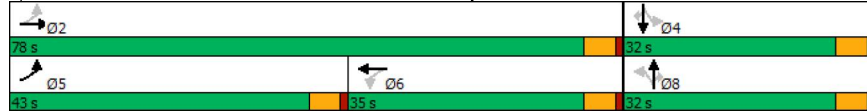
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings

3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Option 3

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	99	1342	322	290	717	61	165	101	502	44	55	71
Future Volume (vph)	99	1342	322	290	717	61	165	101	502	44	55	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	7.5			7.5			0.0			15.0		
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1725	0
Flt Permitted	0.307			0.049			0.314			0.676		
Satd. Flow (perm)	578	3475	0	179	3579	1601	591	1883	1601	1273	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				170			344		39	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	322	797	68	206	126	628	55	158	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	19.8	82.0		12.0	74.2	74.2	20.6	32.0		19.0	30.4	
Total Split (%)	13.7%	56.6%		8.3%	51.2%	51.2%	14.2%	22.1%		13.1%	21.0%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	89.4	78.5		96.7	83.8	82.3	38.0	25.6	145.0	29.1	17.9	
Actuated g/C Ratio	0.62	0.54		0.67	0.58	0.57	0.26	0.18	1.00	0.20	0.12	
v/c Ratio	0.27	1.07		0.66	0.39	0.07	0.71	0.38	0.39	0.19	0.64	
Control Delay	10.6	75.0		40.4	18.2	0.1	57.7	56.8	0.7	40.4	56.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	10.6	75.0		40.4	18.2	0.1	57.7	56.8	0.7	40.4	56.5	
LOS	B	E		D	B	A	E	E	A	D	E	
Approach Delay		71.4			23.2			20.3			52.3	
Approach LOS		E			C			C			D	
Queue Length 50th (m)	11.1	~339.4		29.6	62.9	0.0	49.4	33.0	0.0	12.1	33.0	
Queue Length 95th (m)	19.1	#319.4		#65.4	90.0	0.0	60.0	45.2	0.0	19.4	46.2	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0	50.0		
Base Capacity (vph)	505	1894		487	2068	982	292	370	1601	342	345	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.24	1.07		0.66	0.39	0.07	0.71	0.34	0.39	0.16	0.46	

01-03-2018
NSSynchro 10 Report
Page 401-03-2018
NSSynchro 10 Report
Page 5

Lanes, Volumes, Timings

3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Option 3

Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	145
Actuated Cycle Length:	145
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.07
Intersection Signal Delay:	46.9
Intersection LOS:	D
Intersection Capacity Utilization:	85.4%
ICU Level of Service:	E
Analysis Period (min)	15
~ Volume exceeds capacity, queue is theoretically infinite.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

Ø1	Ø2 (R)	Ø3	Ø4
12 s	82 s	20.6 s	30.4 s
Ø5	Ø6 (R)	Ø7	Ø8
19.8 s	74.2 s	19 s	32 s

01-03-2018
NSSynchro 10 Report
Page 6

Lanes, Volumes, Timings

3030: Riverside & Old Dollarton

Option 3

Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↗	↖	↗	↖	↗	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖	↗	↖	↗			↖	↗
Traffic Volume (vph)	202	30	37	27	19	80	52	524	70	77	254	318
Future Volume (vph)	202	30	37	27	19	80	52	524	70	77	254	318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	0.0			0.0			0.0			0.0		
Satd. Flow (prot)	0	1804	1601	0	1703	0	1789	1850	0	0	1861	1601
Flt Permitted		0.709			0.894		0.489				0.650	
Satd. Flow (perm)	0	1335	1601	0	1539	0	921	1850	0	0	1224	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			46		94			16				353
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	46	0	148	0	55	631	0	0	368	353
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		35.0	35.0		35.0	35.0	35.0
Total Split (%)	41.7%	41.7%	41.7%	41.7%	41.7%		58.3%	58.3%		58.3%	58.3%	58.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Act Effct Green (s)		16.9	16.9		16.9		24.2	24.2		24.2	24.2	24.2
Actuated g/C Ratio		0.34	0.34		0.34		0.49	0.49		0.49	0.49	0.49
v/c Ratio		0.64	0.08		0.25		0.12	0.69		0.61	0.37	
Control Delay		22.3	5.3		7.4		8.3	14.6		15.1	2.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		22.3	5.3		7.4		8.3	14.6		15.1	2.3	
LOS		C	A		A		A	B		B	A	
Approach Delay		20.0			7.4			14.1			8.8	
Approach LOS		B			A			B			A	
Queue Length 50th (m)		20.8	0.0		3.1		2.5	39.5		22.5	0.0	
Queue Length 95th (m)		40.7	4.3		12.8		7.6	75.8		48.7	9.9	
Internal Link Dist (m)		176.9			263.8			113.8		240.2		
Turn Bay Length (m)			45.0								15.0	
Base Capacity (vph)		590	734		733		601	1214		799	1168	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.49	0.06		0.20		0.09	0.52		0.46	0.30	

01-03-2018
NSSynchro 10 Report
Page 7

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 3
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 49.4	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 12.6	Intersection LOS: B
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3030: Riverside & Old Dollarton

→ Ø2	↓ Ø4
25 s	35 s
← Ø6	↑ Ø8
25 s	35 s

01-03-2018
NS

Synchro 10 Report
Page 8

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 3
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↕	↕	↕
Traffic Volume (vph)	435	1205	9	25	1112	91	60	44	51	117	28	157
Future Volume (vph)	435	1205	9	25	1112	91	60	44	51	117	28	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1807	3603	0	1825	3484	0	0	1794	1633	0	1734	1617
Flt Permitted	0.108			0.202				0.643			0.673	
Satd. Flow (perm)	205	3603	0	388	3484	0	0	1186	1633	0	1215	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			11				85			224
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	483	1349	0	28	1337	0	0	116	57	0	207	224
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	24.0	61.0		37.0	37.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	26.7%	67.8%		41.1%	41.1%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Act Effct Green (s)	57.2	57.2		33.1	33.1			19.5	19.5		19.5	19.5
Actuated g/C Ratio	0.68	0.68		0.39	0.39			0.23	0.23		0.23	0.23
v/c Ratio	0.93	0.55		0.19	0.98			0.43	0.13		0.74	0.41
Control Delay	50.3	8.9		22.9	46.8			32.5	3.4		46.7	6.2
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	50.3	8.9		22.9	46.8			32.5	3.4		46.7	6.2
LOS	D	A		C	D			C	A		D	A
Approach Delay		19.8			46.3			22.9			25.7	
Approach LOS		B			D			C			C	
Queue Length 50th (m)	60.8	53.6		3.0	110.8			16.0	0.0		31.1	0.0
Queue Length 95th (m)	#129.9	82.2		10.0	#173.1			30.9	4.7		39.2	5.4
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0					25.0			
Base Capacity (vph)	518	2433		151	1368			351	543		359	636
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.93	0.55		0.19	0.98			0.33	0.10		0.58	0.35

01-03-2018
NS

Synchro 10 Report
Page 9

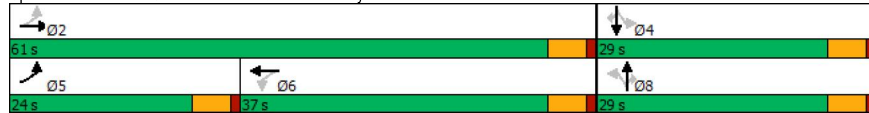
Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 3
Timing Plan: PM Peak

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 84.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 30.1 Intersection LOS: C
Intersection Capacity Utilization 82.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside & Dollarton Hwy



01-03-2018
NS

Synchro 10 Report
Page 10

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Option 3
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱	↱	↰	↱	↱	↰	↱	↱	↰	↱	↱
Traffic Volume (vph)	24	1452	24	8	938	23	176	4	9	31	0	17
Future Volume (vph)	24	1452	24	8	938	23	176	4	9	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	7.5			7.5			0.0			0.0		
Satd. Flow (prot)	1789	3571	0	1789	3564	0	0	1788	0	0	1789	1601
Flt Permitted	0.222			0.135				0.712			0.738	
Satd. Flow (perm)	418	3571	0	254	3564	0	0	1333	0	0	1390	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			5				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1604	0	9	1068	0	0	210	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	30.6	30.6		30.6	30.6		13.6			13.5	13.5	
Actuated g/C Ratio	0.63	0.63		0.63	0.63		0.28			0.28	0.28	
v/c Ratio	0.10	0.71		0.06	0.47		0.56			0.10	0.04	
Control Delay	8.1	12.5		8.0	8.1		20.5			12.9	3.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Total Delay	8.1	12.5		8.0	8.1		20.5			12.9	3.4	
LOS	A	B		A	A		C			B	A	
Approach Delay		12.4			8.1		20.5			9.6		
Approach LOS		B			A		C			A		
Queue Length 50th (m)	0.9	49.9		0.3	26.1		14.8			2.5	0.0	
Queue Length 95th (m)	5.0	#120.0		2.5	53.5		30.1			6.5	1.9	
Internal Link Dist (m)		218.5			316.8		190.7			136.0		
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	264	2257		160	2254		694			722	849	
Starvation Cap Reductn	0	0		0	0		0			0	0	
Spillback Cap Reductn	0	0		0	0		0			0	0	
Storage Cap Reductn	0	0		0	0		0			0	0	
Reduced v/c Ratio	0.10	0.71		0.06	0.47		0.30			0.05	0.02	

01-03-2018
NS

Synchro 10 Report
Page 11

Lanes, Volumes, Timings
4050: Forester St & Dollarton Hwy

Option 3
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	48.5
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.71
Intersection Signal Delay:	11.4
Intersection Capacity Utilization:	64.7%
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 4050: Forester St & Dollarton Hwy

→ Ø2	↓ Ø4
← Ø6	↑ Ø8
31 s	29 s
31 s	29 s

01-03-2018
NS

Synchro 10 Report
Page 12

Lanes, Volumes, Timings
6050: Dollarton Hwy & 2420 Dollarton

Option 3
Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗		↖	↖
Traffic Volume (vph)	163	1331	669	25	75	300
Future Volume (vph)	163	1331	669	25	75	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	0
Taper Length (m)	0.0				0.0	
Satd. Flow (prot)	1789	3579	3561	0	1663	0
Flt Permitted	0.246				0.990	
Satd. Flow (perm)	463	3579	3561	0	1663	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			5		243	
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	1447	754	0	408	0
Turn Type	pm+pt	NA	NA		Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4					
Detector Phase	7	4	8		6	
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0		7.0	
Minimum Split (s)	9.0	30.0	30.0		24.0	
Total Split (s)	15.0	54.0	39.0		36.0	
Total Split (%)	16.7%	60.0%	43.3%		40.0%	
Yellow Time (s)	4.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0	5.0	5.0		5.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Recall Mode	None	Min	None		None	
Act Effct Green (s)	40.9	40.9	27.0		13.4	
Actuated g/C Ratio	0.63	0.63	0.42		0.21	
v/c Ratio	0.37	0.64	0.51		0.76	
Control Delay	8.3	9.8	16.3		19.8	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay	8.3	9.8	16.3		19.8	
LOS	A	A	B		B	
Approach Delay		9.6	16.3		19.8	
Approach LOS		A	B		B	
Queue Length 50th (m)	6.9	44.6	32.5		16.8	
Queue Length 95th (m)	20.4	97.8	61.2		49.8	
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0					
Base Capacity (vph)	504	2782	1923		941	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.35	0.52	0.39		0.43	

01-03-2018
NS

Synchro 10 Report
Page 13

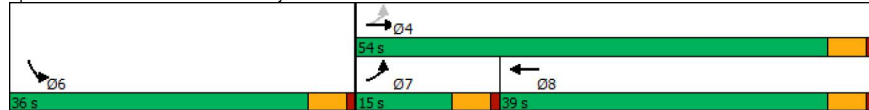
Lanes, Volumes, Timings
6050: Dollarton Hwy & 2420 Dollarton

Option 3
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 64.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 12.9	Intersection LOS: B
Intersection Capacity Utilization 67.8%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6050: Dollarton Hwy & 2420 Dollarton



01-03-2018
NS

Synchro 10 Report
Page 14

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 3
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↗	↘	↩	↗	↘	↩	↗	↘	↩	↗	↘
Traffic Volume (vph)	412	1292	196	123	850	56	96	9	297	31	65	138
Future Volume (vph)	412	1292	196	123	850	56	96	9	297	31	65	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.108			0.130			0.715			0.749		
Satd. Flow (perm)	203	3579	1601	245	3579	1601	1347	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203			175			246			242
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			116.5			145.4	
Travel Time (s)		6.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1389	363	195	977	66	116	13	430	39	65	160
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	26.0	46.3	46.3	15.0	35.3	35.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	28.9%	51.4%	51.4%	16.7%	39.2%	39.2%	31.9%	31.9%	31.9%	31.9%	31.9%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max	Max	
Act Effct Green (s)	55.2	41.1	41.1	39.8	30.8	30.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.46	0.46	0.44	0.34	0.34	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.91	0.85	0.43	0.74	0.80	0.10	0.34	0.03	0.73	0.11	0.14	0.10
Control Delay	48.9	28.2	8.7	37.7	33.2	0.3	30.7	25.4	20.9	26.7	26.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	28.2	8.7	37.7	33.2	0.3	30.7	25.4	20.9	26.7	26.8	0.1
LOS	D	C	A	D	C	A	C	C	C	C	C	A
Approach Delay		28.9			32.1			23.0			10.6	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	53.7	109.2	16.3	16.5	81.1	0.0	16.4	1.7	28.2	5.2	8.7	0.0
Queue Length 95th (m)	#104.6	139.2	9.8	19.8	100.0	0.0	28.3	4.7	31.5	11.4	18.6	0.0
Internal Link Dist (m)		75.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0		30.0		30.0	
Base Capacity (vph)	475	1635	841	270	1225	662	344	481	592	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.85	0.43	0.72	0.80	0.10	0.34	0.03	0.73	0.11	0.14	0.10

01-03-2018
NS

Synchro 10 Report
Page 15

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 3
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.91
Intersection Signal Delay:	27.9
Intersection LOS:	C
Intersection Capacity Utilization	74.1%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road

--	--

01-03-2018
NS

Synchro 10 Report
Page 16

Lanes, Volumes, Timings
7050: Dollarton Hwy & Berkley Road

Option 3
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	375	1031	465	87	257	228
Future Volume (vph)	375	1031	465	87	257	228
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	7.5				7.5	
Satd. Flow (prot)	1789	1883	1883	1601	1789	1601
Flt Permitted	0.257				0.950	
Satd. Flow (perm)	484	1883	1883	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				95		248
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	437.4		116.7	
Travel Time (s)		37.0	32.8		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	408	1121	505	95	279	248
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	22.0	65.0	43.0	43.0	25.0	25.0
Total Split (%)	24.4%	72.2%	47.8%	47.8%	27.8%	27.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	None
Act Effct Green (s)	52.8	52.8	33.5	33.5	16.5	16.5
Actuated g/C Ratio	0.66	0.66	0.42	0.42	0.21	0.21
v/c Ratio	0.74	0.90	0.64	0.13	0.75	0.47
Control Delay	16.2	23.3	23.4	4.2	44.8	7.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.2	23.3	23.4	4.2	44.8	7.4
LOS	B	C	C	A	D	A
Approach Delay		21.4	20.3		27.2	
Approach LOS		C	C		C	
Queue Length 50th (m)	25.8	135.5	61.8	0.0	44.3	0.0
Queue Length 95th (m)	50.4	#252.3	99.9	8.3	#76.0	18.0
Internal Link Dist (m)		469.5	413.4		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	607	1457	934	842	461	596
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.77	0.54	0.11	0.61	0.42

01-03-2018
NS

Synchro 10 Report
Page 17

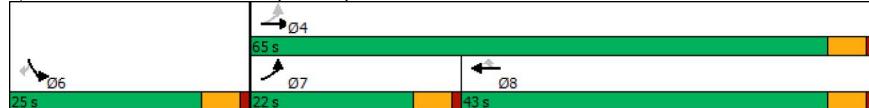
Lanes, Volumes, Timings
7050: Dollarton Hwy & Berkley Road

Option 3
Timing Plan: PM Peak

Intersection Summary

















Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 79.6	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 22.3	Intersection LOS: C
Intersection Capacity Utilization 76.8%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7050: Dollarton Hwy & Berkley Road



HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton

Option 3
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	150	12	10	209	84	11	0	27	82	0	158
Future Volume (Veh/h)	145	150	12	10	209	84	11	0	27	82	0	158
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	165	24	22	240	125	22	0	50	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None				None							
Median storage veh												
Upstream signal (m)	235				201							
pX, platoon unblocked												
vC, conflicting volume	365			189			1178			948		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	365			189			1178			948		
tC, single (s)	4.1			4.1			7.1			6.5		
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5			4.0		
p0 queue free %	85			98			75			100		
cM capacity (veh/h)	1199			1397			89			220		
	871			202			232			737		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	370	387	72	419								
Volume Left	181	22	22	126								
Volume Right	24	125	50	293								
cSH	1199	1397	236	411								
Volume to Capacity	0.15	0.02	0.30	1.02								
Queue Length 95th (m)	4.0	0.4	9.4	99.4								
Control Delay (s)	4.9	0.6	26.8	82.1								
Lane LOS	A	A	D	F								
Approach Delay (s)	4.9	0.6	26.8	82.1								
Approach LOS			D	F								
Intersection Summary												
Average Delay				30.7								
Intersection Capacity Utilization				63.5%	ICU Level of Service			B				
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 3
Timing Plan: PM Peak

	←	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↘	↗
Traffic Volume (veh/h)	56	59	253	155	171	182
Future Volume (Veh/h)	56	59	253	155	171	182
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	62	66	281	172	190	202
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.92	0.92			0.92	
vC, conflicting volume	949	367			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	898	263			357	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	74	91			83	
cM capacity (veh/h)	235	711			1101	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	128	453	392			
Volume Left	62	0	190			
Volume Right	66	172	0			
cSH	358	1700	1101			
Volume to Capacity	0.36	0.27	0.17			
Queue Length 95th (m)	12.0	0.0	4.7			
Control Delay (s)	20.5	0.0	5.2			
Lane LOS	C		A			
Approach Delay (s)	20.5	0.0	5.2			
Approach LOS	C					
Intersection Summary						
Average Delay		4.8				
Intersection Capacity Utilization		58.5%	ICU Level of Service	B		
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
3020: Riverside & Windridge Dr

Option 3
Timing Plan: PM Peak

	↖	→	↘	↖	←	↖	↗	↑	↗	↘	↓	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖				↑			↗	↖
Traffic Volume (veh/h)	5	0	10	27	0	21	0	745	55	25	642	0
Future Volume (Veh/h)	5	0	10	27	0	21	0	745	55	25	642	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	6	0	11	45	0	35	0	931	69	26	676	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None		None		
Median storage (veh)												
Upstream signal (m)								264			113	
pX, platoon unblocked	0.80	0.80	0.94	0.80	0.80	0.77	0.94			0.77		
vC, conflicting volume	1728	1728	676	1704	1694	966	676			1000		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1615	1614	623	1585	1571	807	623			852		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	98	32	100	88	100			96		
cM capacity (veh/h)	57	80	457	66	85	294	900			607		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	80	1000	702								
Volume Left	6	45	0	26								
Volume Right	11	35	69	0								
cSH	132	100	1700	607								
Volume to Capacity	0.13	0.80	0.59	0.04								
Queue Length 95th (m)	3.3	33.1	0.0	1.0								
Control Delay (s)	36.4	117.7	0.0	1.2								
Lane LOS	E	F		A								
Approach Delay (s)	36.4	117.7	0.0	1.2								
Approach LOS	E	F										
Intersection Summary												
Average Delay			6.0									
Intersection Capacity Utilization			Err%	ICU Level of Service	H							
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis 3040: Riverside & Front St

Option 3
Timing Plan: PM Peak

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	137	81	64	492	149	137
Future Volume (Veh/h)	137	81	64	492	149	137
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	71	547	166	152
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	658	159	318			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	658	159	318			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	59	90	94			
cM capacity (veh/h)	375	858	1239			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	253	365	111	207	
Volume Left	152	71	0	0	0	
Volume Right	90	0	0	0	152	
cSH	474	1239	1700	1700	1700	
Volume to Capacity	0.51	0.06	0.21	0.07	0.12	
Queue Length 95th (m)	21.7	1.4	0.0	0.0	0.0	
Control Delay (s)	20.2	2.6	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	20.2	1.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay		4.7				
Intersection Capacity Utilization		46.5%		ICU Level of Service	A	
Analysis Period (min)		15				

01-03-2018
NS

Synchro 10 Report
Page 4

HCM Unsignalized Intersection Capacity Analysis 6010: Browning Pl & Mt Seymour Pkwy

Option 3
Timing Plan: PM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	12	1873	8	24	1053	7	1	0	20	8	0	14
Future Volume (Veh/h)	12	1873	8	24	1053	7	1	0	20	8	0	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70
Hourly flow rate (vph)	13	1993	9	27	1170	8	2	0	40	11	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					284							
pX, platoon unblocked	0.76						0.76	0.76		0.76	0.76	0.76
vC, conflicting volume	1178			2002			2682	3256	1001	2290	3256	589
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	598			2002			2581	3337	1001	2065	3337	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			90			77	100	83	40	100	98
cM capacity (veh/h)	739			282			9	5	241	18	5	823
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	13	1329	673	27	780	398	42	31				
Volume Left	13	0	0	27	0	0	2	11				
Volume Right	0	0	9	0	0	8	40	20				
cSH	739	1700	1700	282	1700	1700	105	49				
Volume to Capacity	0.02	0.78	0.40	0.10	0.46	0.23	0.40	0.63				
Queue Length 95th (m)	0.4	0.0	0.0	2.4	0.0	0.0	12.6	18.6				
Control Delay (s)	10.0	0.0	0.0	19.1	0.0	0.0	60.6	160.1				
Lane LOS	A			C			F	F				
Approach Delay (s)	0.1			0.4			60.6	160.1				
Approach LOS							F	F				
Intersection Summary												
Average Delay				2.5								
Intersection Capacity Utilization				63.4%			ICU Level of Service	B				
Analysis Period (min)				15								

01-03-2018
NS





















Synchro 10 Report
Page 5

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Recommended Network

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	1052	114	96	1890	10	94	27	60	18	62	316
Future Volume (vph)	179	1052	114	96	1890	10	94	27	60	18	62	316
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.070			0.216				0.696			0.921	
Satd. Flow (perm)	118	3341	0	411	3507	0	0	1224	1408	0	1769	1601
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		24			1				76			151
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1281	0	100	1979	0	0	127	63	0	101	395
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	13.0	70.0		57.0	57.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	13.0%	70.0%		57.0%	57.0%		30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	66.2	66.2		53.2	53.2		20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.70	0.70		0.56	0.56		0.22	0.22		0.22	0.22	
v/c Ratio	0.88	0.55		0.43	1.01		0.48	0.17		0.26	0.85	
Control Delay	60.5	8.6		21.4	44.7		38.3	6.5		31.9	39.0	
Queue Delay	0.0	27.4		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	60.5	36.0		21.4	44.7		38.3	6.5		31.9	39.0	
LOS	E	D		C	D		D	A		C	D	
Approach Delay		39.3			43.6			27.7			37.6	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	22.5	55.3		10.5	~209.1		20.3	0.0		15.4	44.0	
Queue Length 95th (m)	#66.2	80.2		27.5	#267.3		37.2	7.6		25.3	62.9	
Internal Link Dist (m)		45.3			44.7			199.8			74.2	
Turn Bay Length (m)	20.0			75.0				15.0			30.0	
Base Capacity (vph)	223	2339		230	1965		336	442		486	549	
Starvation Cap Reductn	0	1113		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.88	1.04		0.43	1.01		0.38	0.14		0.21	0.72	

01-03-2018
NSSynchro 10 Report
Page 3

Lanes, Volumes, Timings













2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Recommended Network

Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	94.9
Natural Cycle:	100
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	1.01
Intersection Signal Delay:	40.7
Intersection LOS:	D
Intersection Capacity Utilization:	88.8%
ICU Level of Service:	E
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

					
70 s			30 s		
					
13 s			57 s		30 s

01-03-2018
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Recommended Network
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩↪	↩	↩	↩↪	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	36	833	270	270	1439	42	228	49	312	115	73	115
Future Volume (vph)	36	833	270	270	1439	42	228	49	312	115	73	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3446	0	1789	3579	1601	1789	1883	1601	1789	1710	0
Flt Permitted	0.091			0.084			0.338			0.681		
Satd. Flow (perm)	171	3446	0	158	3579	1601	637	1883	1601	1283	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45				161			370		68	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	300	1599	47	285	61	390	144	235	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	44.0		20.0	52.6	52.6	15.6	33.0		13.0	30.4	
Total Split (%)	10.4%	40.0%		18.2%	47.8%	47.8%	14.2%	30.0%		11.8%	27.6%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	52.3	44.2		67.6	60.2	58.7	30.2	20.4	110.0	29.1	18.8	
Actuated g/C Ratio	0.48	0.40		0.61	0.55	0.53	0.27	0.19	1.00	0.26	0.17	
v/c Ratio	0.20	0.87		0.78	0.82	0.05	0.96	0.17	0.24	0.36	0.68	
Control Delay	13.9	38.2		41.5	27.3	0.1	78.3	35.9	0.4	30.1	39.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	13.9	38.2		41.5	27.3	0.1	78.3	35.9	0.4	30.1	39.2	
LOS	B	D		D	C	A	E	D	A	C	D	
Approach Delay		37.4			28.8			33.5			35.8	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	3.1	129.1		43.7	156.4	0.0	49.9	11.0	0.0	23.0	33.9	
Queue Length 95th (m)	8.7	#175.9		#98.9	#232.6	0.0	#58.5	18.1	0.0	30.7	46.0	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0		25.0	50.0			
Base Capacity (vph)	199	1412		384	1959	929	296	496	1601	397	462	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.87		0.78	0.82	0.05	0.96	0.12	0.24	0.36	0.51	

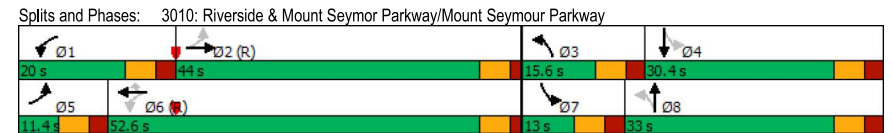
01-03-2018
NS

Synchro 10 Report
Page 5

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Recommended Network
Timing Plan: AM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	110
Actuated Cycle Length:	110
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	105
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.96
Intersection Signal Delay:	32.7
Intersection LOS:	C
Intersection Capacity Utilization:	83.5%
ICU Level of Service:	E
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.	



01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road/Old Dollarton

Recommended Network

Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖		↖	↗		↖	↗	
Traffic Volume (vph)	229	10	46	45	22	82	25	267	24	51	444	190
Future Volume (vph)	229	10	46	45	22	82	25	267	24	51	444	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1859	0	1789	1799	0
Flt Permitted		0.612			0.826		0.164			0.508		
Satd. Flow (perm)	0	1153	1601	0	1439	0	309	1859	0	957	1799	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			10			47	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	66	0	212	0	28	324	0	56	697	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	
Total Split (s)	29.0	29.0	29.0	29.0	29.0		31.0	31.0		31.0	31.0	
Total Split (%)	48.3%	48.3%	48.3%	48.3%	48.3%		51.7%	51.7%		51.7%	51.7%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	
Act Effct Green (s)		21.3	21.3		21.3		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.39	0.39		0.39		0.45	0.45		0.45	0.45	
v/c Ratio		0.75	0.10		0.33		0.20	0.38		0.13	0.83	
Control Delay		27.0	3.8		7.4		14.5	11.8		10.5	24.0	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		27.0	3.8		7.4		14.5	11.8		10.5	24.0	
LOS		C	A		A		B	B		B	C	
Approach Delay		23.3			7.4			12.0			23.0	
Approach LOS		C			A			B			C	
Queue Length 50th (m)		29.6	0.0		6.2		1.8	21.5		3.4	59.4	
Queue Length 95th (m)		38.0	3.4		11.2		6.8	37.9		9.0	#118.8	
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0				30.0			30.0		
Base Capacity (vph)		550	798		747		159	962		492	949	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.62	0.08		0.28		0.18	0.34		0.11	0.73	

01-03-2018
NSSynchro 10 Report
Page 7

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road/Old Dollarton

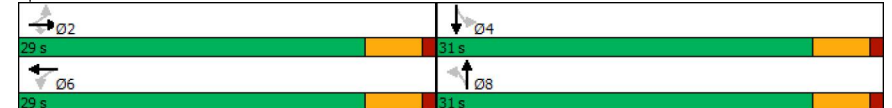
Recommended Network

Timing Plan: AM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	54
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	18.9
Intersection Capacity Utilization:	68.9%
ICU Level of Service:	C
Analysis Period (min):	15
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside Drive & Old Dollarton Road/Old Dollarton

01-03-2018
NSSynchro 10 Report
Page 8

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Recommended Network

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	185	846	16	46	1618	87	81	47	34	114	68	250
Future Volume (vph)	185	846	16	46	1618	87	81	47	34	114	68	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1706	3388	0	1825	3430	0	1630	1627	0	0	1644	1570
Flt Permitted	0.059			0.302			0.356				0.750	
Satd. Flow (perm)	106	3388	0	580	3430	0	611	1627	0	0	1271	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			7			28				183
Link Speed (k/h)		48			48			48				48
Link Distance (m)		213.9			242.5			117.5				105.2
Travel Time (s)		16.0			18.2			8.8				7.9
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	203	948	0	51	1895	0	101	102	0	0	203	278
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	Perm
Protected Phases	5	2			6		3	8		7		4
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		6	6		3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		4.0	7.0		4.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		8.0	29.0		8.0	29.0	29.0
Total Split (s)	16.0	83.0		67.0	67.0		8.0	29.0		8.0	29.0	29.0
Total Split (%)	13.3%	69.2%		55.8%	55.8%		6.7%	24.2%		6.7%	24.2%	24.2%
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	Yes
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Act Effct Green (s)	79.1	79.1		63.5	63.5		31.5	30.5		22.5	22.5	22.5
Actuated g/C Ratio	0.67	0.67		0.54	0.54		0.27	0.26		0.19	0.19	0.19
v/c Ratio	0.89	0.42		0.16	1.02		0.49	0.23		0.84	0.62	0.62
Control Delay	67.0	9.7		16.5	54.3		42.6	25.7		73.9	21.6	21.6
Queue Delay	0.0	0.0		0.0	10.2		0.0	0.0		0.0	0.0	0.0
Total Delay	67.0	9.7		16.5	64.4		42.6	25.7		73.9	21.6	21.6
LOS	E	A		B	E		D	C		E	C	C
Approach Delay		19.8			63.2			34.1			43.7	
Approach LOS		B			E			C			D	
Queue Length 50th (m)	32.6	51.0		6.0	~256.0		18.2	13.3		45.4	19.0	
Queue Length 95th (m)	#75.3	63.4		13.7	#298.7		28.7	23.4		#81.2	47.2	
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0								
Base Capacity (vph)	234	2279		313	1855		207	446		270	477	
Starvation Cap Reductn	0	0		0	50		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.87	0.42		0.16	1.05		0.49	0.23		0.75	0.58	

01-03-2018
NSSynchro 10 Report
Page 9

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Recommended Network

Timing Plan: AM Peak

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 117.6

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 45.9

Intersection LOS: D

Intersection Capacity Utilization 84.3%

ICU Level of Service E

Analysis Period (min) 15

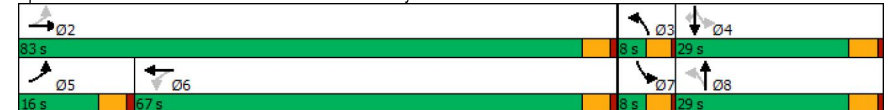
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside Drive & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Recommended Network

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱			↰↱			↰↱	↰
Traffic Volume (vph)	26	797	109	20	1699	15	81	1	11	28	1	33
Future Volume (vph)	26	797	109	20	1699	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3514	0	1789	3575	0	0	1775	0	0	1797	1601
Flt Permitted	0.092			0.273				0.719			0.738	
Satd. Flow (perm)	173	3514	0	514	3575	0	0	1333	0	0	1390	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			2			7				27
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	974	0	21	1786	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	69.0	69.0		69.0	69.0		31.0	31.0		31.0	31.0	31.0
Total Split (%)	69.0%	69.0%		69.0%	69.0%		31.0%	31.0%		31.0%	31.0%	31.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	44.6	44.6		44.6	44.6			11.8			11.8	11.8
Actuated g/C Ratio	0.74	0.74		0.74	0.74			0.20			0.20	0.20
v/c Ratio	0.22	0.37		0.06	0.68			0.38			0.18	0.17
Control Delay	9.3	4.5		4.2	7.7			27.6			25.8	16.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	9.3	4.5		4.2	7.7			27.6			25.8	16.8
LOS	A	A		A	A			C			C	B
Approach Delay		4.7			7.7			27.6			21.0	
Approach LOS		A			A			C			C	
Queue Length 50th (m)	1.0	18.9		0.6	52.4			8.4			4.3	2.4
Queue Length 95th (m)	5.6	36.8		3.0	99.3			27.2			10.3	7.2
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	164	3329		486	3385			630			654	767
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.17	0.29		0.04	0.53			0.16			0.07	0.07

01-03-2018
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

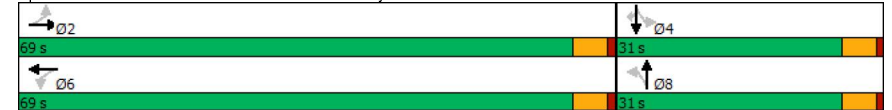
Recommended Network

Timing Plan: AM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	60.5
Natural Cycle:	70
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	7.8
Intersection Capacity Utilization:	69.1%
Intersection LOS:	A
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 4050: Forester St & Dollarton Hwy













01-03-2018
NSSynchro 10 Report
Page 12

Lanes, Volumes, Timings

6050: Dollarton Hwy & Berkley Road

Recommended Network

Timing Plan: AM Peak

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	332	504	1248	182	100	486
Future Volume (vph)	332	504	1248	182	100	486
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1668	1521
Flt Permitted	0.100				0.984	
Satd. Flow (perm)	188	3579	3579	1601	1668	1521
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)				140	107	319
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						41%
Lane Group Flow (vph)	369	560	1387	202	332	319
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	21.0	62.0	41.0	41.0	28.0	28.0
Total Split (%)	23.3%	68.9%	45.6%	45.6%	31.1%	31.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	None	None	None	None
Act Effct Green (s)	56.1	56.1	35.1	35.1	16.8	16.8
Actuated g/C Ratio	0.68	0.68	0.42	0.42	0.20	0.20
v/c Ratio	0.85	0.23	0.92	0.27	0.79	0.57
Control Delay	40.1	6.1	34.9	7.1	34.8	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.1	6.1	34.9	7.1	34.8	7.7
LOS	D	A	C	A	C	A
Approach Delay		19.6	31.3		21.6	
Approach LOS		B	C		C	
Queue Length 50th (m)	41.6	16.4	108.8	5.9	34.5	0.0
Queue Length 95th (m)	#97.3	27.2	#168.5	19.9	63.3	20.3
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	438	2477	1564	778	542	654
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.23	0.89	0.26	0.61	0.49

01-03-2018
NSSynchro 10 Report
Page 13

Lanes, Volumes, Timings

6050: Dollarton Hwy & Berkley Road

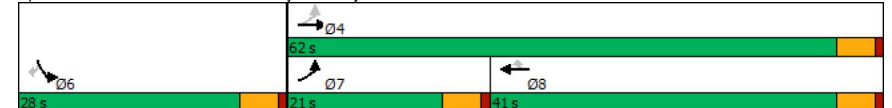
Recommended Network

Timing Plan: AM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	83
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.92
Intersection Signal Delay:	25.9
Intersection LOS:	C
Intersection Capacity Utilization	80.9%
ICU Level of Service	D
Analysis Period (min)	15
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 6050: Dollarton Hwy & Berkley Road

01-03-2018
NSSynchro 10 Report
Page 14

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

Recommended Network

Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↰	↰	↰↰	↰↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	179	998	124	407	1392	52	39	9	122	74	82	370
Future Volume (vph)	179	998	124	407	1392	52	39	9	122	74	82	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	2		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3579	1601	3471	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.090			0.187			0.698			0.750		
Satd. Flow (perm)	170	3579	1601	683	3579	1601	1315	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			120			148			411
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.6			116.0			94.2			142.6	
Travel Time (s)		6.0			7.0			7.1			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1085	135	442	1513	57	49	11	153	82	91	411
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	10.0	38.5	38.5	12.8	41.3	41.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	12.5%	48.1%	48.1%	16.0%	51.6%	51.6%	35.9%	35.9%	35.9%	35.9%	35.9%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Act Effct Green (s)	56.2	43.9	43.9	55.9	43.7	43.7	12.0	12.0	12.0	12.0	12.0	80.0
Actuated g/C Ratio	0.70	0.55	0.55	0.70	0.55	0.55	0.15	0.15	0.15	0.15	0.15	1.00
v/c Ratio	0.53	0.55	0.14	0.49	0.77	0.06	0.25	0.04	0.42	0.39	0.32	0.26
Control Delay	17.5	14.1	3.5	5.5	19.2	0.2	32.1	27.4	9.6	35.3	32.6	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	14.1	3.5	5.5	19.2	0.2	32.1	27.4	9.6	35.3	32.6	0.4
LOS	B	B	A	A	B	A	C	C	A	D	C	A
Approach Delay		13.6			15.7			15.7			10.3	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	10.9	51.7	1.0	7.5	86.5	0.0	6.7	1.5	0.7	11.5	12.6	0.0
Queue Length 95th (m)	31.9	85.9	10.0	14.4	#154.4	0.5	13.4	4.8	10.7	22.7	23.8	0.0
Internal Link Dist (m)		75.6			92.0			70.2			118.6	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	368	1963	932	902	1955	929	406	581	596	436	581	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.55	0.14	0.49	0.77	0.06	0.12	0.02	0.26	0.19	0.16	0.26

01-03-2018
NSSynchro 10 Report
Page 15

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

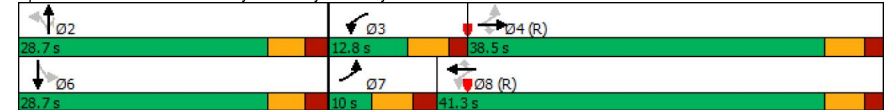
Recommended Network

Timing Plan: AM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 14.2	Intersection LOS: B
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road













01-03-2018
NSSynchro 10 Report
Page 16

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Recommended Network

Timing Plan: AM Peak

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	111	494	1293	61	33	138
Future Volume (vph)	111	494	1293	61	33	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1661	0
Flt Permitted	0.092				0.990	
Satd. Flow (perm)	173	3579	3579	1601	1661	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				55	150	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	187.7		116.7	
Travel Time (s)		37.0	14.1		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	121	537	1405	66	186	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	13.0	64.0	51.0	51.0	26.0	
Total Split (%)	14.4%	71.1%	56.7%	56.7%	28.9%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	Max	
Act Effct Green (s)	48.5	48.5	38.7	38.7	21.6	
Actuated g/C Ratio	0.60	0.60	0.48	0.48	0.27	
v/c Ratio	0.47	0.25	0.81	0.08	0.34	
Control Delay	14.2	7.2	22.6	4.5	9.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	14.2	7.2	22.6	4.5	9.9	
LOS	B	A	C	A	A	
Approach Delay		8.5	21.8		9.9	
Approach LOS		A	C		A	
Queue Length 50th (m)	6.9	17.5	97.6	0.9	4.5	
Queue Length 95th (m)	17.5	24.2	124.5	6.9	21.2	
Internal Link Dist (m)		469.5	163.7		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	269	2691	2105	964	555	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.45	0.20	0.67	0.07	0.34	

01-03-2018
NSSynchro 10 Report
Page 17

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

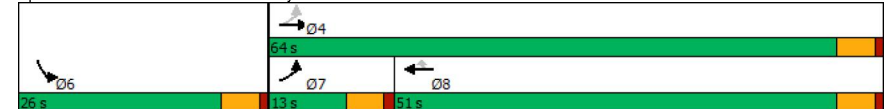
Recommended Network

Timing Plan: AM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	80.3
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.81
Intersection Signal Delay:	17.1
Intersection LOS:	B
Intersection Capacity Utilization:	64.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 7050: Dollarton Hwy & Collector A

01-03-2018
NSSynchro 10 Report
Page 18

HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton Road

Recommended Network
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↶			↶			↶			↶	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	97	103	5	0	204	88	0	0	44	94	0	181
Future Volume (vph)	97	103	5	0	204	88	0	0	44	94	0	181
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	121	129	6	0	219	95	0	0	55	118	0	226
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	256	314	55	344								
Volume Left (vph)	121	0	0	118								
Volume Right (vph)	6	95	55	226								
Hadj (s)	0.31	-0.12	-0.60	-0.28								
Departure Headway (s)	5.8	5.4	5.6	5.3								
Degree Utilization, x	0.42	0.47	0.08	0.51								
Capacity (veh/h)	574	630	526	633								
Control Delay (s)	12.9	12.9	9.1	13.6								
Approach Delay (s)	12.9	12.9	9.1	13.6								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			13.0									
Level of Service			B									
Intersection Capacity Utilization			60.2%		ICU Level of Service				B			
Analysis Period (min)			15									

















HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton/Old Dollarton Road & Front St

Recommended Network
Timing Plan: AM Peak

	WBL	WBR	NBT	NBR	SBL	SBT
Movement						
Lane Configurations	↶		↶		↶	↶
Traffic Volume (veh/h)	178	31	150	71	52	323
Future Volume (Veh/h)	178	31	150	71	52	323
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	34	167	79	58	359
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None			None	
Median storage (veh)						
Upstream signal (m)			98			
pX, platoon unblocked	0.98	0.98			0.98	
vC, conflicting volume	682	206			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	662	176			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	50	96			96	
cM capacity (veh/h)	399	847			1322	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	246	417			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	432	1700	1322			
Volume to Capacity	0.54	0.14	0.04			
Queue Length 95th (m)	23.5	0.0	1.0			
Control Delay (s)	22.6	0.0	1.5			
Lane LOS	C		A			
Approach Delay (s)	22.6	0.0	1.5			
Approach LOS	C					
Intersection Summary						
Average Delay			6.5			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			











HCM Unsignalized Intersection Capacity Analysis 3020: Riverside Drive/Riverside & Windridge Dr

Recommended Network
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	0	35	73	0	29	0	552	18	12	605	0
Future Volume (Veh/h)	10	0	35	73	0	29	0	552	18	12	605	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	11	0	39	81	0	32	0	613	20	13	672	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None								None			
Median storage (veh)												
Upstream signal (m)	264								113			
pX, platoon unblocked	0.91	0.91	0.91	0.91	0.91		0.91					
vC, conflicting volume	1353	1331	672	1360	1321	623	672			633		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1338	1314	587	1346	1303	623	587			633		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	100	92	23	100	93	100			99		
cM capacity (veh/h)	109	141	462	106	144	486	896			950		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	113	633	685								
Volume Left	11	81	0	13								
Volume Right	39	32	20	0								
cSH	270	136	1700	950								
Volume to Capacity	0.19	0.83	0.37	0.01								
Queue Length 95th (m)	5.1	39.9	0.0	0.3								
Control Delay (s)	21.3	100.6	0.0	0.4								
Lane LOS	C	F		A								
Approach Delay (s)	21.3	100.6	0.0	0.4								
Approach LOS	C	F										
Intersection Summary												
Average Delay	8.6											
Intersection Capacity Utilization	Err%			ICU Level of Service			H					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 3040: Riverside Drive & Front St

Recommended Network
Timing Plan: AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	39	58	253	370	137
Future Volume (Veh/h)	48	39	58	253	370	137
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	42	63	275	402	149
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked	0.79	0.78	0.78			
vC, conflicting volume	878	476	551			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	674	194	289			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	83	94	94			
cM capacity (veh/h)	311	664	998			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	94	63	275	551		
Volume Left	52	63	0	0		
Volume Right	42	0	0	149		
cSH	408	998	1700	1700		
Volume to Capacity	0.23	0.06	0.16	0.32		
Queue Length 95th (m)	6.7	1.5	0.0	0.0		
Control Delay (s)	16.4	8.9	0.0	0.0		
Lane LOS	C	A				
Approach Delay (s)	16.4	1.6		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization	46.2%			ICU Level of Service	A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Recommended Network
Timing Plan: AM Peak

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↖
Traffic Volume (veh/h)	17	31	27	16	33	18
Future Volume (Veh/h)	17	31	27	16	33	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	34	30	18	37	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage veh						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			53		114	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		114	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	98
cM capacity (veh/h)			1553		865	1037
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	53	48	57			
Volume Left	0	30	37			
Volume Right	34	0	20			
cSH	1700	1553	919			
Volume to Capacity	0.03	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	4.7	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.7	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay		4.7				
Intersection Capacity Utilization		19.0%	ICU Level of Service	A		
Analysis Period (min)		15				

01-03-2018
NS

Synchro 10 Report
Page 5

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Recommended Network
Timing Plan: AM Peak

	↗	→	↘	↙	←	↖	↗	↖	↗	↖	↗	↖
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗	↘	↖	↗
Traffic Volume (veh/h)	1	1257	6	49	1746	7	1	0	31	12	0	6
Future Volume (Veh/h)	1	1257	6	49	1746	7	1	0	31	12	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50
Hourly flow rate (vph)	1	1397	7	54	1940	8	1	0	39	24	0	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh												
Upstream signal (m)					284							
pX, platoon unblocked	0.64						0.64	0.64		0.64	0.64	0.64
vC, conflicting volume	1948			1404			2492	3458	702	2792	3458	974
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1352			1404			2205	3718	702	2673	3717	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			89			93	100	90	0	100	98
cM capacity (veh/h)	322			482			14	2	381	6	2	692
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	1	931	473	54	1293	655	40	36				
Volume Left	1	0	0	54	0	0	1	24				
Volume Right	0	0	7	0	0	8	39	12				
cSH	322	1700	1700	482	1700	1700	231	8				
Volume to Capacity	0.00	0.55	0.28	0.11	0.76	0.39	0.17	4.32				
Queue Length 95th (m)	0.1	0.0	0.0	2.9	0.0	0.0	4.7	Err				
Control Delay (s)	16.2	0.0	0.0	13.4	0.0	0.0	23.9	Err				
Lane LOS	C			B			C	F				
Approach Delay (s)	0.0			0.4			23.9	Err				
Approach LOS							C	F				
Intersection Summary												
Average Delay			103.8									
Intersection Capacity Utilization			62.6%				ICU Level of Service	B				
Analysis Period (min)			15									

01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Recommended Network

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	401	1618	46	37	1304	15	138	19	55	13	19	239
Future Volume (vph)	401	1618	46	37	1304	15	138	19	55	13	19	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3554	0	1690	3559	0	0	1778	1526	0	1883	1570
Flt Permitted	0.089			0.134				0.727			0.868	
Satd. Flow (perm)	168	3554	0	238	3559	0	0	1349	1526	0	1668	1570
Right Turn on Red			Yes			Yes		Yes			Yes	
Satd. Flow (RTOR)		6			1				76			266
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.7	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	1751	0	44	1552	0	0	197	69	0	35	266
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	32.0	70.0		38.0	38.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	32.0%	70.0%		38.0%	38.0%		30.0%	30.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Act Effct Green (s)	66.2	66.2		41.1	41.1		19.3	19.3	19.3	19.3	19.3	19.3
Actuated g/C Ratio	0.71	0.71		0.44	0.44		0.21	0.21	0.21	0.21	0.21	0.21
v/c Ratio	0.87	0.70		0.42	0.99		0.71	0.18	0.10	0.10	0.50	0.50
Control Delay	42.6	10.5		40.5	50.0		48.9	7.6	29.8	7.3	29.8	7.3
Queue Delay	25.8	48.1		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.4	58.6		40.5	50.0		48.9	7.6	29.8	7.3	29.8	7.3
LOS	E	E		D	D		D	A	C	C	A	A
Approach Delay		60.5			49.8			38.2			9.9	
Approach LOS		E			D			D			A	
Queue Length 50th (m)	56.2	83.2		5.5	~158.4		33.1	0.0		5.1	0.0	
Queue Length 95th (m)	94.9	133.6		#21.3	#224.8		48.2	6.7		12.7	18.3	
Internal Link Dist (m)		45.3			44.7			199.8			74.7	
Turn Bay Length (m)	20.0			75.0				15.0			30.0	
Base Capacity (vph)	605	2518		104	1566		376	480		465	629	
Starvation Cap Reductn	189	993		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.01	1.15		0.42	0.99		0.52	0.14		0.08	0.42	

01-03-2018
NSSynchro 10 Report
Page 3

Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Recommended Network

Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	93.5
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.99
Intersection Signal Delay:	51.7
Intersection LOS:	D
Intersection Capacity Utilization:	84.0%
ICU Level of Service:	E
Analysis Period (min):	15
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy

	Ø2		Ø4
70 s		30 s	
	Ø5		Ø6
32 s		38 s	
	Ø7		Ø8
30 s		30 s	

01-03-2018
NSSynchro 10 Report
Page 4

Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Recommended Network
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	99	1342	322	290	717	61	165	96	502	44	55	71
Future Volume (vph)	99	1342	322	290	717	61	165	96	502	44	55	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3475	0	1789	3579	1601	1789	1883	1601	1789	1725	0
Flt Permitted	0.335			0.059			0.407			0.579		
Satd. Flow (perm)	631	3475	0	111	3579	1601	767	1883	1601	1091	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37				147			319		50	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	322	797	68	206	120	628	55	158	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.6	67.8		11.4	67.6	67.6	10.4	30.4		10.4	30.4	
Total Split (%)	9.7%	56.5%		9.5%	56.3%	56.3%	8.7%	25.3%		8.7%	25.3%	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	73.8	63.8		85.2	72.0	70.5	22.8	17.7	120.0	22.0	15.6	
Actuated g/C Ratio	0.62	0.53		0.71	0.60	0.59	0.19	0.15	1.00	0.18	0.13	
v/c Ratio	0.25	1.09		0.97	0.37	0.07	1.03	0.43	0.39	0.23	0.59	
Control Delay	7.7	77.4		78.5	13.8	0.1	116.3	51.7	0.7	38.7	41.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.7	77.4		78.5	13.8	0.1	116.3	51.7	0.7	38.7	41.7	
LOS	A	E		E	B	A	F	D	A	D	D	
Approach Delay		73.5			30.5			32.1			40.9	
Approach LOS		E			C			C			D	
Queue Length 50th (m)	7.7	~281.4		59.9	47.5	0.0	~46.4	26.7	0.0	10.6	24.1	
Queue Length 95th (m)	14.4	#273.0		#141.3	71.9	0.0	#64.2	37.6	0.0	18.0	36.6	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0		25.0	50.0			
Base Capacity (vph)	484	1864		333	2147	1001	200	414	1601	237	418	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.25	1.09		0.97	0.37	0.07	1.03	0.29	0.39	0.23	0.38	

01-03-2018
NS

Synchro 10 Report
Page 5

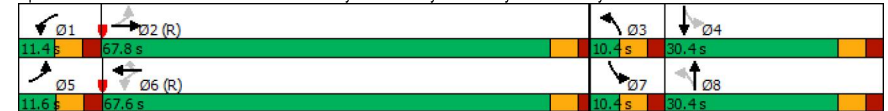
Lanes, Volumes, Timings
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

Recommended Network
Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length:	120
Actuated Cycle Length:	120
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.09
Intersection Signal Delay:	51.9
Intersection LOS:	D
Intersection Capacity Utilization:	93.2%
ICU Level of Service:	F
Analysis Period (min):	15
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

Splits and Phases: 3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway



01-03-2018
NS

Synchro 10 Report
Page 6

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road/Old Dollarton

Recommended Network

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	202	30	36	28	18	80	43	524	70	77	283	288
Future Volume (vph)	202	30	36	28	18	80	43	524	70	77	283	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	30.0		0.0	30.0		0.0
Storage Lanes	0		1	0		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	0	1804	1601	0	1703	0	1789	1850	0	1789	1740	0
Flt Permitted		0.709			0.892		0.243			0.245		
Satd. Flow (perm)	0	1335	1601	0	1536	0	458	1850	0	461	1740	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			15			115	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	45	0	148	0	46	631	0	86	634	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		
Detector Phase	2	2	2	6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	
Total Split (s)	28.0	28.0	28.0	28.0	28.0		32.0	32.0		32.0	32.0	
Total Split (%)	46.7%	46.7%	46.7%	46.7%	46.7%		53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	
Act Effct Green (s)		17.7	17.7		17.7		23.2	23.2		23.2	23.2	
Actuated g/C Ratio		0.36	0.36		0.36		0.47	0.47		0.47	0.47	
v/c Ratio		0.61	0.07		0.24		0.21	0.72		0.40	0.72	
Control Delay		19.7	4.7		6.5		12.1	16.7		16.6	14.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		19.7	4.7		6.5		12.1	16.7		16.6	14.9	
LOS		B	A		A		B	B		B	B	
Approach Delay		17.7			6.5			16.4			15.1	
Approach LOS		B			A			B			B	
Queue Length 50th (m)		20.4	0.0		3.1		2.2	40.3		4.6	33.1	
Queue Length 95th (m)		37.0	3.9		11.7		8.8	85.7		16.8	78.0	
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0				30.0			30.0		
Base Capacity (vph)		678	835		826		271	1102		273	1078	
Starvation Cap Reductn		0	0		0		0	0		0	0	
Spillback Cap Reductn		0	0		0		0	0		0	0	
Storage Cap Reductn		0	0		0		0	0		0	0	
Reduced v/c Ratio		0.43	0.05		0.18		0.17	0.57		0.32	0.59	

01-03-2018
NSSynchro 10 Report
Page 7

Lanes, Volumes, Timings

3030: Riverside Drive & Old Dollarton Road/Old Dollarton

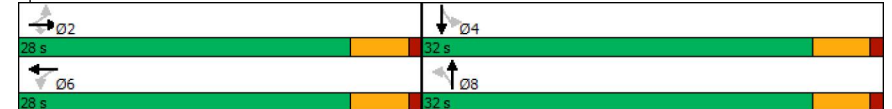
Recommended Network

Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 49.2	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 15.4	Intersection LOS: B
Intersection Capacity Utilization 75.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3030: Riverside Drive & Old Dollarton Road/Old Dollarton

01-03-2018
NSSynchro 10 Report
Page 8

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Recommended Network

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱		↰	↰			↱	↱
Traffic Volume (vph)	435	1205	9	25	1112	91	60	44	51	117	28	157
Future Volume (vph)	435	1205	9	25	1112	91	60	44	51	117	28	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1807	3603	0	1825	3484	0	1789	1710	0	0	1734	1617
Flt Permitted	0.108			0.202			0.482				0.694	
Satd. Flow (perm)	205	3603	0	388	3484	0	908	1710	0	0	1252	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			11			57				224
Link Speed (k/h)		48			48			48				48
Link Distance (m)		213.9			242.5			117.5				105.2
Travel Time (s)		16.0			18.2			8.8				7.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	483	1349	0	28	1337	0	67	106	0	0	207	224
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			8			4	4
Permitted Phases	2			6			8			4		4
Detector Phase	5	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	24.0	61.0		37.0	37.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	26.7%	67.8%		41.1%	41.1%		32.2%	32.2%		32.2%	32.2%	32.2%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Recall Mode	None	Max		Max	Max		None	None		None	None	None
Act Effct Green (s)	57.2	57.2		33.1	33.1		19.2	19.2		19.2	19.2	19.2
Actuated g/C Ratio	0.68	0.68		0.39	0.39		0.23	0.23		0.23	0.23	0.23
v/c Ratio	0.93	0.55		0.18	0.97		0.33	0.25		0.73	0.41	0.41
Control Delay	49.5	8.8		22.7	45.9		31.2	14.8		45.5	6.3	6.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Total Delay	49.5	8.8		22.7	45.9		31.2	14.8		45.5	6.3	6.3
LOS	D	A		C	D		C	B		D	A	A
Approach Delay		19.5			45.4			21.2			25.1	
Approach LOS		B			D			C			C	
Queue Length 50th (m)	60.2	52.7		2.9	109.9		9.0	6.3		30.9	0.0	0.0
Queue Length 95th (m)	#129.9	82.2		10.0	#173.1		20.1	18.3		38.9	5.4	5.4
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0								
Base Capacity (vph)	519	2442		152	1373		269	548		372	637	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.93	0.55		0.18	0.97		0.25	0.19		0.56	0.35	

01-03-2018
NSSynchro 10 Report
Page 9

Lanes, Volumes, Timings

3050: Riverside Drive & Dollarton Hwy

Recommended Network

Timing Plan: PM Peak

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 84.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 29.5

Intersection LOS: C

Intersection Capacity Utilization 82.4%

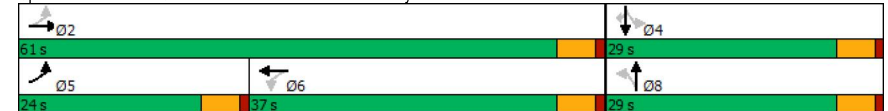
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside Drive & Dollarton Hwy

01-03-2018
NSSynchro 10 Report
Page 10

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Recommended Network

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱		↰	↰↱			↰↱			↰↱	↰
Traffic Volume (vph)	24	1452	24	8	938	23	176	4	9	31	0	17
Future Volume (vph)	24	1452	24	8	938	23	176	4	9	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3571	0	1789	3564	0	0	1788	0	0	1789	1601
Flt Permitted	0.215			0.120				0.712			0.723	
Satd. Flow (perm)	405	3571	0	226	3564	0	0	1333	0	0	1362	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			4				31
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1604	0	9	1068	0	0	210	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	41.4%
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Act Effct Green (s)	33.2	33.2		33.2	33.2			15.3			15.3	15.3
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.27			0.27	0.27
v/c Ratio	0.11	0.77		0.07	0.51			0.58			0.11	0.05
Control Delay	8.1	12.9		8.2	8.6			25.1			16.7	5.3
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.1	12.9		8.2	8.6			25.1			16.7	5.3
LOS	A	B		A	A			C			B	A
Approach Delay		12.8			8.6			25.1			12.7	
Approach LOS		B			A			C			B	
Queue Length 50th (m)	1.0	55.7		0.4	29.2			19.0			3.2	0.0
Queue Length 95th (m)	5.1	110.0		2.7	57.6			37.8			8.1	2.5
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)	45.0			45.0								35.0
Base Capacity (vph)	271	2391		151	2387			604			616	741
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.10	0.67		0.06	0.45			0.35			0.06	0.03

01-03-2018
NSSynchro 10 Report
Page 11

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Recommended Network

Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 56.7	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 12.2	Intersection LOS: B
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4050: Forester St & Dollarton Hwy













01-03-2018
NSSynchro 10 Report
Page 12

Lanes, Volumes, Timings

6050: Dollarton Hwy & Berkley Road

Recommended Network

Timing Plan: PM Peak

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	403	1091	523	84	248	445
Future Volume (vph)	403	1091	523	84	248	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1738	1521
Flt Permitted	0.279				0.967	
Satd. Flow (perm)	525	3579	3579	1601	1738	1521
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)				91	26	363
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						25%
Lane Group Flow (vph)	438	1186	568	91	391	363
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	28.0	58.0	30.0	30.0	32.0	32.0
Total Split (%)	31.1%	64.4%	33.3%	33.3%	35.6%	35.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	None	None	None	None
Act Effct Green (s)	50.1	50.1	25.4	25.4	21.2	21.2
Actuated g/C Ratio	0.62	0.62	0.31	0.31	0.26	0.26
v/c Ratio	0.70	0.54	0.51	0.16	0.83	0.55
Control Delay	16.3	10.8	26.7	6.7	42.7	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	10.8	26.7	6.7	42.7	6.2
LOS	B	B	C	A	D	A
Approach Delay		12.3	23.9		25.1	
Approach LOS		B	C		C	
Queue Length 50th (m)	32.8	52.6	40.7	0.0	55.9	0.0
Queue Length 95th (m)	63.8	78.3	60.5	10.5	88.7	19.8
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	685	2364	1115	561	602	752
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.50	0.51	0.16	0.65	0.48

01-03-2018
NSSynchro 10 Report
Page 13

Lanes, Volumes, Timings

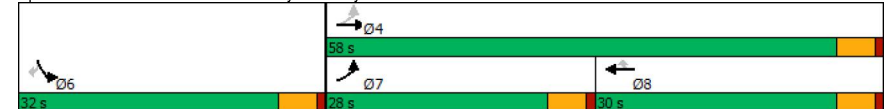
6050: Dollarton Hwy & Berkley Road

Recommended Network

Timing Plan: PM Peak

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 81.4	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 18.0	Intersection LOS: B
Intersection Capacity Utilization 78.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road

01-03-2018
NSSynchro 10 Report
Page 14

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

Recommended Network

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↱	↰	↰↱	↰↱	↰	↰	↰	↰	↰	↰	↰
Traffic Volume (vph)	412	1292	196	123	850	56	96	9	297	31	65	138
Future Volume (vph)	412	1292	196	123	850	56	96	9	297	31	65	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	2		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Satd. Flow (prot)	1789	3579	1601	3471	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.108			0.950			0.715			0.749		
Satd. Flow (perm)	203	3579	1601	3471	3579	1601	1347	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			212			175			200			242
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			91.4			145.4	
Travel Time (s)		6.0			7.5			6.9			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1389	363	195	977	66	116	13	430	39	65	160
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4			8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	26.0	48.3	48.3	13.0	35.3	35.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	28.9%	53.7%	53.7%	14.4%	39.2%	39.2%	31.9%	31.9%	31.9%	31.9%	31.9%	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max	Max	
Act Effct Green (s)	55.2	42.7	42.7	7.4	30.8	30.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.47	0.47	0.08	0.34	0.34	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.91	0.82	0.42	0.68	0.80	0.10	0.34	0.03	0.77	0.11	0.14	0.10
Control Delay	48.9	25.3	7.7	53.5	33.2	0.3	30.7	25.4	27.0	26.7	26.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	25.3	7.7	53.5	33.2	0.3	30.7	25.4	27.0	26.7	26.8	0.1
LOS	D	C	A	D	C	A	C	C	C	C	C	A
Approach Delay		26.9			34.6			27.7			10.6	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	53.7	104.1	14.6	17.2	81.1	0.0	16.4	1.7	37.0	5.2	8.7	0.0
Queue Length 95th (m)	#104.6	132.6	8.4	19.0	100.0	0.0	28.3	4.7	40.4	11.4	18.6	0.0
Internal Link Dist (m)		75.5			101.4			67.4			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	475	1698	871	285	1225	662	344	481	558	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.82	0.42	0.68	0.80	0.10	0.34	0.03	0.77	0.11	0.14	0.10

01-03-2018
NSSynchro 10 Report
Page 15

Lanes, Volumes, Timings

7010: Mt Seymour Pkwy & Berkley Road

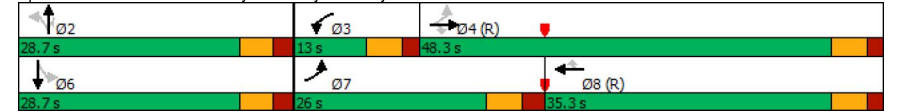
Recommended Network

Timing Plan: PM Peak

Intersection Summary

Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.2	Intersection LOS: C
Intersection Capacity Utilization 74.1%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road







01-03-2018
NSSynchro 10 Report
Page 16

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Recommended Network

Timing Plan: PM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	134	1205	524	28	83	82
Future Volume (vph)	134	1205	524	28	83	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Satd. Flow (prot)	1789	3579	3579	1601	1713	0
Flt Permitted	0.349				0.975	
Satd. Flow (perm)	657	3579	3579	1601	1713	0
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)				30	55	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	187.7		116.7	
Travel Time (s)		37.0	14.1		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	146	1310	570	30	179	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	13.0	60.0	47.0	47.0	30.0	
Total Split (%)	14.4%	66.7%	52.2%	52.2%	33.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Min	Min	Min	None	
Act Effct Green (s)	35.2	35.2	25.5	25.5	9.8	
Actuated g/C Ratio	0.64	0.64	0.46	0.46	0.18	
v/c Ratio	0.25	0.57	0.35	0.04	0.51	
Control Delay	5.5	7.2	11.8	4.9	20.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.5	7.2	11.8	4.9	20.9	
LOS	A	A	B	A	C	
Approach Delay		7.0	11.4		20.9	
Approach LOS		A	B		C	
Queue Length 50th (m)	4.5	31.1	20.0	0.0	11.8	
Queue Length 95th (m)	12.2	58.1	34.7	4.0	26.9	
Internal Link Dist (m)		469.5	163.7		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	585	3410	2773	1247	819	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.38	0.21	0.02	0.22	

01-03-2018
NSSynchro 10 Report
Page 17

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

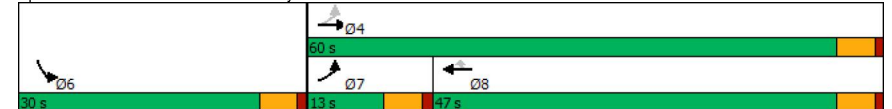
Recommended Network

Timing Plan: PM Peak

Intersection Summary
















Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	55.2
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	9.3
Intersection LOS:	A
Intersection Capacity Utilization:	51.3%
ICU Level of Service:	A
Analysis Period (min):	15

Splits and Phases: 7050: Dollarton Hwy & Collector A

01-03-2018
NSSynchro 10 Report
Page 18













HCM Unsignalized Intersection Capacity Analysis
2030: Semour River PI & Old Dollarton Road

Recommended Network
Timing Plan: PM Peak

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Sign Control		Stop			Stop			Stop			Stop									
Traffic Volume (vph)	145	137	25	0	196	84	0	0	47	82	0	158								
Future Volume (vph)	145	137	25	0	196	84	0	0	47	82	0	158								
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54								
Hourly flow rate (vph)	181	151	50	0	225	125	0	0	87	126	0	293								
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total (vph)	382	350	87	419																
Volume Left (vph)	181	0	0	126																
Volume Right (vph)	50	125	87	293																
Hadj (s)	0.06	-0.15	-0.60	-0.33																
Departure Headway (s)	6.3	6.2	6.7	6.0																
Degree Utilization, x	0.67	0.60	0.16	0.70																
Capacity (veh/h)	531	535	414	563																
Control Delay (s)	21.4	18.3	11.0	22.1																
Approach Delay (s)	21.4	18.3	11.0	22.1																
Approach LOS	C	C	B	C																
Intersection Summary																				
Delay	20.0																			
Level of Service	C																			
Intersection Capacity Utilization	63.1%			ICU Level of Service			B													
Analysis Period (min)	15																			

















HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton/Old Dollarton Road & Front St

Recommended Network
Timing Plan: PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	59	253	155	171	157
Future Volume (Veh/h)	81	59	253	155	171	157
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	281	172	190	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	99					
pX, platoon unblocked	0.91	0.91	0.91			
vC, conflicting volume	921	367	453			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	865	258	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	63	91	83			
cM capacity (veh/h)	245	712	1101			
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	453	364			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	339	1700	1101			
Volume to Capacity	0.46	0.27	0.17			
Queue Length 95th (m)	17.7	0.0	4.7			
Control Delay (s)	24.4	0.0	5.5			
Lane LOS	C	A	A			
Approach Delay (s)	24.4	0.0	5.5			
Approach LOS	C					
Intersection Summary						
Average Delay	6.0					
Intersection Capacity Utilization	58.6%			ICU Level of Service		B
Analysis Period (min)	15					












HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive/Riverside & Windridge Dr

Recommended Network
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	10	27	0	21	0	745	55	25	642	0
Future Volume (Veh/h)	5	0	10	27	0	21	0	745	55	25	642	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	6	0	11	45	0	35	0	931	69	26	676	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	264						113					
pX, platoon unblocked	0.80	0.80	0.92	0.80	0.80	0.76	0.92	0.76				
vC, conflicting volume	1728	1728	676	1704	1694	966	676	1000				
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1564	1563	606	1534	1520	797	606	842				
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1	4.1				
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2	2.2				
p0 queue free %	90	100	98	37	100	88	100	96				
cM capacity (veh/h)	62	85	458	72	91	294	896	603				
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	80	1000	702								
Volume Left	6	45	0	26								
Volume Right	11	35	69	0								
cSH	140	107	1700	603								
Volume to Capacity	0.12	0.75	0.59	0.04								
Queue Length 95th (m)	3.1	30.7	0.0	1.0								
Control Delay (s)	34.2	102.1	0.0	1.2								
Lane LOS	D	F		A								
Approach Delay (s)	34.2	102.1	0.0	1.2								
Approach LOS	D	F										
Intersection Summary												
Average Delay	5.3											
Intersection Capacity Utilization	Err%			ICU Level of Service			H					
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Recommended Network
Timing Plan: PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	81	73	483	149	167
Future Volume (Veh/h)	137	81	73	483	149	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	537	166	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked	0.90					
vC, conflicting volume	958	259	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	896	259	352			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	42	88	93			
cM capacity (veh/h)	260	780	1207			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total	242	81	537	352		
Volume Left	152	81	0	0		
Volume Right	90	0	0	186		
cSH	346	1207	1700	1700		
Volume to Capacity	0.70	0.07	0.32	0.21		
Queue Length 95th (m)	38.3	1.6	0.0	0.0		
Control Delay (s)	36.4	8.2	0.0	0.0		
Lane LOS	E	A				
Approach Delay (s)	36.4	1.1		0.0		
Approach LOS	E					
Intersection Summary						
Average Delay			7.8			
Intersection Capacity Utilization			44.7%	ICU Level of Service		A
Analysis Period (min)			15			



















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Recommended Network
Timing Plan: PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	48	22	18	22	55	6
Future Volume (Veh/h)	48	22	18	22	55	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	53	24	20	24	61	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			77		129	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			77		129	65
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	99
cM capacity (veh/h)			1522		854	999
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	77	44	68			
Volume Left	0	20	61			
Volume Right	24	0	7			
cSH	1700	1522	867			
Volume to Capacity	0.05	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	3.4	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.4	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization	18.9%		ICU Level of Service		A	
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Recommended Network
Timing Plan: PM Peak

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (veh/h)	12	1873	8	24	1053	7	1	0	20	8	0	14	
Future Volume (Veh/h)	12	1873	8	24	1053	7	1	0	20	8	0	14	
Sign Control		Free			Free			Stop			Stop		
Grade		0%			0%			0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70	
Hourly flow rate (vph)	13	1993	9	27	1170	8	2	0	40	11	0	20	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)	284												
pX, platoon unblocked	0.76						0.76	0.76			0.76	0.76	0.76
vC, conflicting volume	1178				2002			2682	3256	1001	2290	3256	589
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	598				2002			2581	3337	1001	2065	3337	0
tC, single (s)	4.1				4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)													
tF (s)	2.2				2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98				90			77	100	83	40	100	98
cM capacity (veh/h)	739				282			9	5	241	18	5	823
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	13	1329	673	27	780	398	42	31					
Volume Left	13	0	0	27	0	0	2	11					
Volume Right	0	0	9	0	0	8	40	20					
cSH	739	1700	1700	282	1700	1700	105	49					
Volume to Capacity	0.02	0.78	0.40	0.10	0.46	0.23	0.40	0.63					
Queue Length 95th (m)	0.4	0.0	0.0	2.4	0.0	0.0	12.6	18.6					
Control Delay (s)	10.0	0.0	0.0	19.1	0.0	0.0	60.6	160.1					
Lane LOS	A				C			F	F				
Approach Delay (s)	0.1				0.4			60.6	160.1				
Approach LOS													
Intersection Summary													
Average Delay	2.5												
Intersection Capacity Utilization	63.4%			ICU Level of Service				B					
Analysis Period (min)	15												

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: AM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Volume (vph)	385	2	10	583	0	11
Future Volume (vph)	385	2	10	583	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.850
Flt Protected			0.950			
Satd. Flow (prot)	3575	0	1789	3579	1883	1601
Flt Permitted			0.506			
Satd. Flow (perm)	3575	0	953	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					370
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	2	11	634	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	11	634	0	12
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.12		0.01	0.19		0.02
Control Delay	0.9		1.3	1.0		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	0.9		1.3	1.0		0.1
LOS	A		A	A		A
Approach Delay	0.9			1.0	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

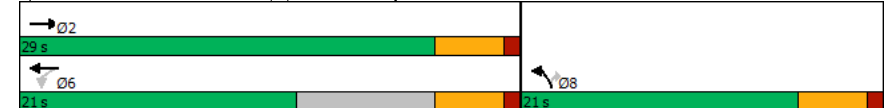
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: AM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	8.3		1.1	12.7		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3371		898	3374		825
Starvation Cap Reductn	0		0	478		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.12		0.01	0.22		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.19	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 23.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak













	↖	→	↘	↙	←	↖	↘	↙	↖	↘	↙	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖	↖		↖	↖
Traffic Volume (vph)	204	1049	114	98	1581	10	94	27	60	18	62	722
Future Volume (vph)	204	1049	114	98	1581	10	94	27	60	18	62	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.962			0.989	
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.080			0.183				0.728			0.929	
Satd. Flow (perm)	135	3341	0	348	3507	0	0	1281	1408	0	1785	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			1				69			233
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Adj. Flow (vph)	224	1153	125	102	1647	10	99	28	63	23	78	903
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	1278	0	102	1657	0	0	127	63	0	101	903
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	17.0	67.0		50.0	50.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	15.5%	60.9%		45.5%	45.5%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	12.0	62.0		45.0	45.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	63.0	63.0		46.1	46.1		39.0	39.0	39.0	39.0	39.0	39.0
Actuated g/C Ratio	0.57	0.57		0.42	0.42		0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.90	0.67		0.70	1.13		0.28	0.12	0.16	1.26		
Control Delay	64.6	18.1		54.7	97.5		27.6	5.7	25.2	152.1		
Queue Delay	13.4	49.8		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	78.0	68.0		54.7	97.5		27.6	5.7	25.2	152.1		
LOS	E	E		D	F		C	A		C	F	
Approach Delay		69.5			95.1			20.3			139.3	
Approach LOS		E			F			C			F	

Lanes, Volumes, Timings

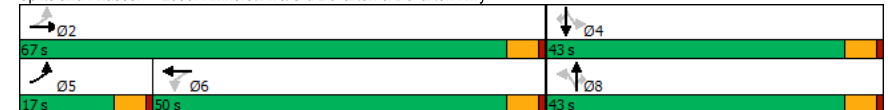
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	33.5	92.8		17.7	~218.3			19.4	0.0		14.7	~210.2
Queue Length 95th (m)	#77.6	115.7		#46.7	#261.3			34.5	7.9		23.6	#231.2
Internal Link Dist (m)		45.3			44.7			199.8			74.2	
Turn Bay Length (m)	20.0			75.0					15.0			30.0
Base Capacity (vph)	250	1920		145	1471			454	543		632	718
Starvation Cap Reductn	21	937		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.98	1.30		0.70	1.13			0.28	0.12		0.16	1.26
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 110												
Natural Cycle: 140												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.26												
Intersection Signal Delay: 93.2						Intersection LOS: F						
Intersection Capacity Utilization 105.4%						ICU Level of Service G						
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings

Option 1 Sensitivity

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖	↖	↖	↑	↖	↖	↖	
Traffic Volume (vph)	36	833	270	665	1572	36	246	60	397	96	93	115
Future Volume (vph)	36	833	270	665	1572	36	246	60	397	96	93	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963				0.850			0.850		0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1727	0
Flt Permitted	0.078			0.950			0.166			0.708		
Satd. Flow (perm)	147	3446	0	3471	3579	1601	313	1883	1601	1333	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33				170			474		38	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			193.1			71.4			172.4	
Travel Time (s)		39.4			14.5			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	40	926	300	739	1747	40	308	75	496	120	116	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	739	1747	40	308	75	496	120	260	0
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	53.0		36.2	77.8	77.8	25.4	40.8		15.0	30.4	
Total Split (%)	7.9%	36.6%		25.0%	53.7%	53.7%	17.5%	28.1%		10.3%	21.0%	
Maximum Green (s)	5.0	47.5		29.8	72.3	72.3	19.0	34.4		8.6	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	57.9	50.3		33.1	78.2	76.7	49.6	34.6	145.0	35.1	24.2	
Actuated g/C Ratio	0.40	0.35		0.23	0.54	0.53	0.34	0.24	1.00	0.24	0.17	
v/c Ratio	0.28	1.01		0.93	0.91	0.04	0.95	0.17	0.31	0.34	0.82	
Control Delay	22.5	73.1		74.1	39.2	0.1	78.0	43.9	0.5	36.6	69.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.5	73.1		74.1	39.2	0.1	78.0	43.9	0.5	36.6	69.4	
LOS	C	E		E	D	A	E	D	A	D	E	
Approach Delay		71.5			48.8			31.4			59.0	
Approach LOS		E			D			C			E	
Queue Length 50th (m)	4.7	~195.0		109.1	247.4	0.0	68.5	16.9	0.0	23.7	61.6	

Lanes, Volumes, Timings

Option 1 Sensitivity

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	9.9	#238.2		#147.5	#304.1	0.0	#97.6	26.9	0.0	34.1	79.6	
Internal Link Dist (m)		500.9			169.1			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0				25.0		
Base Capacity (vph)	143	1217		792	1929	926	324	477	1601	357	345	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	1.01		0.93	0.91	0.04	0.95	0.16	0.31	0.34	0.75	

Intersection Summary

Area Type: Other

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 52.2

Intersection LOS: D

Intersection Capacity Utilization 89.5%

ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	10	46	45	22	82	25	357	24	51	632	418
Future Volume (vph)	254	10	46	45	22	82	25	357	24	51	632	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.925			0.990				0.850
Flt Protected		0.954			0.985		0.950				0.996	
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1865	0	0	1876	1601
Flt Permitted		0.600			0.788		0.144				0.945	
Satd. Flow (perm)	0	1130	1601	0	1373	0	271	1865	0	0	1780	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			8				211
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	363	14	66	64	31	117	28	397	27	56	695	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	66	0	212	0	28	424	0	0	751	459
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	55.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		22.0			22.0		27.8	27.8		27.8	27.8	
Actuated g/C Ratio		0.38			0.38		0.48	0.48		0.48	0.48	
v/c Ratio		0.88			0.36		0.22	0.47		0.88	0.52	
Control Delay		42.3			4.3		14.2	12.2		28.2	7.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		42.3			4.3		14.2	12.2		28.2	7.9	
LOS		D			A		B	B		C	A	
Approach Delay		36.6			8.3			12.3		20.5		
Approach LOS		D			A			B		C		
Queue Length 50th (m)		37.1			0.0		6.7	1.7		28.4	68.7	15.5

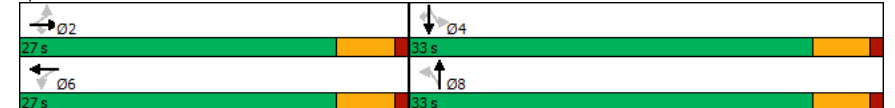
Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#47.4	3.6		12.0			6.7	48.0		#132.5	35.8	
Internal Link Dist (m)	176.9			263.8			113.8			240.2		
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)	451	679		618			136	943		896	911	
Starvation Cap Reductn	0	0		0			0	0		0	0	
Spillback Cap Reductn	0	0		0			0	0		0	0	
Storage Cap Reductn	0	0		0			0	0		0	0	
Reduced v/c Ratio	0.84	0.10		0.34			0.21	0.45		0.84	0.50	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 57.9	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	231	797	16	48	1216	110	81	47	34	179	68	349
Future Volume (vph)	231	797	16	48	1216	110	81	47	34	179	68	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.988				0.850			0.850
Flt Protected	0.950			0.950				0.969			0.965	
Satd. Flow (prot)	1706	3387	0	1825	3405	0	0	1696	1396	0	1625	1570
Flt Permitted	0.091			0.318				0.496			0.622	
Satd. Flow (perm)	163	3387	0	611	3405	0	0	868	1396	0	1048	1570
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		4			13				85			309
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Adj. Flow (vph)	254	876	18	53	1351	122	101	59	43	199	76	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	894	0	53	1473	0	0	160	43	0	275	388
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	19.0	61.0		42.0	42.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	21.1%	67.8%		46.7%	46.7%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	14.0	56.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.0	57.0		40.0	40.0		24.8	24.8	24.8	24.8	24.8	24.8
Actuated g/C Ratio	0.63	0.63		0.45	0.45		0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.78	0.42		0.19	0.97		0.67	0.10	0.95	0.59	0.59	0.59
Control Delay	35.9	8.8		18.7	42.3		44.5	1.6	76.1	10.6	10.6	10.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	8.8		18.7	42.3		44.5	1.6	76.1	10.6	10.6	10.6
LOS	D	A		B	D		D	A	E	B	B	B
Approach Delay		14.8			41.5			35.4		37.8		
Approach LOS		B			D			D		D		

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	26.6	36.2		5.6	~132.6			24.4	0.0		46.5	10.4
Queue Length 95th (m)	#57.6	47.6		13.9	#184.3			39.9	0.5		#93.5	36.6
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	361	2150		272	1524			241	450		292	660
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.70	0.42		0.19	0.97			0.66	0.10		0.94	0.59

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 89.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 31.8

Intersection LOS: C

Intersection Capacity Utilization 80.1%

ICU Level of Service D

Analysis Period (min) 15

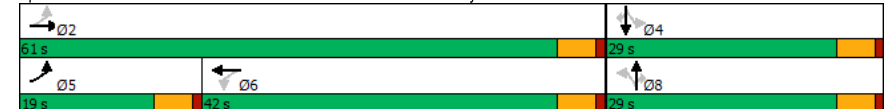
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	26	814	109	20	1323	15	81	1	11	28	1	33
Future Volume (vph)	26	814	109	20	1323	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.984				0.850
Flt Protected	0.950			0.950				0.958			0.954	
Satd. Flow (prot)	1789	3514	0	1789	3571	0	0	1775	0	0	1797	1601
Flt Permitted	0.155			0.271				0.719			0.771	
Satd. Flow (perm)	292	3514	0	510	3571	0	0	1333	0	0	1452	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			2			12				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Adj. Flow (vph)	28	875	117	21	1378	16	87	1	12	47	2	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	992	0	21	1394	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	31.7	31.7		31.7	31.7			9.6			9.6	9.6
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.23			0.23	0.23
v/c Ratio	0.13	0.37		0.05	0.52			0.32			0.15	0.14
Control Delay	6.4	4.4		4.8	5.6			15.7			14.8	8.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	6.4	4.4		4.8	5.6			15.7			14.8	8.8
LOS	A	A		A	A			B			B	A
Approach Delay		4.4			5.6			15.7			11.6	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	0.7	16.1		0.5	27.9			5.6			3.0	1.2

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	4.2	31.8		2.8	54.0			15.0			5.8	3.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0			45.0							35.0
Base Capacity (vph)	215	2604		376	2638			817			885	990
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.13	0.38		0.06	0.53			0.12			0.06	0.06

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 42.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 5.8

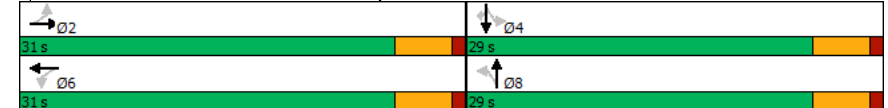
Intersection LOS: A

Intersection Capacity Utilization 58.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↩	↗	↗	↗	↗	↗
Traffic Volume (vph)	329	523	1113	194	105	245
Future Volume (vph)	329	523	1113	194	105	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.120				0.950	
Satd. Flow (perm)	226	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				178		272
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	366	581	1237	216	117	272
Shared Lane Traffic (%)						
Lane Group Flow (vph)	366	581	1237	216	117	272
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	17.0	51.0	34.0	34.0	29.0	29.0
Total Split (%)	21.3%	63.8%	42.5%	42.5%	36.3%	36.3%
Maximum Green (s)	12.0	46.0	29.0	29.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	45.3	45.3	28.2	28.2	9.9	9.9
Actuated g/C Ratio	0.69	0.69	0.43	0.43	0.15	0.15
v/c Ratio	0.82	0.23	0.80	0.27	0.43	0.58
Control Delay	31.5	4.2	21.5	4.5	30.5	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	4.2	21.5	4.5	30.5	9.0
LOS	C	A	C	A	C	A
Approach Delay		14.7	19.0		15.5	
Approach LOS		B	B		B	
Queue Length 50th (m)	25.8	10.4	64.1	2.5	13.2	0.0

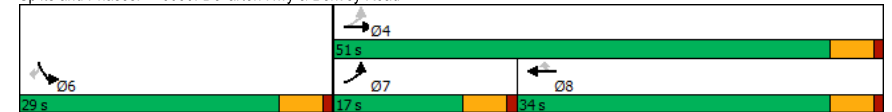
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#75.5	20.2	#100.4	14.3	26.5	17.1
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	445	2533	1597	812	660	762
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.23	0.77	0.27	0.18	0.36

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 65.2	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 17.0	Intersection LOS: B
Intersection Capacity Utilization 67.3%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	179	1152	39	7	1875	52	24	9	22	77	13	435
Future Volume (vph)	179	1152	39	7	1875	52	24	9	22	77	13	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.060			0.223			0.748			0.750		
Satd. Flow (perm)	113	3579	1601	420	3579	1601	1409	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			96			95			335
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.6			116.0			119.3			142.6	
Travel Time (s)		6.0			7.0			8.9			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	195	1252	42	8	2038	57	30	11	28	86	14	483
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1252	42	8	2038	57	30	11	28	86	14	483
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2				6
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	11.4	71.3	71.3	59.9	59.9	59.9	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	11.4%	71.3%	71.3%	59.9%	59.9%	59.9%	28.7%	28.7%	28.7%	28.7%	28.7%	
Maximum Green (s)	5.3	65.7	65.7	54.3	54.3	54.3	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	81.3	82.1	82.1	62.9	62.9	62.9	13.2	13.2	13.2	13.2	13.2	100.0
Actuated g/C Ratio	0.81	0.82	0.82	0.63	0.63	0.63	0.13	0.13	0.13	0.13	0.13	1.00
v/c Ratio	0.59	0.43	0.03	0.03	0.91	0.05	0.16	0.04	0.10	0.46	0.06	0.30
Control Delay	26.7	4.0	1.2	10.3	25.8	0.8	38.8	35.9	0.6	47.3	36.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	4.0	1.2	10.3	25.8	0.8	38.8	35.9	0.6	47.3	36.2	0.5
LOS	C	A	A	B	C	A	D	D	A	D	D	A
Approach Delay		6.9			25.1			22.8			8.2	
Approach LOS		A			C			C			A	
Queue Length 50th (m)	19.3	32.3	0.1	0.6	183.5	0.0	5.2	1.9	0.0	15.7	2.4	0.0

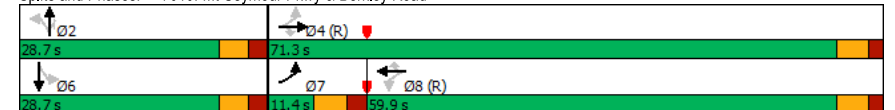
Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road













Option 1 Sensitivity
Timing Plan: AM Peak







	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	43.6	53.7	2.5	2.8	#263.7	1.9	11.3	5.7	0.0	28.9	7.6	0.0
Internal Link Dist (m)		75.6			92.0			95.3			118.6	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	333	2939	1322	263	2250	1042	348	465	466	349	465	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.43	0.03	0.03	0.91	0.05	0.09	0.02	0.06	0.25	0.03	0.30

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	519	1227	65	35	82
Future Volume (vph)	110	519	1227	65	35	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.116				0.950	
Satd. Flow (perm)	218	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				71		89
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	181.9		116.7	
Travel Time (s)		37.0	13.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	564	1334	71	38	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	564	1334	71	38	89
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	10.0	46.0	36.0	36.0	24.0	24.0
Total Split (%)	14.3%	65.7%	51.4%	51.4%	34.3%	34.3%
Maximum Green (s)	5.0	41.0	31.0	31.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	37.3	37.3	29.6	29.6	19.2	19.2
Actuated g/C Ratio	0.56	0.56	0.44	0.44	0.29	0.29
v/c Ratio	0.50	0.28	0.84	0.09	0.07	0.17
Control Delay	14.0	7.8	23.0	3.7	19.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	7.8	23.0	3.7	19.5	6.1
LOS	B	A	C	A	B	A
Approach Delay		8.9	22.0		10.1	
Approach LOS		A	C		B	
Queue Length 50th (m)	6.2	17.1	78.0	0.0	3.7	0.0

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	13.0	24.6	#105.4	6.0	10.1	9.2
Internal Link Dist (m)		469.5	157.9		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	241	2227	1683	790	515	525
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.25	0.79	0.09	0.07	0.17

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 17.3

Intersection LOS: B

Intersection Capacity Utilization 58.3%

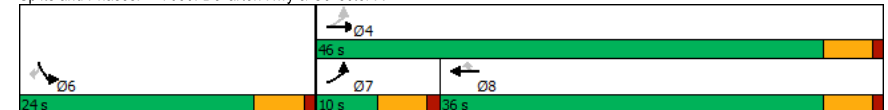
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

















Queue shown is maximum after two cycles.

Splits and Phases: 7050: Dollarton Hwy & Collector A











HCM Unsignalized Intersection Capacity Analysis 2030: Semour River Pl & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

																				
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR								
Lane Configurations																				
Traffic Volume (veh/h)	97	127	5	0	432	88	0	0	44	94	0	181								
Future Volume (Veh/h)	97	127	5	0	432	88	0	0	44	94	0	181								
Sign Control	Free			Free			Stop			Stop										
Grade	0%			0%			0%			0%										
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80								
Hourly flow rate (vph)	121	159	6	0	465	95	0	0	55	118	0	226								
Pedestrians																				
Lane Width (m)																				
Walking Speed (m/s)																				
Percent Blockage																				
Right turn flare (veh)																				
Median type	None				None															
Median storage (veh)																				
Upstream signal (m)	235				201															
pX, platoon unblocked																				
vC, conflicting volume	560				165				1142		964		162		972		920		512	
vC1, stage 1 conf vol																				
vC2, stage 2 conf vol																				
vCu, unblocked vol	560				165				1142		964		162		972		920		512	
tC, single (s)	4.2				4.4				7.1		6.5		6.2		7.1		6.5		6.2	
tC, 2 stage (s)																				
tF (s)	2.3				2.5				3.5		4.0		3.3		3.5		4.0		3.3	
p0 queue free %	88				100				100		100		94		40		100		60	
cM capacity (veh/h)	987				1245				97		226		888		197		240		560	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1																
Volume Total	286	560	55	344																
Volume Left	121	0	0	118																
Volume Right	6	95	55	226																
cSH	987	1245	888	343																
Volume to Capacity	0.12	0.00	0.06	1.00																
Queue Length 95th (m)	3.2	0.0	1.5	86.7																
Control Delay (s)	4.6	0.0	9.3	84.8																
Lane LOS	A		A	F																
Approach Delay (s)	4.6	0.0	9.3	84.8																
Approach LOS			A	F																
Intersection Summary																				
Average Delay			24.9																	
Intersection Capacity Utilization			73.4%			ICU Level of Service			D											
Analysis Period (min)			15																	

















HCM Unsignalized Intersection Capacity Analysis 2040: Old Dollarton & Front St

Option 1 Sensitivity
Timing Plan: AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	178	31	175	71	52	551
Future Volume (Veh/h)	178	31	175	71	52	551
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	34	194	79	58	612
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None		None		
Median storage (veh)						
Upstream signal (m)		98		338		
pX, platoon unblocked		0.94	0.94	0.94		
vC, conflicting volume		962	234	273		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol		928	155	197		
tC, single (s)		6.4	6.2	4.1		
tC, 2 stage (s)						
tF (s)		3.5	3.3	2.2		
p0 queue free %		26	96	96		
cM capacity (veh/h)		267	839	1295		
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	273	670			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	297	1700	1295			
Volume to Capacity	0.78	0.16	0.04			
Queue Length 95th (m)	46.4	0.0	1.1			
Control Delay (s)	49.6	0.0	1.2			
Lane LOS	E		A			
Approach Delay (s)	49.6	0.0	1.2			
Approach LOS	E					
Intersection Summary						
Average Delay			10.5			
Intersection Capacity Utilization			67.2%		ICU Level of Service	
Analysis Period (min)			15		C	












HCM Unsignalized Intersection Capacity Analysis 3020: Riverside Drive & Windridge Dr

Option 1 Sensitivity
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	0	29	0	667	18	12	1020	0
Future Volume (Veh/h)	0	0	0	73	0	29	0	667	18	12	1020	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	0	0	0	81	0	32	0	741	20	13	1133	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	264						113					
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	1942	1920	1133	1910	1910	751	1133			761		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1971	1947	1133	1936	1936	703	1133			713		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	100	92	100			98		
cM capacity (veh/h)	40	60	247	46	61	411	617			833		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	113	761	1146								
Volume Left	0	81	0	13								
Volume Right	0	32	20	0								
cSH	1700	61	1700	833								
Volume to Capacity	0.00	1.84	0.45	0.02								
Queue Length 95th (m)	0.0	79.7	0.0	0.4								
Control Delay (s)	0.0	543.2	0.0	0.5								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	543.2	0.0	0.5								
Approach LOS	A	F										
Intersection Summary												
Average Delay	30.7											
Intersection Capacity Utilization	75.7%			ICU Level of Service			D					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 3040: Riverside Drive & Front St

Option 1 Sensitivity
Timing Plan: AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	49	38	38	342	534	157
Future Volume (Veh/h)	49	38	38	342	534	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	41	41	372	580	171
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	934	376	751			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	934	376	751			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	93	95			
cM capacity (veh/h)	252	622	854			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	94	165	248	387	364	
Volume Left	53	41	0	0	0	
Volume Right	41	0	0	0	171	
cSH	340	854	1700	1700	1700	
Volume to Capacity	0.28	0.05	0.15	0.23	0.21	
Queue Length 95th (m)	8.4	1.1	0.0	0.0	0.0	
Control Delay (s)	19.6	2.7	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	19.6	1.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	45.4%			ICU Level of Service		A
Analysis Period (min)	15					






















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↖
Traffic Volume (veh/h)	17	25	27	16	21	13
Future Volume (Veh/h)	17	25	27	16	21	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	28	30	18	23	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			47		111	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		111	33
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		97	99
cM capacity (veh/h)			1560		869	1041
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	47	48	37			
Volume Left	0	30	23			
Volume Right	28	0	14			
cSH	1700	1560	927			
Volume to Capacity	0.03	0.02	0.04			
Queue Length 95th (m)	0.0	0.4	0.9			
Control Delay (s)	0.0	4.6	9.0			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.6	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			19.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 1 Sensitivity
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (veh/h)	1	1327	7	49	2278	7	1	0	33	12	0	6
Future Volume (Veh/h)	1	1327	7	49	2278	7	1	0	33	12	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50
Hourly flow rate (vph)	1	1474	8	54	2531	8	1	0	41	24	0	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					284							
pX, platoon unblocked	0.42						0.42	0.42		0.42	0.42	0.42
vC, conflicting volume	2539			1482			2866	4127	741	3423	4127	1270
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1905			1482			2680	5678	741	4005	5678	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			88			74	100	89	0	100	97
cM capacity (veh/h)	130			450			4	0	359	0	0	456
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	1	983	499	54	1687	852	42	36				
Volume Left	1	0	0	54	0	0	1	24				
Volume Right	0	0	8	0	0	8	41	12				
cSH	130	1700	1700	450	1700	1700	113	0				
Volume to Capacity	0.01	0.58	0.29	0.12	0.99	0.50	0.37	76.72				
Queue Length 95th (m)	0.2	0.0	0.0	3.1	0.0	0.0	11.5	Err				
Control Delay (s)	33.0	0.0	0.0	14.1	0.0	0.0	54.4	Err				
Lane LOS	D			B			F	F				
Approach Delay (s)	0.0			0.3			54.4	Err				
Approach LOS							F	F				
Intersection Summary												
Average Delay			87.4									
Intersection Capacity Utilization			77.5%	ICU Level of Service					D			
Analysis Period (min)			15									

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Volume (vph)	700	2	10	515	0	9
Future Volume (vph)	700	2	10	515	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected			0.950			
Satd. Flow (prot)	3579	0	1789	3579	1883	1601
Flt Permitted			0.362			
Satd. Flow (perm)	3579	0	682	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					147
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	2	11	560	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	763	0	11	560	0	10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.23		0.02	0.17		0.03
Control Delay	1.0		1.4	1.0		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	1.0		1.4	1.0		0.1
LOS	A		A	A		A
Approach Delay	1.0			1.0	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

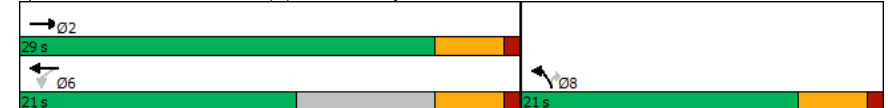
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	15.8		1.2	11.2		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3374		643	3374		684
Starvation Cap Reductn	0		0	494		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.23		0.02	0.19		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.23	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 31.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

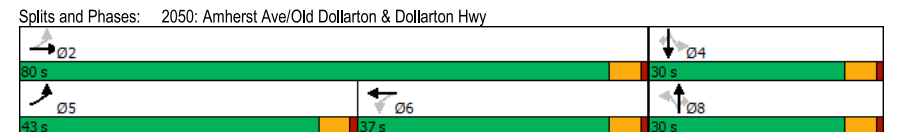
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	467	1663	46	37	1152	15	138	19	57	13	19	291
Future Volume (vph)	467	1663	46	37	1152	15	138	19	57	13	19	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	75.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	30.0	0.0
Storage Lanes	1	0	1	0	0	0	1	0	0	0	1	0
Taper Length (m)	15.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996			0.998				0.850			0.850	
Frt Protected	0.950			0.950				0.958			0.980	
Satd. Flow (prot)	1789	3554	0	1690	3557	0	0	1778	1526	0	1883	1570
Frt Permitted	0.083			0.128				0.727			0.867	
Satd. Flow (perm)	156	3554	0	228	3557	0	0	1349	1526	0	1666	1570
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)	6			1				69			323	
Link Speed (k/h)	48			48				48			48	
Link Distance (m)	69.3			68.7				223.8			98.7	
Travel Time (s)	5.2			5.2				16.8			7.4	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Adj. Flow (vph)	492	1751	48	44	1355	18	173	24	71	14	21	323
Shared Lane Traffic (%)												
Lane Group Flow (vph)	492	1799	0	44	1373	0	0	197	71	0	35	323
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		6				8			4	
Permitted Phases	2			6				8		4		4
Detector Phase	5	2		6	6			8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	43.0	80.0		37.0	37.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	39.1%	72.7%		33.6%	33.6%		27.3%	27.3%	27.3%	27.3%	27.3%	27.3%
Maximum Green (s)	38.0	75.0		32.0	32.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	76.2	76.2		44.2	44.2		20.5	20.5	20.5	20.5	20.5	20.5
Actuated g/C Ratio	0.73	0.73		0.42	0.42		0.20	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.90	0.70		0.46	0.91		0.75	0.20	0.11	0.57	0.57	0.57
Control Delay	46.7	10.4		48.8	41.7		57.3	10.1	34.4	8.2	8.2	8.2
Queue Delay	33.0	48.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.7	58.4		48.8	41.7		57.3	10.1	34.4	8.2	8.2	8.2
LOS	E	E		D	D		E	B	C	A	A	A
Approach Delay	63.0			42.0			44.8		10.8			
Approach LOS	E			D			D		B			

Lanes, Volumes, Timings
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	79.9	94.4		6.5	139.1			38.0	0.3		5.9	0.0
Queue Length 95th (m)	115.1	138.3		#25.0	#220.8			53.8	8.7		14.2	21.9
Internal Link Dist (m)		45.3			44.7			199.8			74.7	
Turn Bay Length (m)	20.0			75.0				15.0			30.0	
Base Capacity (vph)	723	2587		96	1502			335	431		414	633
Starvation Cap Reductn	251	1020		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	1.04	1.15		0.46	0.91			0.59	0.16		0.08	0.51
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	104.7											
Natural Cycle:	90											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	0.91											
Intersection Signal Delay:	50.7											
Intersection Capacity Utilization:	83.5%											
Analysis Period (min):	15											
#	95th percentile volume exceeds capacity, queue may be longer.											
	Queue shown is maximum after two cycles.											



Lanes, Volumes, Timings

Option 1 Sensitivity

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: PM Peak

	←	→	↖	↗	↖	↗	↖	↗	↖	↗	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	99	1342	322	412	783	49	203	109	729	35	67	71
Future Volume (vph)	99	1342	322	412	783	49	203	109	729	35	67	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971				0.850			0.850		0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1738	0
Flt Permitted	0.307			0.049			0.305			0.653		
Satd. Flow (perm)	578	3475	0	179	3579	1601	574	1883	1601	1230	1738	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				122			290		32	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			193.1			71.4			172.4	
Travel Time (s)		39.4			14.5			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	121	1637	393	458	870	54	254	136	911	44	84	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	458	870	54	254	136	911	44	173	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	12.4	81.5		18.2	87.3	87.3	14.8	34.9		10.4	30.5	
Total Split (%)	8.6%	56.2%		12.6%	60.2%	60.2%	10.2%	24.1%		7.2%	21.0%	
Maximum Green (s)	6.0	76.0		11.8	81.8	81.8	8.4	28.5		4.0	24.1	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	87.8	78.1		102.6	89.0	87.5	34.4	26.1	145.0	26.0	19.6	
Actuated g/C Ratio	0.61	0.54		0.71	0.61	0.60	0.24	0.18	1.00	0.18	0.14	
v/c Ratio	0.28	1.08		0.77	0.40	0.05	1.12	0.40	0.57	0.18	0.66	
Control Delay	9.9	76.9		49.3	15.6	0.1	142.8	56.1	1.5	43.2	59.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.9	76.9		49.3	15.6	0.1	142.8	56.1	1.5	43.2	59.8	
LOS	A	E		D	B	A	F	E	A	D	E	
Approach Delay		73.1			26.2			34.8			56.4	
Approach LOS		E			C			C			E	
Queue Length 50th (m)	10.0	~341.3		49.3	64.9	0.0	~74.6	35.6	0.0	10.0	39.0	

Lanes, Volumes, Timings

Option 1 Sensitivity

3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: PM Peak

	←	→	↖	↗	↖	↗	↖	↗	↖	↗	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	17.5	#321.3		#92.0	86.0	0.0	#95.6	47.2	0.0	16.8	52.2	
Internal Link Dist (m)		500.9			169.1			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0			
Base Capacity (vph)	430	1886		591	2196	1014	226	401	1601	245	343	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	1.08		0.77	0.40	0.05	1.12	0.34	0.57	0.18	0.50	

Intersection Summary

Area Type: Other

Cycle Length: 145

Actuated Cycle Length: 145

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 49.7

Intersection LOS: D

Intersection Capacity Utilization 91.6%

ICU Level of Service F

Analysis Period (min) 15

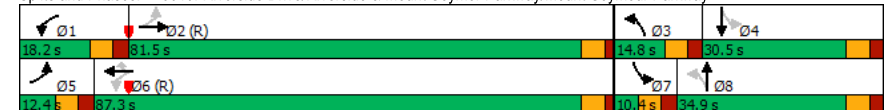
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	30	36	28	18	80	43	736	70	77	365	340
Future Volume (vph)	268	30	36	28	18	80	43	736	70	77	365	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.914			0.987				0.850
Flt Protected		0.957			0.989		0.950				0.991	
Satd. Flow (prot)	0	1802	1601	0	1703	0	1789	1859	0	0	1866	1601
Flt Permitted		0.660			0.845		0.391				0.473	
Satd. Flow (perm)	0	1243	1601	0	1455	0	736	1859	0	0	891	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			12				284
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	335	38	45	33	21	94	46	783	74	86	406	378
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	45	0	148	0	46	857	0	0	492	378
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	38.5%		61.5%	61.5%		61.5%	61.5%	61.5%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		21.0			21.0		36.0	36.0		36.0		36.0
Actuated g/C Ratio		0.32			0.32		0.55	0.55		0.55		0.55
v/c Ratio		0.93			0.08		0.11	0.83		1.00		0.37
Control Delay		55.5			6.0		8.7	7.8		21.0		59.0
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		55.5			6.0		8.7	7.8		21.0		59.0
LOS		E			A		A	C		E		A
Approach Delay		50.2			8.7			20.3				34.8
Approach LOS		D			A			C				C
Queue Length 50th (m)		42.8			0.0		4.5	2.4		75.9		53.5

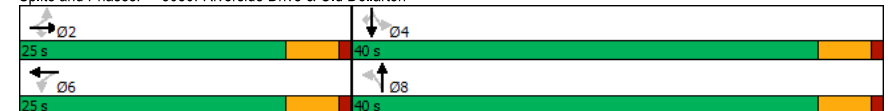
Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#73.8	4.8			14.2		6.7	#148.4			#113.8	15.8
Internal Link Dist (m)	176.9				263.8			113.8			240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)	401	547			533		407	1034			493	1013
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.93	0.08			0.28		0.11	0.83			1.00	0.37

Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 65	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings
3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

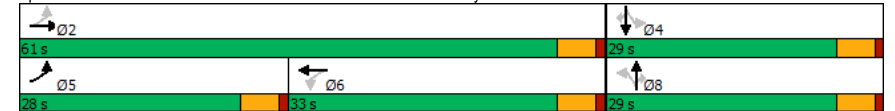
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	557	1130	9	25	921	181	60	45	52	155	28	200
Future Volume (vph)	557	1130	9	25	921	181	60	45	52	155	28	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0	0.0	45.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0
Storage Lanes	1	0	1	0	0	0	1	0	0	0	0	0
Taper Length (m)	15.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0	0.0
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999	0.975	0.850	0.975	0.850	0.975	0.850	0.975	0.850	0.975	0.850	0.975
Frt Protected	0.950	0.950	0.972	0.959	0.950	0.972	0.959	0.950	0.972	0.959	0.950	0.972
Satd. Flow (prot)	1807	3602	0	1825	3412	0	0	1793	1633	0	1725	1617
Frt Permitted	0.121	0.220	0.664	0.121	0.220	0.664	0.121	0.220	0.664	0.121	0.220	0.664
Satd. Flow (perm)	230	3602	0	423	3412	0	0	1088	1633	0	1195	1617
Right Turn on Red	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Satd. Flow (RTOR)	2	27	85	2	27	85	2	27	85	2	27	85
Link Speed (k/h)	48	48	48	48	48	48	48	48	48	48	48	48
Link Distance (m)	213.9	242.5	117.5	213.9	242.5	117.5	213.9	242.5	117.5	213.9	242.5	117.5
Travel Time (s)	16.0	18.2	8.8	16.0	18.2	8.8	16.0	18.2	8.8	16.0	18.2	8.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Adj. Flow (vph)	619	1256	10	28	1023	201	67	50	58	221	40	286
Shared Lane Traffic (%)	619	1266	0	28	1224	0	0	117	58	0	261	286
Lane Group Flow (vph)	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Turn Type	5	2	6	5	2	6	5	2	6	5	2	6
Protected Phases	2	6	8	2	6	8	2	6	8	2	6	8
Permitted Phases	5	2	6	5	2	6	5	2	6	5	2	6
Detector Phase	5	2	6	5	2	6	5	2	6	5	2	6
Switch Phase	5.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Initial (s)	10.0	25.0	25.0	25.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Minimum Split (s)	28.0	61.0	33.0	33.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	31.1%	67.8%	36.7%	36.7%	32.2%	32.2%	32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	23.0	56.0	28.0	28.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	Max	None	None	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	57.1	57.1	29.1	29.1	22.6	22.6	22.6	22.6	22.6	22.6	22.6	22.6
Actuated g/C Ratio	0.65	0.65	0.33	0.33	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	1.06	0.54	0.20	1.07	0.42	0.12	0.85	0.46	0.46	0.85	0.46	0.46
Control Delay	80.9	9.7	26.7	75.9	32.0	3.4	56.8	5.9	5.9	56.8	5.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.9	9.7	26.7	75.9	32.0	3.4	56.8	5.9	5.9	56.8	5.9	5.9
LOS	F	A	C	E	C	A	E	A	E	A	E	A
Approach Delay	33.0	74.8	22.5	30.2	33.0	74.8	22.5	30.2	33.0	74.8	22.5	30.2
Approach LOS	C	E	C	C	C	E	C	C	C	E	C	C

Lanes, Volumes, Timings
3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	~106.5	58.5	3.5	~125.8	16.4	0.0	41.6	0.0	41.6	0.0	41.6	0.0
Queue Length 95th (m)	#170.0	74.5	10.6	#165.9	31.8	4.9	49.9	4.7	49.9	4.7	49.9	4.7
Internal Link Dist (m)	189.9	218.5	93.5	218.5	93.5	218.5	93.5	218.5	93.5	218.5	93.5	218.5
Turn Bay Length (m)	95.0	45.0	25.0	45.0	25.0	45.0	25.0	45.0	25.0	45.0	25.0	45.0
Base Capacity (vph)	582	2347	140	1148	310	527	341	666	310	527	341	666
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.06	0.54	0.20	1.07	0.38	0.11	0.77	0.43	0.77	0.43	0.77	0.43
Intersection Summary												
Area Type:	Other											
Cycle Length:	90											
Actuated Cycle Length:	87.7											
Natural Cycle:	100											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	1.07											
Intersection Signal Delay:	45.7											
Intersection Capacity Utilization:	88.8%											
ICU Level of Service	E											
Analysis Period (min)	15											
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖↗			↖↗	↖
Traffic Volume (vph)	24	1416	24	8	836	23	176	4	11	31	0	17
Future Volume (vph)	24	1416	24	8	836	23	176	4	11	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996			0.992				0.850
Flt Protected	0.950			0.950				0.956			0.950	
Satd. Flow (prot)	1789	3571	0	1789	3564	0	0	1786	0	0	1789	1601
Flt Permitted	0.262			0.135				0.714			0.736	
Satd. Flow (perm)	493	3571	0	254	3564	0	0	1334	0	0	1386	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			6				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	26	1539	26	9	929	26	196	4	12	39	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1565	0	9	955	0	0	212	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	30.6	30.6		30.6	30.6			13.6			13.5	13.5
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.28			0.28	0.28
v/c Ratio	0.08	0.69		0.06	0.42			0.56			0.10	0.04
Control Delay	7.8	12.0		8.0	7.7			20.4			12.9	3.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	7.8	12.0		8.0	7.7			20.4			12.9	3.4
LOS	A	B		A	A			C			B	A
Approach Delay		12.0			7.7			20.4			9.6	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	0.9	48.0		0.3	22.3			15.0			2.5	0.0

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	4.9	#115.5		2.5	46.3			30.2			6.5	1.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0		45.0								35.0
Base Capacity (vph)	311	2257		160	2253			697			722	851
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.08	0.69		0.06	0.42			0.30			0.05	0.02

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 48.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 11.1

Intersection LOS: B

Intersection Capacity Utilization 63.9%

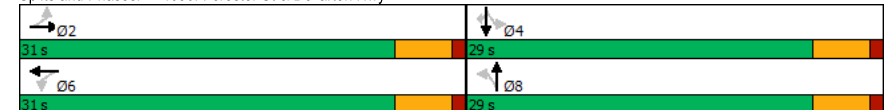
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↱	↱	↱	↰	↰
Traffic Volume (vph)	335	1124	518	117	223	349
Future Volume (vph)	335	1124	518	117	223	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.441				0.950	
Satd. Flow (perm)	831	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				127		323
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1222	563	127	242	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	1222	563	127	242	379
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	30.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	53.0	53.0	53.0	53.0	27.0	27.0
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.8%	33.8%
Maximum Green (s)	48.0	48.0	48.0	48.0	22.0	22.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	36.8	36.8	36.8	36.8	14.4	14.4
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.23	0.23
v/c Ratio	0.74	0.57	0.26	0.13	0.58	0.61
Control Delay	21.1	9.3	6.7	1.8	28.9	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	9.3	6.7	1.8	28.9	9.8
LOS	C	A	A	A	C	A
Approach Delay		12.0	5.8		17.3	
Approach LOS		B	A		B	
Queue Length 50th (m)	26.2	39.4	14.1	0.0	24.7	5.1

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#86.3	70.3	27.0	5.8	51.7	28.9
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	663	2857	2857	1303	676	806
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.43	0.20	0.10	0.36	0.47

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 61.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	412	1620	90	7	1014	56	51	9	17	33	5	197
Future Volume (vph)	412	1620	90	7	1014	56	51	9	17	33	5	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.106			0.126			0.754			0.749		
Satd. Flow (perm)	200	3579	1601	237	3579	1601	1420	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107			105			229
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			116.5			145.4	
Travel Time (s)		6.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Adj. Flow (vph)	416	1742	167	11	1166	66	61	13	25	41	5	229
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1742	167	11	1166	66	61	13	25	41	5	229
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	24.0	61.3	61.3	37.3	37.3	37.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	26.7%	68.1%	68.1%	41.4%	41.4%	41.4%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	17.9	55.7	55.7	31.7	31.7	31.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	55.2	55.7	55.7	31.8	31.8	31.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.62	0.62	0.35	0.35	0.35	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.95	0.79	0.16	0.13	0.92	0.10	0.17	0.03	0.05	0.11	0.01	0.14
Control Delay	58.1	16.1	3.3	24.9	41.3	1.8	27.6	25.4	0.2	26.8	25.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	16.1	3.3	24.9	41.3	1.8	27.6	25.4	0.2	26.8	25.2	0.2
LOS	E	B	A	C	D	A	C	C	A	C	C	A
Approach Delay		22.7			39.1			20.4			4.6	
Approach LOS		C			D			C			A	
Queue Length 50th (m)	55.2	106.9	3.7	1.3	100.4	0.0	8.2	1.7	0.0	5.4	0.7	0.0

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#110.9	136.1	3.5	3.7	#132.4	2.4	16.6	4.7	0.0	11.8	3.3	0.0
Internal Link Dist (m)		75.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	438	2215	1031	83	1264	635	362	481	487	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.79	0.16	0.13	0.92	0.10	0.17	0.03	0.05	0.11	0.01	0.14

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 89.2%

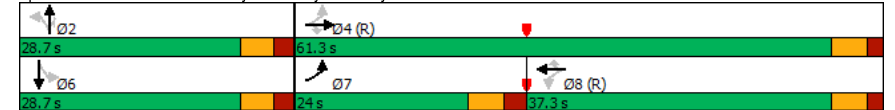
ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Option 1 Sensitivity

Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Volume (vph)	112	1235	518	39	74	116
Future Volume (vph)	112	1235	518	39	74	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850	0.917	
Flt Protected	0.950				0.981	
Satd. Flow (prot)	1789	3579	3579	1601	1694	0
Flt Permitted	0.361				0.981	
Satd. Flow (perm)	680	3579	3579	1601	1694	0
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)				42	118	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	181.9		116.7	
Travel Time (s)		37.0	13.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1342	563	42	80	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	1342	563	42	206	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	10.0	43.0	33.0	33.0	27.0	
Total Split (%)	14.3%	61.4%	47.1%	47.1%	38.6%	
Maximum Green (s)	5.0	38.0	28.0	28.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	Min	None	
Walk Time (s)		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)		0	0	0	0	
Act Effct Green (s)	33.0	33.0	25.3	25.3	9.1	
Actuated g/C Ratio	0.63	0.63	0.48	0.48	0.17	
v/c Ratio	0.23	0.59	0.32	0.05	0.52	
Control Delay	5.3	7.3	10.0	3.9	14.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.3	7.3	10.0	3.9	14.9	
LOS	A	A	B	A	B	
Approach Delay		7.1	9.6		14.9	
Approach LOS		A	A		B	
Queue Length 50th (m)	3.4	29.3	16.5	0.0	7.7	

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Option 1 Sensitivity

Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	10.2	58.8	30.7	4.3	22.4	
Internal Link Dist (m)		469.5	157.9		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	536	2637	1944	888	790	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.51	0.29	0.05	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 52.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 8.5

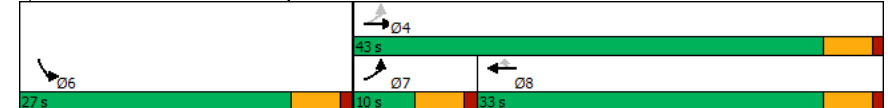
Intersection LOS: A

Intersection Capacity Utilization 53.7%

ICU Level of Service A
















Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Collector A













HCM Unsignalized Intersection Capacity Analysis 2030: Semour River Pl & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	203	25	0	248	84	0	0	47	82	0	158
Future Volume (Veh/h)	145	203	25	0	248	84	0	0	47	82	0	158
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	223	50	0	285	125	0	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked				0.99			0.99			0.99		
vC, conflicting volume	410			273			1250			1020		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	410			264			1249			1017		
tC, single (s)	4.1			4.1			7.1			6.5		
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5			4.0		
p0 queue free %	84			100			100			89		
cM capacity (veh/h)	1154			1302			76			201		
							799			162		
										209		
										696		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	454	410	87	419								
Volume Left	181	0	0	126								
Volume Right	50	125	87	293								
cSH	1154	1302	799	349								
Volume to Capacity	0.16	0.00	0.11	1.20								
Queue Length 95th (m)	4.2	0.0	2.8	134.0								
Control Delay (s)	4.4	0.0	10.1	147.3								
Lane LOS	A		B	F								
Approach Delay (s)	4.4	0.0	10.1	147.3								
Approach LOS			B	F								
Intersection Summary												
Average Delay	47.2											
Intersection Capacity Utilization	69.3%			ICU Level of Service			C					
Analysis Period (min)	15											

















HCM Unsignalized Intersection Capacity Analysis 2040: Old Dollarton & Front St

Option 1 Sensitivity
Timing Plan: PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	59	319	155	171	209
Future Volume (Veh/h)	81	59	319	155	171	209
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	354	172	190	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.90	0.90			0.90	
vC, conflicting volume	1052	440			526	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1000	316			412	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	90			81	
cM capacity (veh/h)	197	648			1027	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	526	422			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	279	1700	1027			
Volume to Capacity	0.56	0.31	0.19			
Queue Length 95th (m)	24.0	0.0	5.1			
Control Delay (s)	33.1	0.0	5.3			
Lane LOS	D		A			
Approach Delay (s)	33.1	0.0	5.3			
Approach LOS	D					
Intersection Summary						
Average Delay			6.7			
Intersection Capacity Utilization	64.8%			ICU Level of Service	C	
Analysis Period (min)	15					









HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive & Windridge Dr

Option 1 Sensitivity
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	27	0	21	0	1023	56	25	775	0
Future Volume (Veh/h)	0	0	0	27	0	21	0	1023	56	25	775	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	0	0	0	45	0	35	0	1279	70	26	816	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None		None		
Median storage (veh)												
Upstream signal (m)								264		113		
pX, platoon unblocked	0.61	0.61	0.92	0.61	0.61	0.57	0.92				0.57	
vC, conflicting volume	2217	2217	816	2182	2182	1314	816				1349	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2377	2377	756	2319	2319	1173	756				1235	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	0	100	74	100				92	
cM capacity (veh/h)	10	19	375	15	21	133	786				321	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	80	1349	842								
Volume Left	0	45	0	26								
Volume Right	0	35	70	0								
cSH	1700	25	1700	321								
Volume to Capacity	0.00	3.25	0.79	0.08								
Queue Length 95th (m)	0.0	Err	0.0	2.0								
Control Delay (s)	0.0	Err	0.0	3.1								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	Err	0.0	3.1								
Approach LOS	A	F										
Intersection Summary												
Average Delay				353.4								
Intersection Capacity Utilization				Err%	ICU Level of Service			H				
Analysis Period (min)				15								










HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive /Riverside Drive & Front St

Option 1 Sensitivity
Timing Plan: PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	81	73	694	230	167
Future Volume (Veh/h)	137	81	73	694	230	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	771	256	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	896	221	442			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	896	221	442			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	41	89	93			
cM capacity (veh/h)	259	783	1114			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	338	514	171	271	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	186	
cSH	345	1114	1700	1700	1700	
Volume to Capacity	0.70	0.07	0.30	0.10	0.16	
Queue Length 95th (m)	38.4	1.8	0.0	0.0	0.0	
Control Delay (s)	36.6	2.6	0.0	0.0	0.0	
Lane LOS	E	A				
Approach Delay (s)	36.6	1.0		0.0		
Approach LOS	E					
Intersection Summary						
Average Delay			6.3			
Intersection Capacity Utilization			55.6%	ICU Level of Service		B
Analysis Period (min)			15			























HCM Unsignalized Intersection Capacity Analysis 4030: Forester St & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	20	18	18	42	6
Future Volume (Veh/h)	44	20	18	18	42	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	22	20	20	47	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			71		120	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		120	60
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	99
cM capacity (veh/h)			1529		864	1005
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	71	40	54			
Volume Left	0	20	47			
Volume Right	22	0	7			
cSH	1700	1529	880			
Volume to Capacity	0.04	0.01	0.06			
Queue Length 95th (m)	0.0	0.3	1.5			
Control Delay (s)	0.0	3.7	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.7	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			18.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Option 1 Sensitivity
Timing Plan: PM Peak

															
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations		 			 			 							
Traffic Volume (veh/h)	12	2092	9	24	1232	7	1	0	22	8	0	14			
Future Volume (Veh/h)	12	2092	9	24	1232	7	1	0	22	8	0	14			
Sign Control		Free			Free			Stop			Stop				
Grade		0%			0%			0%			0%				
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70			
Hourly flow rate (vph)	13	2226	10	27	1369	8	2	0	44	11	0	20			
Pedestrians															
Lane Width (m)															
Walking Speed (m/s)															
Percent Blockage															
Right turn flare (veh)															
Median type		None			None										
Median storage (veh)															
Upstream signal (m)					284										
pX, platoon unblocked	0.69						0.69	0.69		0.69	0.69	0.69			
vC, conflicting volume	1377			2236			3016	3688	1118	2610	3689	688			
vC1, stage 1 conf vol															
vC2, stage 2 conf vol															
vCu, unblocked vol	651			2236			3022	3996	1118	2435	3997	0			
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9			
tC, 2 stage (s)															
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3			
p0 queue free %	98			88			42	100	78	0	100	97			
cM capacity (veh/h)	644			228			3	2	201	8	2	749			
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1							
Volume Total	13	1484	752	27	913	464	46	31							
Volume Left	13	0	0	27	0	0	2	11							
Volume Right	0	0	10	0	0	8	44	20							
cSH	644	1700	1700	228	1700	1700	57	22							
Volume to Capacity	0.02	0.87	0.44	0.12	0.54	0.27	0.80	1.42							
Queue Length 95th (m)	0.5	0.0	0.0	3.0	0.0	0.0	26.7	30.6							
Control Delay (s)	10.7	0.0	0.0	22.9	0.0	0.0	180.7	601.5							
Lane LOS	B			C			F	F							
Approach Delay (s)	0.1			0.4			180.7	601.5							
Approach LOS							F	F							
Intersection Summary															
Average Delay				7.4											
Intersection Capacity Utilization	69.6%			ICU Level of Service					C						
Analysis Period (min)	15														

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Volume (vph)	385	2	10	751	0	11
Future Volume (vph)	385	2	10	751	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.850
Flt Protected			0.950			
Satd. Flow (prot)	3575	0	1789	3579	1883	1601
Flt Permitted			0.506			
Satd. Flow (perm)	3575	0	953	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					370
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	2	11	816	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	11	816	0	12
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.12		0.01	0.24		0.02
Control Delay	0.9		1.3	1.1		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	0.9		1.3	1.1		0.1
LOS	A		A	A		A
Approach Delay	0.9			1.1	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

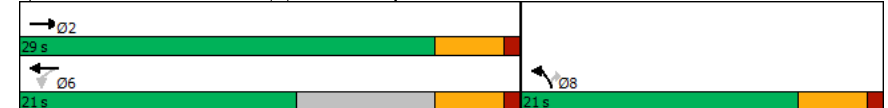
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	8.3		1.1	17.1		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3371		898	3374		825
Starvation Cap Reductn	0		0	439		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.12		0.01	0.28		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.24	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 24.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity













2050: Amherst Ave/Old Dollarton & Dollarton Hwy

	↗	→	↘	↖	←	↙	↘	↖	↗	↘	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	179	1074	114	98	1960	10	94	27	60	18	62	346
Future Volume (vph)	179	1074	114	98	1960	10	94	27	60	18	62	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.962			0.989	
Satd. Flow (prot)	1601	3344	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.075			0.211				0.696			0.913	
Satd. Flow (perm)	126	3344	0	401	3507	0	0	1224	1408	0	1754	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17							69			433
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Adj. Flow (vph)	197	1180	125	102	2042	10	99	28	63	23	78	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1305	0	102	2052	0	0	127	63	0	101	433
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	37.0	67.0		30.0	30.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	33.6%	60.9%		27.3%	27.3%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	32.0	62.0		25.0	25.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	63.2	63.2		49.1	49.1		14.7	14.7	14.7	14.7	14.7	14.7
Actuated g/C Ratio	0.74	0.74		0.57	0.57		0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.75	0.53		0.45	1.02		0.61	0.21	0.34	0.69		
Control Delay	35.0	6.3		21.6	47.2		45.4	8.8	34.0	9.4		
Queue Delay	0.0	13.6		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	35.0	19.9		21.6	47.2		45.4	8.8	34.0	9.4		
LOS	C	B		C	D		D	A	C	A		
Approach Delay		21.9			45.9		33.3			14.0		
Approach LOS		C			D		C			B		

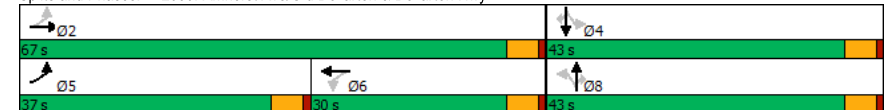
Lanes, Volumes, Timings

Option 2 Sensitivity

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	17.1	38.7		8.6	~164.8			19.5	0.0		14.7	0.0
Queue Length 95th (m)	41.0	69.6		30.9	#281.6			36.6	8.9		24.7	12.3
Internal Link Dist (m)		45.3			44.7			199.8			74.2	
Turn Bay Length (m)	20.0			75.0					15.0			30.0
Base Capacity (vph)	660	2463		229	2006			557	678		798	964
Starvation Cap Reductn	20	1159		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	1.00		0.45	1.02			0.23	0.09		0.13	0.45
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 85.9												
Natural Cycle: 110												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.02												
Intersection Signal Delay: 33.3												
Intersection LOS: C												
Intersection Capacity Utilization 92.5%												
ICU Level of Service F												
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↖	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖	↖	↖	↑	↖	↖	↖	
Traffic Volume (vph)	36	833	270	370	1442	45	232	52	312	116	73	115
Future Volume (vph)	36	833	270	370	1442	45	232	52	312	116	73	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963				0.850			0.850		0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1710	0
Flt Permitted	0.063			0.950			0.213			0.715		
Satd. Flow (perm)	119	3446	0	3471	3579	1601	401	1883	1601	1347	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37				170			356		48	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	40	926	300	411	1602	50	290	65	390	145	91	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	411	1602	50	290	65	390	145	235	0
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	64.6		25.0	78.2	78.2	25.0	41.7		13.7	30.4	
Total Split (%)	7.9%	44.6%		17.2%	53.9%	53.9%	17.2%	28.8%		9.4%	21.0%	
Maximum Green (s)	5.0	59.1		18.6	72.7	72.7	18.6	35.3		7.3	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	71.8	64.0		21.4	80.0	78.5	43.6	30.4	145.0	35.3	22.5	
Actuated g/C Ratio	0.50	0.44		0.15	0.55	0.54	0.30	0.21	1.00	0.24	0.16	
v/c Ratio	0.27	0.80		0.80	0.81	0.05	0.90	0.16	0.24	0.39	0.77	
Control Delay	18.9	39.3		72.2	32.1	0.1	72.1	44.4	0.4	40.0	62.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	39.3		72.2	32.1	0.1	72.1	44.4	0.4	40.0	62.9	
LOS	B	D		E	C	A	E	D	A	D	E	
Approach Delay		38.6			39.3			32.1			54.2	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	4.4	160.4		58.6	204.9	0.0	65.9	14.8	0.0	30.0	52.0	

Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↖	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	9.8	190.4		#82.1	243.1	0.0	#79.1	23.8	0.0	40.5	68.3	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0	50.0		
Base Capacity (vph)	148	1541		521	1973	944	321	489	1601	376	350	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.80		0.79	0.81	0.05	0.90	0.13	0.24	0.39	0.67	
Intersection Summary												
Area Type:	Other											
Cycle Length:	145											
Actuated Cycle Length:	145											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green											
Natural Cycle:	105											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.90											
Intersection Signal Delay:	39.2											
Intersection Capacity Utilization	81.1%											
ICU Level of Service	D											
Analysis Period (min)	15											
#	95th percentile volume exceeds capacity, queue may be longer.											
	Queue shown is maximum after two cycles.											

Splits and Phases: 3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

Option 2 Sensitivity

3030: Riverside Drive & Old Dollarton

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖		↖	↗		↖	↗	
Traffic Volume (vph)	229	10	46	45	22	82	25	274	24	51	514	220
Future Volume (vph)	229	10	46	45	22	82	25	274	24	51	514	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	30.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.925			0.988			0.850
Flt Protected		0.954			0.985		0.950				0.996	
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1861	0	0	1876	1601
Flt Permitted		0.617			0.827		0.217				0.943	
Satd. Flow (perm)	0	1162	1601	0	1441	0	409	1861	0	0	1776	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			9				119
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	327	14	66	64	31	117	28	304	27	56	565	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	66	0	212	0	28	331	0	0	621	242
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		21.3			21.3		23.1	23.1		23.1	23.1	
Actuated g/C Ratio		0.40	0.40		0.40		0.44	0.44		0.44	0.44	
v/c Ratio		0.73	0.10		0.33		0.16	0.40		0.80	0.31	
Control Delay		23.7	3.4		6.7		13.5	12.7		24.3	7.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		23.7	3.4		6.7		13.5	12.7		24.3	7.2	
LOS		C	A		A		B	B		C	A	
Approach Delay		20.4			6.7			12.8			19.5	
Approach LOS		C			A			B		B		
Queue Length 50th (m)		27.5	0.0		5.8		1.6	20.6		50.4	7.1	

Lanes, Volumes, Timings

Option 2 Sensitivity

3030: Riverside Drive & Old Dollarton

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		35.3	3.1		10.4		6.7	41.8			#112.4	20.6
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0				30.0					15.0
Base Capacity (vph)		615	879		818		200	917			871	846
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.55	0.08		0.26		0.14	0.36			0.71	0.29

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 52.6

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 75.6%

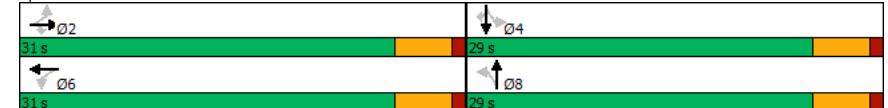
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings

Option 2 Sensitivity

3050: Riverside Drive & Dollarton Hwy

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖		↖	↖		↖	↖	
Traffic Volume (vph)	185	868	16	48	1644	74	81	47	34	114	68	300
Future Volume (vph)	185	868	16	48	1644	74	81	47	34	114	68	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.937			0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	3388	0	1825	3440	0	1630	1627	0	1573	1608	0
Flt Permitted	0.059			0.295			0.172			0.640		
Satd. Flow (perm)	106	3388	0	567	3440	0	295	1627	0	1060	1608	0
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		3			6			28			161	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Adj. Flow (vph)	203	954	18	53	1827	82	101	59	43	127	76	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	203	972	0	53	1909	0	101	102	0	127	409	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2			6		3	8		7	4	
Permitted Phases	2						8			4		
Detector Phase	5	2		6	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0		25.0	25.0		8.0	29.0		8.0	29.0	
Total Split (s)	15.0	83.0		68.0	68.0		8.0	29.0		8.0	29.0	
Total Split (%)	12.5%	69.2%		56.7%	56.7%		6.7%	24.2%		6.7%	24.2%	
Maximum Green (s)	10.0	78.0		63.0	63.0		4.0	24.0		4.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		13.0		13.0	13.0			17.0			17.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	79.0	79.0		64.0	64.0		29.3	23.3		29.3	23.3	
Actuated g/C Ratio	0.67	0.67		0.54	0.54		0.25	0.20		0.25	0.20	
v/c Ratio	0.93	0.43		0.17	1.02		0.78	0.30		0.45	0.92	
Control Delay	75.0	10.1		16.3	54.9		74.3	31.4		40.9	55.0	
Queue Delay	0.0	0.0		0.0	13.6		0.0	0.0		0.0	0.0	
Total Delay	75.0	10.1		16.3	68.5		74.3	31.4		40.9	55.0	
LOS	E	B		B	E		E	C		D	E	
Approach Delay		21.3			67.1			52.7			51.7	
Approach LOS		C			E			D			D	

Lanes, Volumes, Timings

Option 2 Sensitivity

3050: Riverside Drive & Dollarton Hwy

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	32.8	52.8		6.2	~255.3		18.2	14.6		23.4	59.8	
Queue Length 95th (m)	#78.5	65.6		13.9	#298.3		#34.5	25.8		40.0	#115.7	
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0								
Base Capacity (vph)	219	2264		306	1864		129	366		284	466	
Starvation Cap Reductn	0	0		0	64		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.93	0.43		0.17	1.06		0.78	0.28		0.45	0.88	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 118.3

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 50.3

Intersection LOS: D

Intersection Capacity Utilization 97.9%

ICU Level of Service F

Analysis Period (min) 15

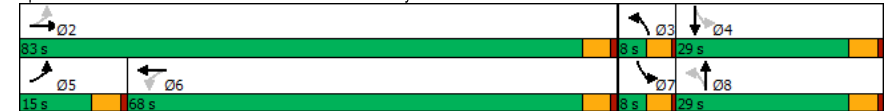
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	26	819	109	20	1714	15	81	1	11	28	1	33
Future Volume (vph)	26	819	109	20	1714	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.999			0.984				0.850
Flt Protected	0.950			0.950				0.958			0.954	
Satd. Flow (prot)	1789	3514	0	1789	3575	0	0	1775	0	0	1797	1601
Flt Permitted	0.106			0.266				0.719			0.741	
Satd. Flow (perm)	200	3514	0	501	3575	0	0	1333	0	0	1396	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			2			11				31
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Adj. Flow (vph)	28	881	117	21	1785	16	87	1	12	47	2	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	998	0	21	1801	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	41.4%
Maximum Green (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	38.7	38.7		38.7	38.7			10.1		10.1	10.1	
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.19		0.19	0.19	
v/c Ratio	0.19	0.39		0.06	0.69			0.38		0.18	0.17	
Control Delay	8.2	4.5		4.3	7.8			22.2		20.4	12.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	8.2	4.5		4.3	7.8			22.2		20.4	12.3	
LOS	A	A		A	A			C		C	B	
Approach Delay		4.6			7.8			22.2		16.1		
Approach LOS		A			A			C		B		
Queue Length 50th (m)	0.8	17.5		0.6	47.6			7.9		4.2	2.0	

Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	5.0	33.3		2.8	90.2			18.8			7.3	5.1
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0		45.0								35.0
Base Capacity (vph)	147	2603		370	2640			639			662	776
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.19	0.38		0.06	0.68			0.16			0.07	0.07

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 53.1

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 7.5

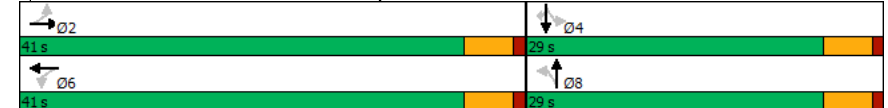
Intersection LOS: A

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	348	510	1239	194	139	510
Future Volume (vph)	348	510	1239	194	139	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.100				0.950	
Satd. Flow (perm)	188	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				151		312
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	387	567	1377	216	154	567
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	567	1377	216	154	567
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	19.0	60.0	41.0	41.0	30.0	30.0
Total Split (%)	21.1%	66.7%	45.6%	45.6%	33.3%	33.3%
Maximum Green (s)	14.0	55.0	36.0	36.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	54.3	54.3	35.2	35.2	20.3	20.3
Actuated g/C Ratio	0.64	0.64	0.42	0.42	0.24	0.24
v/c Ratio	1.00	0.25	0.93	0.29	0.36	0.91
Control Delay	71.9	7.5	36.9	7.3	29.0	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	7.5	36.9	7.3	29.0	34.8
LOS	E	A	D	A	C	C
Approach Delay		33.6	32.8		33.6	
Approach LOS		C	C		C	
Queue Length 50th (m)	-58.4	21.7	119.4	6.9	21.0	43.2

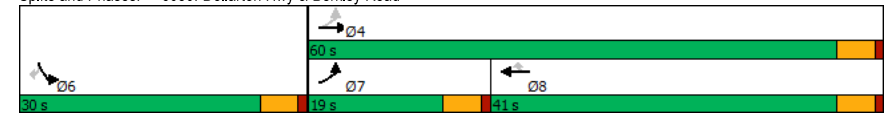
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#112.7	29.8	#166.5	20.8	37.1	#102.7
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	387	2344	1534	772	532	695
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.24	0.90	0.28	0.29	0.82

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 84.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

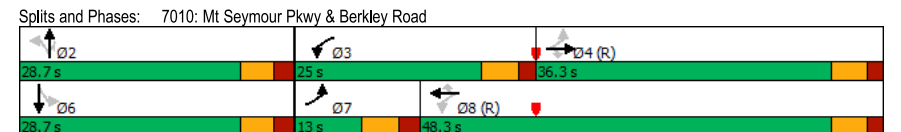
	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	179	1002	125	311	1492	52	46	9	126	74	82	370
Future Volume (vph)	179	1002	125	311	1492	52	46	9	126	74	82	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.084			0.159			0.691			0.750		
Satd. Flow (perm)	158	3579	1601	299	3579	1601	1301	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			107			173			405
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.6			116.0			119.3			142.6	
Travel Time (s)		6.0			7.0			8.9			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	195	1089	136	338	1622	57	58	11	158	82	91	411
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1089	136	338	1622	57	58	11	158	82	91	411
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	13.0	36.3	36.3	25.0	48.3	48.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	14.4%	40.3%	40.3%	27.8%	53.7%	53.7%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	6.9	30.7	30.7	19.4	42.7	42.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0		10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	
Act Effct Green (s)	59.3	47.1	47.1	69.2	53.3	53.3	12.5	12.5	12.5	12.5	12.5	90.0
Actuated g/C Ratio	0.66	0.52	0.52	0.77	0.59	0.59	0.14	0.14	0.14	0.14	0.14	1.00
v/c Ratio	0.60	0.58	0.15	0.63	0.77	0.06	0.32	0.04	0.43	0.42	0.35	0.26
Control Delay	25.6	18.0	1.7	14.0	18.5	0.6	38.7	31.8	8.2	41.2	37.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	18.0	1.7	14.0	18.5	0.6	38.7	31.8	8.2	41.2	37.9	0.4
LOS	C	B	A	B	B	A	D	C	A	D	D	A
Approach Delay		17.5			17.2			17.1			12.0	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	15.9	64.0	0.0	17.8	97.7	0.0	9.2	1.7	0.0	13.2	14.5	0.0

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	37.9	107.8	5.9	46.1	#182.8	1.3	17.1	5.4	8.5	25.3	26.7	0.0
Internal Link Dist (m)		75.6			92.0			95.3			118.6	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	325	1873	921	594	2120	992	357	516	564	387	516	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.58	0.15	0.57	0.77	0.06	0.16	0.02	0.28	0.21	0.18	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 16.6	Intersection LOS: B
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖↖	↖↖	↖	↖	↖
Traffic Volume (vph)	116	533	1306	65	46	129
Future Volume (vph)	116	533	1306	65	46	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.115				0.950	
Satd. Flow (perm)	217	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				66		140
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	391.4		116.7	
Travel Time (s)		37.0	29.4		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	579	1420	71	50	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	126	579	1420	71	50	140
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	10.0	46.0	36.0	36.0	24.0	24.0
Total Split (%)	14.3%	65.7%	51.4%	51.4%	34.3%	34.3%
Maximum Green (s)	5.0	41.0	31.0	31.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	37.5	37.5	29.9	29.9	19.2	19.2
Actuated g/C Ratio	0.56	0.56	0.45	0.45	0.29	0.29
v/c Ratio	0.53	0.29	0.89	0.09	0.10	0.25
Control Delay	15.1	7.9	26.2	4.1	19.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	7.9	26.2	4.1	19.8	5.5
LOS	B	A	C	A	B	A
Approach Delay		9.2	25.2		9.3	
Approach LOS		A	C		A	
Queue Length 50th (m)	6.6	17.6	86.3	0.4	4.9	0.0

7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	14.3	25.4	#130.1	6.4	12.2	11.5
Internal Link Dist (m)		469.5	367.4		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	240	2220	1678	785	514	560
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.26	0.85	0.09	0.10	0.25

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 60.9%

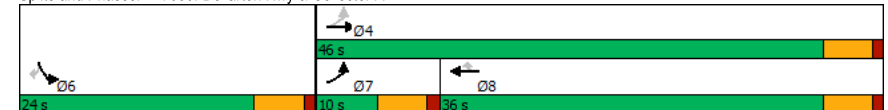
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
















Queue shown is maximum after two cycles.

Splits and Phases: 7050: Dollarton Hwy & Collector A














HCM Unsignalized Intersection Capacity Analysis
2030: Semour River Pl & Old Dollarton

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	103	5	0	234	88	0	0	44	94	0	181
Future Volume (Veh/h)	97	103	5	0	234	88	0	0	44	94	0	181
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	121	129	6	0	252	95	0	0	55	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	347			135			900	721	132	728	676	300
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	347			135			900	721	132	728	676	300
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			100	100	94	60	100	69
cM capacity (veh/h)	1185			1279			167	320	923	294	339	738
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	347	55	344								
Volume Left	121	0	0	118								
Volume Right	6	95	55	226								
cSH	1185	1279	923	486								
Volume to Capacity	0.10	0.00	0.06	0.71								
Queue Length 95th (m)	2.6	0.0	1.4	42.2								
Control Delay (s)	4.5	0.0	9.1	28.5								
Lane LOS	A		A	D								
Approach Delay (s)	4.5	0.0	9.1	28.5								
Approach LOS			A	D								
Intersection Summary												
Average Delay	11.4											
Intersection Capacity Utilization	61.8%			ICU Level of Service			B					
Analysis Period (min)	15											

















HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 2 Sensitivity

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	178	31	150	71	52	353
Future Volume (Veh/h)	178	31	150	71	52	353
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	34	167	79	58	392
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	98			338		
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	714	206			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	705	190			230	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	48	96			96	
cM capacity (veh/h)	380	841			1321	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	246	450			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	414	1700	1321			
Volume to Capacity	0.56	0.14	0.04			
Queue Length 95th (m)	25.4	0.0	1.0			
Control Delay (s)	24.3	0.0	1.4			
Lane LOS	C		A			
Approach Delay (s)	24.3	0.0	1.4			
Approach LOS	C					
Intersection Summary						
Average Delay	6.7					
Intersection Capacity Utilization	55.4%			ICU Level of Service		B
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive/Riverside & Windridge Dr

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	0	29	0	559	18	12	705	0
Future Volume (Veh/h)	0	0	0	73	0	29	0	559	18	12	705	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	0	0	0	81	0	32	0	621	20	13	783	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)							264			113		
pX, platoon unblocked												
vC, conflicting volume	1472	1450	783	1440	1440	631	783				641	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1472	1450	783	1440	1440	631	783				641	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	26	100	93	100				99	
cM capacity (veh/h)	97	129	394	109	131	481	835				943	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	113	641	796								
Volume Left	0	81	0	13								
Volume Right	0	32	20	0								
cSH	1700	140	1700	943								
Volume to Capacity	0.00	0.81	0.38	0.01								
Queue Length 95th (m)	0.0	38.3	0.0	0.3								
Control Delay (s)	0.0	93.3	0.0	0.4								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	93.3	0.0	0.4								
Approach LOS	A	F										
Intersection Summary												
Average Delay				7.0								
Intersection Capacity Utilization				Err%	ICU Level of Service			H				
Analysis Period (min)				15								










HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Option 2 Sensitivity

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	39	38	260	420	157
Future Volume (Veh/h)	48	39	38	260	420	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	42	41	283	457	171
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked	0.76	0.74	0.74			
vC, conflicting volume	908	542	628			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628	214	328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	93	96			
cM capacity (veh/h)	324	615	916			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	94	324	628			
Volume Left	52	41	0			
Volume Right	42	0	171			
cSH	411	916	1700			
Volume to Capacity	0.23	0.04	0.37			
Queue Length 95th (m)	6.6	1.1	0.0			
Control Delay (s)	16.3	1.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.3	1.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			57.5%	ICU Level of Service		B
Analysis Period (min)			15			






















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 2 Sensitivity

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	17	31	27	16	33	18
Future Volume (Veh/h)	17	31	27	16	33	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	34	30	18	37	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			53		114	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		114	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	98
cM capacity (veh/h)			1553		865	1037
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	53	48	57			
Volume Left	0	30	37			
Volume Right	34	0	20			
cSH	1700	1553	919			
Volume to Capacity	0.03	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	4.7	9.2			
Lane LOS	A		A			
Approach Delay (s)	0.0	4.7	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			19.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 2 Sensitivity

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 					
Traffic Volume (veh/h)	1	1262	7	49	1852	7	1	0	31	12	0	6	
Future Volume (Veh/h)	1	1262	7	49	1852	7	1	0	31	12	0	6	
Sign Control	Free			Free			Stop			Stop			
Grade	0%			0%			0%			0%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50	
Hourly flow rate (vph)	1	1402	8	54	2058	8	1	0	39	24	0	12	
Pedestrians													
Lane Width (m)													
Walking Speed (m/s)													
Percent Blockage													
Right turn flare (veh)													
Median type	None			None									
Median storage (veh)													
Upstream signal (m)	284												
pX, platoon unblocked	0.63						0.63	0.63			0.63	0.63	0.63
vC, conflicting volume	2066	1410					2557	3582	705	2912	3582	1033	
vC1, stage 1 conf vol													
vC2, stage 2 conf vol													
vCu, unblocked vol	1508	1410					2292	3930	705	2859	3930	0	
tC, single (s)	4.1	4.1					7.5	6.5	6.9	7.5	6.5	6.9	
tC, 2 stage (s)													
tF (s)	2.2	2.2					3.5	4.0	3.3	3.5	4.0	3.3	
p0 queue free %	100	89					92	100	90	0	100	98	
cM capacity (veh/h)	275	480					12	2	379	4	2	679	
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1					
Volume Total	1	935	475	54	1372	694	40	36					
Volume Left	1	0	0	54	0	0	1	24					
Volume Right	0	0	8	0	0	8	39	12					
cSH	275	1700	1700	480	1700	1700	213	6					
Volume to Capacity	0.00	0.55	0.28	0.11	0.81	0.41	0.19	6.16					
Queue Length 95th (m)	0.1	0.0	0.0	2.9	0.0	0.0	5.1	Err					
Control Delay (s)	18.1	0.0	0.0	13.5	0.0	0.0	25.7	Err					
Lane LOS	C	B					D	F					
Approach Delay (s)	0.0	0.3					25.7	Err					
Approach LOS							D	F					
Intersection Summary													
Average Delay	100.3												
Intersection Capacity Utilization	65.6%					ICU Level of Service					C		
Analysis Period (min)	15												

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↖	↑↑	↙	↘
Traffic Volume (vph)	700	2	10	645	0	9
Future Volume (vph)	700	2	10	645	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected			0.950			
Satd. Flow (prot)	3579	0	1789	3579	1883	1601
Flt Permitted			0.362			
Satd. Flow (perm)	3579	0	682	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					147
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	2	11	701	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	763	0	11	701	0	10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.23		0.02	0.21		0.03
Control Delay	1.0		1.4	1.0		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	1.0		1.4	1.0		0.1
LOS	A		A	A		A
Approach Delay	1.0			1.0	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

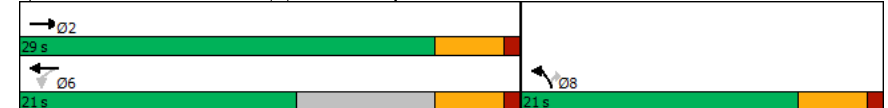
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	15.8		1.2	14.3		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3374		643	3374		684
Starvation Cap Reductn	0		0	463		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.23		0.02	0.24		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.23	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 31.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

	↗	→	↘	↖	←	↙	↘	↖	↗	↘	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	401	1729	46	37	1349	15	138	19	57	13	19	239
Future Volume (vph)	401	1729	46	37	1349	15	138	19	57	13	19	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	75.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	30.0	0.0
Storage Lanes	1	0	1	0	0	0	0	1	0	0	1	0
Taper Length (m)	15.0	0.0	15.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996	0.998	0.998	0.998	0.998	0.998	0.998	0.850	0.850	0.850	0.850	0.850
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (prot)	1789	3554	0	1690	3559	0	0	1778	1526	0	1883	1570
Flt Permitted	0.100	0.100	0.100	0.100	0.100	0.100	0.100	0.727	0.727	0.727	0.869	0.869
Satd. Flow (perm)	188	3554	0	197	3559	0	0	1349	1526	0	1669	1570
Right Turn on Red	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Satd. Flow (RTOR)	5	5	5	5	5	5	5	85	85	85	266	266
Link Speed (k/h)	48	48	48	48	48	48	48	48	48	48	48	48
Link Distance (m)	69.3	69.3	69.3	69.3	69.3	69.3	69.3	223.8	223.8	223.8	98.7	98.7
Travel Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	5.2	16.8	16.8	16.8	7.4	7.4
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Adj. Flow (vph)	422	1820	48	44	1587	18	173	24	71	14	21	266
Shared Lane Traffic (%)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	422	1868	0	44	1605	0	0	197	71	0	35	266
Turn Type	pm+pt	NA	NA	Perm	NA	NA	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2	2	6	6	6	8	8	8	4	4	4
Permitted Phases	2	2	2	6	6	6	8	8	8	4	4	4
Detector Phase	5	2	2	6	6	6	8	8	8	4	4	4
Switch Phase	5.0	10.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Initial (s)	10.0	28.0	28.0	28.0	28.0	28.0	30.0	30.0	30.0	30.0	30.0	30.0
Minimum Split (s)	20.0	60.0	60.0	40.0	40.0	40.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	22.2%	66.7%	66.7%	44.4%	44.4%	44.4%	33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	15.0	55.0	55.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	None	None	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0	16.0	18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	56.2	56.2	56.2	36.1	36.1	36.1	18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.68	0.68	0.68	0.44	0.44	0.44	0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.96	0.77	0.77	0.51	1.03	1.03	0.67	0.18	0.18	0.10	0.48	0.48
Control Delay	57.8	12.5	12.5	45.1	54.9	54.9	40.8	5.6	5.6	25.2	6.6	6.6
Queue Delay	42.9	47.8	47.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.7	60.3	60.3	45.1	54.9	54.9	40.8	5.6	5.6	25.2	6.6	6.6
LOS	F	E	E	D	D	D	D	A	A	C	A	A
Approach Delay	67.8	67.8	67.8	54.6	54.6	54.6	31.5	31.5	31.5	8.8	8.8	8.8
Approach LOS	E	E	E	D	D	D	C	C	C	A	A	A

Lanes, Volumes, Timings

Option 2 Sensitivity

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

	↗	→	↘	↖	←	↙	↘	↖	↗	↘	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	49.2	87.3	87.3	4.8	~142.9	~142.9	28.3	0.0	4.4	0.0	0.0	0.0
Queue Length 95th (m)	#120.4	156.8	156.8	#20.6	#193.7	#193.7	42.1	5.3	11.3	16.8	16.8	16.8
Internal Link Dist (m)	45.3	45.3	45.3	44.7	44.7	44.7	199.8	199.8	199.8	74.7	74.7	74.7
Turn Bay Length (m)	20.0	20.0	20.0	75.0	75.0	75.0	15.0	15.0	15.0	30.0	30.0	30.0
Base Capacity (vph)	441	2431	2431	86	1564	1564	428	542	529	679	679	679
Starvation Cap Reductn	91	855	855	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.21	1.19	1.19	0.51	1.03	1.03	0.46	0.13	0.07	0.39	0.39	0.39

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 82.2

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 56.8

Intersection LOS: E

Intersection Capacity Utilization 85.3%

ICU Level of Service E

Analysis Period (min) 15

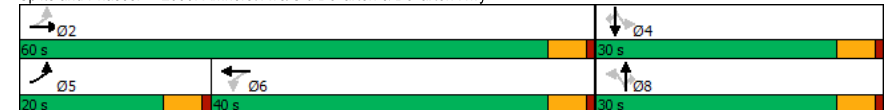
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



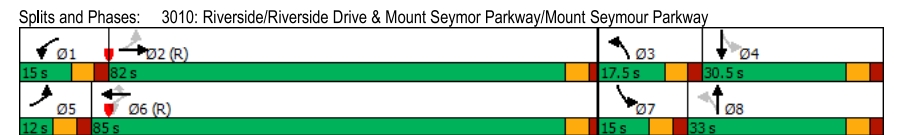
Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖	↖	↑	↖	↖	↖	↖
Traffic Volume (vph)	99	1342	322	290	720	62	168	97	502	47	55	71
Future Volume (vph)	99	1342	322	290	720	62	168	97	502	47	55	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971				0.850			0.850		0.916	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1725	0
Flt Permitted	0.312			0.046			0.314			0.663		
Satd. Flow (perm)	588	3475	0	168	3579	1601	591	1883	1601	1249	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				122			298		39	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	121	1637	393	322	800	69	210	121	628	59	69	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	322	800	69	210	121	628	59	158	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	12.0	82.0		15.0	85.0	85.0	17.5	33.0		15.0	30.5	
Total Split (%)	8.3%	56.6%		10.3%	58.6%	58.6%	12.1%	22.8%		10.3%	21.0%	
Maximum Green (s)	5.6	76.5		8.6	79.5	79.5	11.1	26.6		8.6	24.1	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	92.5	82.5		101.4	87.6	86.1	34.3	23.5	145.0	28.3	17.9	
Actuated g/C Ratio	0.64	0.57		0.70	0.60	0.59	0.24	0.16	1.00	0.20	0.12	
v/c Ratio	0.26	1.02		0.70	0.37	0.07	0.84	0.40	0.39	0.21	0.64	
Control Delay	9.5	56.0		42.6	15.9	0.1	74.5	58.8	0.7	43.1	56.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.5	56.0		42.6	15.9	0.1	74.5	58.8	0.7	43.1	56.5	
LOS	A	E		D	B	A	E	E	A	D	E	
Approach Delay		53.4			22.2			24.2			52.8	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	10.3	~331.1		30.0	59.4	0.0	52.1	32.4	0.0	13.4	33.0	

Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	17.8	#319.4		#53.0	80.8	0.1	63.1	43.9	0.0	21.2	46.2	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0	50.0		
Base Capacity (vph)	458	1991		461	2162	1000	251	376	1601	289	347	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	1.02		0.70	0.37	0.07	0.84	0.32	0.39	0.20	0.46	

Intersection Summary	
Area Type:	Other
Cycle Length:	145
Actuated Cycle Length:	145
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	39.0 Intersection LOS: D
Intersection Capacity Utilization	85.5% ICU Level of Service E
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 2 Sensitivity

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖		↖	↗			↖	↗
Traffic Volume (vph)	202	30	36	28	18	80	43	527	70	77	283	288
Future Volume (vph)	202	30	36	28	18	80	43	527	70	77	283	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.914			0.983			0.850
Flt Protected		0.958			0.989		0.950				0.989	
Satd. Flow (prot)	0	1804	1601	0	1703	0	1789	1851	0	0	1863	1601
Flt Permitted		0.706			0.892		0.454				0.639	
Satd. Flow (perm)	0	1330	1601	0	1536	0	855	1851	0	0	1204	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			15				276
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	253	38	45	33	21	94	46	561	74	86	314	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	45	0	148	0	46	635	0	0	400	320
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	55.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		17.7	17.7		17.7		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.35	0.35		0.35		0.48	0.48		0.48	0.48	
v/c Ratio		0.62	0.08		0.25		0.11	0.70		0.69	0.35	
Control Delay		21.1	4.8		6.9		9.1	15.9		18.8	3.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		21.1	4.8		6.9		9.1	15.9		18.8	3.3	
LOS		C	A		A		A	B		B	A	
Approach Delay		18.9			6.9			15.4		11.9		
Approach LOS		B			A			B		B		
Queue Length 50th (m)		23.0	0.0		3.5		2.2	42.0		26.9	2.0	

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 2 Sensitivity

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		38.3	4.0		12.0		7.3	83.0			#62.8	13.3
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)		632	784		779		512	1115			721	1070
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.46	0.06		0.19		0.09	0.57			0.55	0.30

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 50.5

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 80.6%

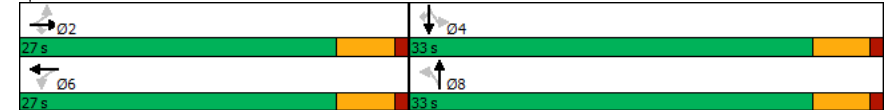
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside & Old Dollarton



Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 2 Sensitivity

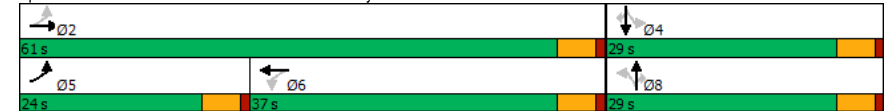
	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖	↖		↖	↖
Traffic Volume (vph)	435	1318	9	25	1161	95	60	45	52	117	28	157
Future Volume (vph)	435	1318	9	25	1161	95	60	45	52	117	28	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.989				0.850			0.850
Flt Protected	0.950			0.950				0.972			0.961	
Satd. Flow (prot)	1807	3604	0	1825	3484	0	0	1793	1633	0	1734	1617
Flt Permitted	0.108			0.178				0.645			0.671	
Satd. Flow (perm)	205	3604	0	342	3484	0	0	1190	1633	0	1211	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			11				85			224
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Adj. Flow (vph)	483	1464	10	28	1290	106	67	50	58	167	40	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	483	1474	0	28	1396	0	0	117	58	0	207	224
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	24.0	61.0		37.0	37.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	26.7%	67.8%		41.1%	41.1%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	19.0	56.0		32.0	32.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.2	57.2		33.1	33.1		19.5	19.5	19.5	19.5	19.5	19.5
Actuated g/C Ratio	0.68	0.68		0.39	0.39		0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.93	0.61		0.21	1.02		0.43	0.13	0.74	0.41	0.41	0.41
Control Delay	50.4	9.6		24.2	57.4		32.5	3.5	46.9	6.2	6.2	6.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	9.6		24.2	57.4		32.5	3.5	46.9	6.2	6.2	6.2
LOS	D	A		C	E		C	A		D	A	A
Approach Delay		19.7			56.7			22.9			25.7	
Approach LOS		B			E			C			C	

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 2 Sensitivity

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	60.9	62.4		3.0	~130.1			16.2	0.0		31.2	0.0
Queue Length 95th (m)	#129.9	95.0		10.4	#185.2			31.2	4.9		39.3	5.4
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	517	2433		133	1368			352	543		358	636
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.93	0.61		0.21	1.02			0.33	0.11		0.58	0.35
Intersection Summary												
Area Type:	Other											
Cycle Length:	90											
Actuated Cycle Length:	84.7											
Natural Cycle:	90											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	1.02											
Intersection Signal Delay:	33.7											
Intersection Capacity Utilization:	83.8%											
Analysis Period (min):	15											
~	Volume exceeds capacity, queue is theoretically infinite.											
	Queue shown is maximum after two cycles.											
#	95th percentile volume exceeds capacity, queue may be longer.											
	Queue shown is maximum after two cycles.											

Splits and Phases: 3050: Riverside & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	↗
Traffic Volume (vph)	24	1566	24	8	990	23	176	4	11	31	0	17
Future Volume (vph)	24	1566	24	8	990	23	176	4	11	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997			0.992				0.850
Flt Protected	0.950			0.950				0.956			0.950	
Satd. Flow (prot)	1789	3571	0	1789	3568	0	0	1786	0	0	1789	1601
Flt Permitted	0.204			0.134				0.714			0.737	
Satd. Flow (perm)	384	3571	0	252	3568	0	0	1334	0	0	1388	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	26	1702	26	9	1100	26	196	4	12	39	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1728	0	9	1126	0	0	212	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	30.7	30.7		30.7	30.7			13.6			13.5	13.5
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.28			0.28	0.28
v/c Ratio	0.11	0.77		0.06	0.50			0.56			0.10	0.04
Control Delay	8.5	14.2		8.0	8.4			20.5			12.9	3.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.5	14.2		8.0	8.4			20.5			12.9	3.4
LOS	A	B		A	A			C			B	A
Approach Delay		14.1			8.4			20.5			9.6	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	0.9	57.8		0.3	28.2			15.0			2.5	0.0

Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	5.1	#135.8		2.5	57.8			30.2			6.5	1.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0		45.0								35.0
Base Capacity (vph)	242	2257		159	2256			694			719	847
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.11	0.77		0.06	0.50			0.31			0.05	0.02

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 48.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 68.0%

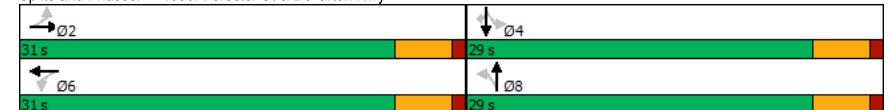
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↩	↗	↗	↗	↩	↗
Traffic Volume (vph)	490	1120	531	117	275	490
Future Volume (vph)	490	1120	531	117	275	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3482	0	1789	1601
Flt Permitted	0.193				0.950	
Satd. Flow (perm)	364	3579	3482	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			29			533
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	533	1217	577	127	299	533
Shared Lane Traffic (%)						
Lane Group Flow (vph)	533	1217	704	0	299	533
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0		7.0	7.0
Minimum Split (s)	9.0	30.0	30.0		24.0	24.0
Total Split (s)	33.0	63.0	30.0		27.0	27.0
Total Split (%)	36.7%	70.0%	33.3%		30.0%	30.0%
Maximum Green (s)	28.0	58.0	25.0		22.0	22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Min	None		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	55.2	55.2	25.3		18.2	18.2
Actuated g/C Ratio	0.66	0.66	0.30		0.22	0.22
v/c Ratio	0.80	0.51	0.65		0.77	0.70
Control Delay	25.1	8.6	29.1		45.2	8.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	25.1	8.6	29.1		45.2	8.2
LOS	C	A	C		D	A
Approach Delay		13.6	29.1		21.5	
Approach LOS		B	C		C	
Queue Length 50th (m)	55.5	51.4	54.3		47.0	0.0

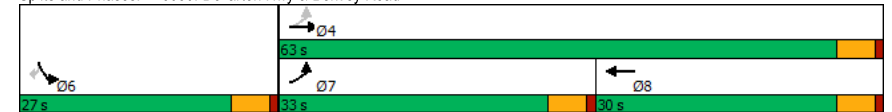
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#106.8	68.2	74.6		74.3	26.0
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0					
Base Capacity (vph)	724	2517	1075		477	818
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.74	0.48	0.65		0.63	0.65

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

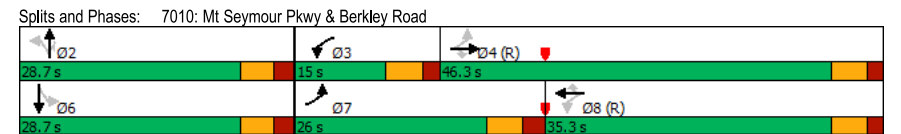
	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	412	1294	201	131	850	56	99	9	300	31	65	138
Future Volume (vph)	412	1294	201	131	850	56	99	9	300	31	65	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.108			0.130			0.715			0.749		
Satd. Flow (perm)	203	3579	1601	245	3579	1601	1347	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208			175			246			242
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			116.5			145.4	
Travel Time (s)		6.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Adj. Flow (vph)	416	1391	372	208	977	66	119	13	435	39	65	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1391	372	208	977	66	119	13	435	39	65	160
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	26.0	46.3	46.3	15.0	35.3	35.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	28.9%	51.4%	51.4%	16.7%	39.2%	39.2%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	19.9	40.7	40.7	9.4	29.7	29.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0		10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	
Act Effct Green (s)	55.2	41.0	41.0	39.9	30.8	30.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.46	0.46	0.44	0.34	0.34	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.91	0.85	0.44	0.78	0.80	0.10	0.35	0.03	0.73	0.11	0.14	0.10
Control Delay	48.9	28.5	8.9	42.0	33.2	0.3	30.8	25.4	21.5	26.7	26.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	28.5	8.9	42.0	33.2	0.3	30.8	25.4	21.5	26.7	26.8	0.1
LOS	D	C	A	D	C	A	C	C	C	C	C	A
Approach Delay		29.0			32.9			23.5			10.6	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	53.7	109.5	16.7	18.8	81.1	0.0	16.8	1.7	29.2	5.2	8.7	0.0

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#104.6	139.5	9.9	21.8	100.0	0.0	29.0	4.7	32.2	11.4	18.6	0.0
Internal Link Dist (m)		75.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	475	1629	841	270	1225	662	344	481	592	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.85	0.44	0.77	0.80	0.10	0.35	0.03	0.73	0.11	0.14	0.10

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖↖	↖↖	↖	↖	
Traffic Volume (vph)	163	1232	558	39	92	90
Future Volume (vph)	163	1232	558	39	92	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850	0.933	
Flt Protected	0.950				0.975	
Satd. Flow (prot)	1789	3579	3579	1601	1713	0
Flt Permitted	0.318				0.975	
Satd. Flow (perm)	599	3579	3579	1601	1713	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				42	54	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	437.4		116.7	
Travel Time (s)		37.0	32.8		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1339	607	42	100	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	1339	607	42	198	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	16.0	60.0	44.0	44.0	30.0	
Total Split (%)	17.8%	66.7%	48.9%	48.9%	33.3%	
Maximum Green (s)	11.0	55.0	39.0	39.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	Min	None	
Walk Time (s)		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)		0	0	0	0	
Act Effct Green (s)	39.1	39.1	25.1	25.1	10.5	
Actuated g/C Ratio	0.65	0.65	0.42	0.42	0.18	
v/c Ratio	0.31	0.57	0.40	0.06	0.57	
Control Delay	6.0	7.3	13.9	5.1	23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.0	7.3	13.9	5.1	23.3	
LOS	A	A	B	A	C	
Approach Delay		7.2	13.4		23.3	
Approach LOS		A	B		C	
Queue Length 50th (m)	5.9	33.8	23.1	0.0	14.4	

7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	15.2	63.6	41.8	5.2	31.8	
Internal Link Dist (m)		469.5	413.4		92.7	
Turn Bay Length (m)		50.0		50.0		
Base Capacity (vph)	612	3295	2349	1065	752	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.41	0.26	0.04	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 59.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.2

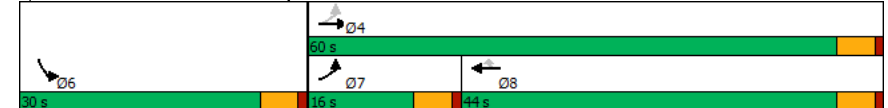
Intersection LOS: B

Intersection Capacity Utilization 53.0%

ICU Level of Service A
















Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Collector A












HCM Unsignalized Intersection Capacity Analysis
2030: Semour River Pl & Old Dollarton

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	137	25	0	196	84	0	0	47	82	0	158
Future Volume (Veh/h)	145	137	25	0	196	84	0	0	47	82	0	158
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	151	50	0	225	125	0	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	350			201			1118	888	176	912	850	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	350			201			1118	888	176	912	850	288
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			100	100	90	38	100	61
cM capacity (veh/h)	1214			1383			100	242	872	203	252	752
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	382	350	87	419								
Volume Left	181	0	0	126								
Volume Right	50	125	87	293								
cSH	1214	1383	872	414								
Volume to Capacity	0.15	0.00	0.10	1.01								
Queue Length 95th (m)	4.0	0.0	2.5	97.5								
Control Delay (s)	4.8	0.0	9.6	79.1								
Lane LOS	A		A	F								
Approach Delay (s)	4.8	0.0	9.6	79.1								
Approach LOS			A	F								
Intersection Summary												
Average Delay	28.9											
Intersection Capacity Utilization	63.1%			ICU Level of Service			B					
Analysis Period (min)	15											

















HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 2 Sensitivity

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	59	253	155	171	157
Future Volume (Veh/h)	81	59	253	155	171	157
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	281	172	190	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	99			337		
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	921	367			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	860	248			343	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	63	91			83	
cM capacity (veh/h)	244	715			1100	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	453	364			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	339	1700	1100			
Volume to Capacity	0.46	0.27	0.17			
Queue Length 95th (m)	17.7	0.0	4.7			
Control Delay (s)	24.4	0.0	5.5			
Lane LOS	C		A			
Approach Delay (s)	24.4	0.0	5.5			
Approach LOS	C					
Intersection Summary						
Average Delay	6.0					
Intersection Capacity Utilization	58.6%			ICU Level of Service		B
Analysis Period (min)	15					












HCM Unsignalized Intersection Capacity Analysis 3020: Riverside & Windridge Dr

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	27	0	21	0	748	55	25	642	0
Future Volume (Veh/h)	0	0	0	27	0	21	0	748	55	25	642	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	0	0	0	45	0	35	0	935	69	26	676	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	264						113					
pX, platoon unblocked	0.79	0.79	0.94	0.79	0.79	0.76	0.94				0.76	
vC, conflicting volume	1732	1732	676	1698	1698	970	676				1004	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1630	1630	626	1586	1586	803	626				849	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	33	100	88	100				96	
cM capacity (veh/h)	55	77	456	67	82	292	901				601	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	80	1004	702								
Volume Left	0	45	0	26								
Volume Right	0	35	69	0								
cSH	1700	101	1700	601								
Volume to Capacity	0.13	0.79	0.59	0.04								
Queue Length 95th (m)	0.0	32.9	0.0	1.0								
Control Delay (s)	0.0	116.4	0.0	1.2								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	116.4	0.0	1.2								
Approach LOS	A	F										
Intersection Summary												
Average Delay	5.7											
Intersection Capacity Utilization	Err%			ICU Level of Service			H					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 3040: Riverside & Front St

Option 2 Sensitivity

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	137	81	73	486	149	167
Future Volume (Veh/h)	137	81	73	486	149	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	540	166	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	691	176	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	691	176	352			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	89	93			
cM capacity (veh/h)	353	837	1203			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	261	360	111	241	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	186	
cSH	450	1203	1700	1700	1700	
Volume to Capacity	0.54	0.07	0.21	0.07	0.14	
Queue Length 95th (m)	23.7	1.6	0.0	0.0	0.0	
Control Delay (s)	21.9	3.0	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	21.9	1.2		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	5.0					
Intersection Capacity Utilization	47.6%			ICU Level of Service		A
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 2 Sensitivity

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	
Traffic Volume (veh/h)	48	22	18	22	55	6
Future Volume (Veh/h)	48	22	18	22	55	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	53	24	20	24	61	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			77		129	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			77		129	65
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	99
cM capacity (veh/h)			1522		854	999
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	77	44	68			
Volume Left	0	20	61			
Volume Right	24	0	7			
cSH	1700	1522	867			
Volume to Capacity	0.05	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	3.4	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.4	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			18.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 2 Sensitivity

	↗	→	↘	↙	←	↖	↗	↑	↘	↙	↓	↗
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕				↗
Traffic Volume (veh/h)	12	1878	9	24	1057	7	1	0	20	8	0	14
Future Volume (Veh/h)	12	1878	9	24	1057	7	1	0	20	8	0	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70
Hourly flow rate (vph)	13	1998	10	27	1174	8	2	0	40	11	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					284							
pX, platoon unblocked	0.76						0.76	0.76		0.76	0.76	0.76
vC, conflicting volume	1182			2008			2690	3265	1004	2297	3266	591
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	603			2008			2591	3349	1004	2073	3351	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			90			76	100	83	39	100	98
cM capacity (veh/h)	736			281			8	5	240	18	5	822
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	13	1332	676	27	783	399	42	31				
Volume Left	13	0	0	27	0	0	2	11				
Volume Right	0	0	10	0	0	8	40	20				
cSH	736	1700	1700	281	1700	1700	104	49				
Volume to Capacity	0.02	0.78	0.40	0.10	0.46	0.23	0.41	0.64				
Queue Length 95th (m)	0.4	0.0	0.0	2.4	0.0	0.0	12.8	18.8				
Control Delay (s)	10.0	0.0	0.0	19.2	0.0	0.0	61.7	164.3				
Lane LOS	A			C			F	F				
Approach Delay (s)	0.1			0.4			61.7	164.3				
Approach LOS							F	F				
Intersection Summary												
Average Delay				2.5								
Intersection Capacity Utilization			63.5%		ICU Level of Service			B				
Analysis Period (min)			15									

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: AM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Volume (vph)	385	2	10	583	0	11
Future Volume (vph)	385	2	10	583	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.850
Flt Protected			0.950			
Satd. Flow (prot)	3575	0	1789	3579	1883	1601
Flt Permitted			0.506			
Satd. Flow (perm)	3575	0	953	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					370
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	2	11	634	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	11	634	0	12
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.12		0.01	0.19		0.02
Control Delay	0.9		1.3	1.0		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	0.9		1.3	1.0		0.1
LOS	A		A	A		A
Approach Delay	0.9			1.0	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

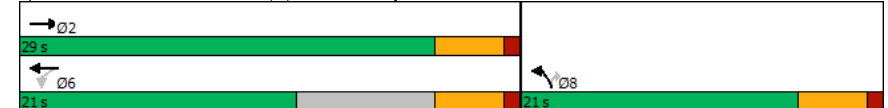
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: AM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	8.3		1.1	12.7		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3371		898	3374		825
Starvation Cap Reductn	0		0	478		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.12		0.01	0.22		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.19	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 23.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak













	↖	→	↘	↙	←	↖	↘	↙	↗	↘	↙	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	204	1049	114	98	1581	10	94	27	60	18	62	722
Future Volume (vph)	204	1049	114	98	1581	10	94	27	60	18	62	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.962			0.989	
Satd. Flow (prot)	1601	3341	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.080			0.183				0.728			0.929	
Satd. Flow (perm)	135	3341	0	348	3507	0	0	1281	1408	0	1785	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			1				69			233
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Adj. Flow (vph)	224	1153	125	102	1647	10	99	28	63	23	78	903
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	1278	0	102	1657	0	0	127	63	0	101	903
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	17.0	67.0		50.0	50.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	15.5%	60.9%		45.5%	45.5%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	12.0	62.0		45.0	45.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	63.0	63.0		46.1	46.1		39.0	39.0	39.0	39.0	39.0	39.0
Actuated g/C Ratio	0.57	0.57		0.42	0.42		0.35	0.35	0.35	0.35	0.35	0.35
v/c Ratio	0.90	0.67		0.70	1.13		0.28	0.12	0.16	1.26		
Control Delay	64.6	18.1		54.7	97.5		27.6	5.7	25.2	152.1		
Queue Delay	13.4	49.8		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	78.0	68.0		54.7	97.5		27.6	5.7	25.2	152.1		
LOS	E	E		D	F		C	A		C	F	
Approach Delay		69.5			95.1			20.3			139.3	
Approach LOS		E			F			C			F	

Lanes, Volumes, Timings

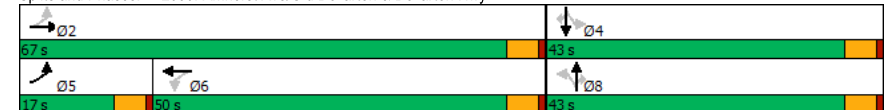
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	33.5	92.8		17.7	~218.3			19.4	0.0		14.7	~210.2
Queue Length 95th (m)	#77.6	115.7		#46.7	#261.3			34.5	7.9		23.6	#231.2
Internal Link Dist (m)		45.3			44.7			199.8			74.2	
Turn Bay Length (m)	20.0			75.0					15.0			30.0
Base Capacity (vph)	250	1920		145	1471			454	543		632	718
Starvation Cap Reductn	21	937		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.98	1.30		0.70	1.13			0.28	0.12		0.16	1.26
Intersection Summary												
Area Type:		Other										
Cycle Length: 110												
Actuated Cycle Length: 110												
Natural Cycle: 140												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.26												
Intersection Signal Delay: 93.2						Intersection LOS: F						
Intersection Capacity Utilization 105.4%						ICU Level of Service G						
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



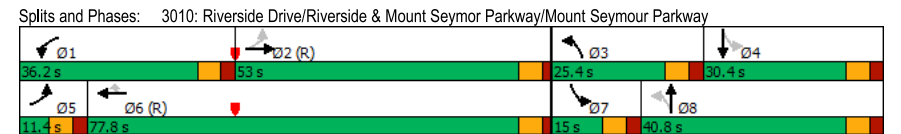
Lanes, Volumes, Timings
3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: AM Peak

	←	→	↖	↗	↖	↗	↖	↗	↖	↗	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	36	833	270	665	1572	36	246	60	397	96	93	115
Future Volume (vph)	36	833	270	665	1572	36	246	60	397	96	93	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963				0.850			0.850		0.917	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1727	0
Flt Permitted	0.078			0.950			0.166			0.708		
Satd. Flow (perm)	147	3446	0	3471	3579	1601	313	1883	1601	1333	1727	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33				170			474		38	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			193.1			71.4			172.4	
Travel Time (s)		39.4			14.5			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	40	926	300	739	1747	40	308	75	496	120	116	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	739	1747	40	308	75	496	120	260	0
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	53.0		36.2	77.8	77.8	25.4	40.8		15.0	30.4	
Total Split (%)	7.9%	36.6%		25.0%	53.7%	53.7%	17.5%	28.1%		10.3%	21.0%	
Maximum Green (s)	5.0	47.5		29.8	72.3	72.3	19.0	34.4		8.6	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	57.9	50.3		33.1	78.2	76.7	49.6	34.6	145.0	35.1	24.2	
Actuated g/C Ratio	0.40	0.35		0.23	0.54	0.53	0.34	0.24	1.00	0.24	0.17	
v/c Ratio	0.28	1.01		0.93	0.91	0.04	0.95	0.17	0.31	0.34	0.82	
Control Delay	22.5	73.1		74.1	39.2	0.1	78.0	43.9	0.5	36.6	69.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.5	73.1		74.1	39.2	0.1	78.0	43.9	0.5	36.6	69.4	
LOS	C	E		E	D	A	E	D	A	D	E	
Approach Delay		71.5			48.8			31.4			59.0	
Approach LOS		E			D			C			E	
Queue Length 50th (m)	4.7	~195.0		109.1	247.4	0.0	68.5	16.9	0.0	23.7	61.6	

Lanes, Volumes, Timings
3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: AM Peak

	←	→	↖	↗	↖	↗	↖	↗	↖	↗	↖	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	9.9	#238.2		#147.5	#304.1	0.0	#97.6	26.9	0.0	34.1	79.6	
Internal Link Dist (m)		500.9			169.1			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0				25.0		
Base Capacity (vph)	143	1217		792	1929	926	324	477	1601	357	345	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.28	1.01		0.93	0.91	0.04	0.95	0.16	0.31	0.34	0.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 52.2	Intersection LOS: D
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	254	10	46	45	22	82	25	357	24	51	632	418
Future Volume (vph)	254	10	46	45	22	82	25	357	24	51	632	418
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.925			0.990				0.850
Flt Protected		0.954			0.985		0.950				0.996	
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1865	0	0	1876	1601
Flt Permitted		0.600			0.788		0.144				0.945	
Satd. Flow (perm)	0	1130	1601	0	1373	0	271	1865	0	0	1780	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			8				211
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	363	14	66	64	31	117	28	397	27	56	695	459
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	377	66	0	212	0	28	424	0	0	751	459
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	55.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		22.0			22.0		27.8	27.8		27.8	27.8	
Actuated g/C Ratio		0.38			0.38		0.48	0.48		0.48	0.48	
v/c Ratio		0.88			0.36		0.22	0.47		0.88	0.52	
Control Delay		42.3			8.3		14.2	12.2		28.2	7.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		42.3			8.3		14.2	12.2		28.2	7.9	
LOS		D			A		B	B		C	A	
Approach Delay		36.6			8.3			12.3		20.5		
Approach LOS		D			A			B		C		
Queue Length 50th (m)		37.1			6.7		1.7	28.4		68.7	15.5	

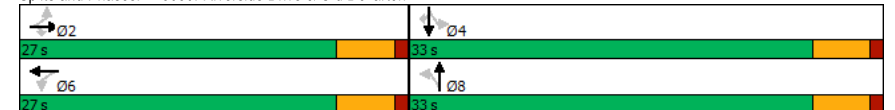
Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#47.4	3.6		12.0			6.7	48.0			#132.5	35.8
Internal Link Dist (m)	176.9			263.8			113.8				240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)	451	679		618			136	943			896	911
Starvation Cap Reductn	0	0		0			0	0			0	0
Spillback Cap Reductn	0	0		0			0	0			0	0
Storage Cap Reductn	0	0		0			0	0			0	0
Reduced v/c Ratio	0.84	0.10		0.34			0.21	0.45			0.84	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 57.9	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 20.9	Intersection LOS: C
Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	231	797	16	48	1216	110	81	47	34	179	68	349
Future Volume (vph)	231	797	16	48	1216	110	81	47	34	179	68	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.988				0.850			0.850
Flt Protected	0.950			0.950				0.969			0.965	
Satd. Flow (prot)	1706	3387	0	1825	3405	0	0	1696	1396	0	1625	1570
Flt Permitted	0.091			0.318				0.496			0.622	
Satd. Flow (perm)	163	3387	0	611	3405	0	0	868	1396	0	1048	1570
Right Turn on Red			Yes			Yes			Yes		Yes	
Satd. Flow (RTOR)		4			13				85			309
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Adj. Flow (vph)	254	876	18	53	1351	122	101	59	43	199	76	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	254	894	0	53	1473	0	0	160	43	0	275	388
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	19.0	61.0		42.0	42.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	21.1%	67.8%		46.7%	46.7%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	14.0	56.0		37.0	37.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.0	57.0		40.0	40.0		24.8	24.8	24.8	24.8	24.8	24.8
Actuated g/C Ratio	0.63	0.63		0.45	0.45		0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.78	0.42		0.19	0.97		0.67	0.10	0.95	0.59	0.59	0.59
Control Delay	35.9	8.8		18.7	42.3		44.5	1.6	76.1	10.6	10.6	10.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.9	8.8		18.7	42.3		44.5	1.6	76.1	10.6	10.6	10.6
LOS	D	A		B	D		D	A	E	B	B	B
Approach Delay		14.8			41.5			35.4		37.8		
Approach LOS		B			D			D		D		

Lanes, Volumes, Timings

3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	26.6	36.2		5.6	~132.6			24.4	0.0		46.5	10.4
Queue Length 95th (m)	#57.6	47.6		13.9	#184.3			39.9	0.5		#93.5	36.6
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	361	2150		272	1524			241	450		292	660
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.70	0.42		0.19	0.97			0.66	0.10		0.94	0.59

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 89.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 31.8

Intersection LOS: C

Intersection Capacity Utilization 80.1%

ICU Level of Service D

Analysis Period (min) 15

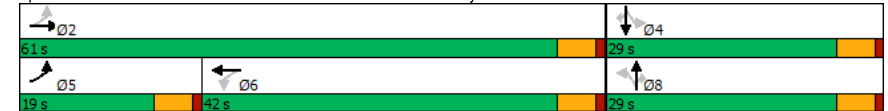
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖			↖			↖	↖
Traffic Volume (vph)	26	814	109	20	1323	15	81	1	11	28	1	33
Future Volume (vph)	26	814	109	20	1323	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.998			0.984				0.850
Frt Protected	0.950			0.950				0.958			0.954	
Satd. Flow (prot)	1789	3514	0	1789	3571	0	0	1775	0	0	1797	1601
Frt Permitted	0.155			0.271				0.719			0.771	
Satd. Flow (perm)	292	3514	0	510	3571	0	0	1333	0	0	1452	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			2			12				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Adj. Flow (vph)	28	875	117	21	1378	16	87	1	12	47	2	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	992	0	21	1394	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	31.7	31.7		31.7	31.7			9.6			9.6	9.6
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.23			0.23	0.23
v/c Ratio	0.13	0.37		0.05	0.52			0.32			0.15	0.14
Control Delay	6.4	4.4		4.8	5.6			15.7			14.8	8.8
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	6.4	4.4		4.8	5.6			15.7			14.8	8.8
LOS	A	A		A	A			B			B	A
Approach Delay		4.4			5.6			15.7			11.6	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	0.7	16.1		0.5	27.9			5.6			3.0	1.2

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	4.2	31.8		2.8	54.0			15.0			5.8	3.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0			45.0							35.0
Base Capacity (vph)	215	2604		376	2638			817			885	990
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.13	0.38		0.06	0.53			0.12			0.06	0.06

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 42.1

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 5.8

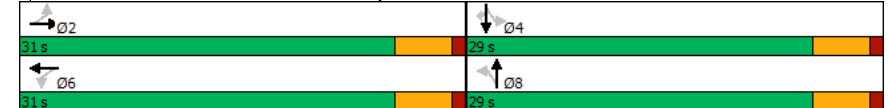
Intersection LOS: A

Intersection Capacity Utilization 58.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↩	↗	↗	↗	↗	↗
Traffic Volume (vph)	329	523	1113	194	105	245
Future Volume (vph)	329	523	1113	194	105	245
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.120				0.950	
Satd. Flow (perm)	226	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				178		272
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	366	581	1237	216	117	272
Shared Lane Traffic (%)						
Lane Group Flow (vph)	366	581	1237	216	117	272
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	17.0	51.0	34.0	34.0	29.0	29.0
Total Split (%)	21.3%	63.8%	42.5%	42.5%	36.3%	36.3%
Maximum Green (s)	12.0	46.0	29.0	29.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	45.3	45.3	28.2	28.2	9.9	9.9
Actuated g/C Ratio	0.69	0.69	0.43	0.43	0.15	0.15
v/c Ratio	0.82	0.23	0.80	0.27	0.43	0.58
Control Delay	31.5	4.2	21.5	4.5	30.5	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.5	4.2	21.5	4.5	30.5	9.0
LOS	C	A	C	A	C	A
Approach Delay		14.7	19.0		15.5	
Approach LOS		B	B		B	
Queue Length 50th (m)	25.8	10.4	64.1	2.5	13.2	0.0

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#75.5	20.2	#100.4	14.3	26.5	17.1
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	445	2533	1597	812	660	762
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.23	0.77	0.27	0.18	0.36

Intersection Summary

Area Type: Other

Cycle Length: 80

Actuated Cycle Length: 65.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 17.0

Intersection LOS: B

Intersection Capacity Utilization 67.3%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	179	1152	39	7	1875	52	24	9	22	77	13	435
Future Volume (vph)	179	1152	39	7	1875	52	24	9	22	77	13	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.060			0.223			0.748			0.750		
Satd. Flow (perm)	113	3579	1601	420	3579	1601	1409	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			96			95			335
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.6			116.0			119.3			142.6	
Travel Time (s)		6.0			7.0			8.9			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	195	1252	42	8	2038	57	30	11	28	86	14	483
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1252	42	8	2038	57	30	11	28	86	14	483
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2				6
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	11.4	71.3	71.3	59.9	59.9	59.9	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	11.4%	71.3%	71.3%	59.9%	59.9%	59.9%	28.7%	28.7%	28.7%	28.7%	28.7%	
Maximum Green (s)	5.3	65.7	65.7	54.3	54.3	54.3	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	81.3	82.1	82.1	62.9	62.9	62.9	13.2	13.2	13.2	13.2	13.2	100.0
Actuated g/C Ratio	0.81	0.82	0.82	0.63	0.63	0.63	0.13	0.13	0.13	0.13	0.13	1.00
v/c Ratio	0.59	0.43	0.03	0.03	0.91	0.05	0.16	0.04	0.10	0.46	0.06	0.30
Control Delay	26.7	4.0	1.2	10.3	25.8	0.8	38.8	35.9	0.6	47.3	36.2	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.7	4.0	1.2	10.3	25.8	0.8	38.8	35.9	0.6	47.3	36.2	0.5
LOS	C	A	A	B	C	A	D	D	A	D	D	A
Approach Delay		6.9			25.1			22.8			8.2	
Approach LOS		A			C			C			A	
Queue Length 50th (m)	19.3	32.3	0.1	0.6	183.5	0.0	5.2	1.9	0.0	15.7	2.4	0.0

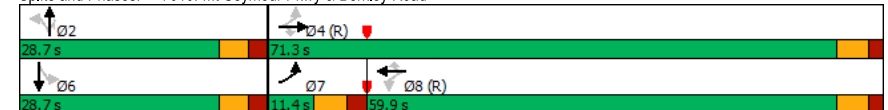
Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	43.6	53.7	2.5	2.8	#263.7	1.9	11.3	5.7	0.0	28.9	7.6	0.0
Internal Link Dist (m)		75.6			92.0			95.3			118.6	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	333	2939	1322	263	2250	1042	348	465	466	349	465	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.43	0.03	0.03	0.91	0.05	0.09	0.02	0.06	0.25	0.03	0.30

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 16.4	Intersection LOS: B
Intersection Capacity Utilization 82.7%	ICU Level of Service E
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↗
Traffic Volume (vph)	110	519	1227	65	35	82
Future Volume (vph)	110	519	1227	65	35	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.116				0.950	
Satd. Flow (perm)	218	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				71		89
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	181.9		116.7	
Travel Time (s)		37.0	13.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	564	1334	71	38	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	564	1334	71	38	89
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	10.0	46.0	36.0	36.0	24.0	24.0
Total Split (%)	14.3%	65.7%	51.4%	51.4%	34.3%	34.3%
Maximum Green (s)	5.0	41.0	31.0	31.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	37.3	37.3	29.6	29.6	19.2	19.2
Actuated g/C Ratio	0.56	0.56	0.44	0.44	0.29	0.29
v/c Ratio	0.50	0.28	0.84	0.09	0.07	0.17
Control Delay	14.0	7.8	23.0	3.7	19.5	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	7.8	23.0	3.7	19.5	6.1
LOS	B	A	C	A	B	A
Approach Delay		8.9	22.0		10.1	
Approach LOS		A	C		B	
Queue Length 50th (m)	6.2	17.1	78.0	0.0	3.7	0.0

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	13.0	24.6	#105.4	6.0	10.1	9.2
Internal Link Dist (m)		469.5	157.9		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	241	2227	1683	790	515	525
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.25	0.79	0.09	0.07	0.17

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.84

Intersection Signal Delay: 17.3

Intersection LOS: B

Intersection Capacity Utilization 58.3%

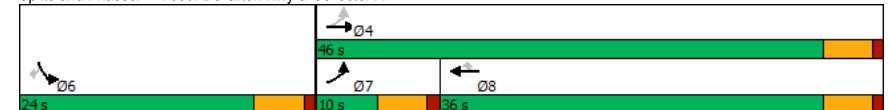
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
















Queue shown is maximum after two cycles.

Splits and Phases: 7050: Dollarton Hwy & Collector A












HCM Unsignalized Intersection Capacity Analysis 2030: Semour River Pl & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	127	5	0	432	88	0	0	44	94	0	181
Future Volume (Veh/h)	97	127	5	0	432	88	0	0	44	94	0	181
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	121	159	6	0	465	95	0	0	55	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	560				165				1142	964	162	972
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560				165				1142	964	162	972
tC, single (s)	4.2				4.4				7.1	6.5	6.2	7.1
tC, 2 stage (s)												
tF (s)	2.3				2.5				3.5	4.0	3.3	3.5
p0 queue free %	88				100				100	100	94	40
cM capacity (veh/h)	987				1245				97	226	888	197
										240		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	286	560	55	344								
Volume Left	121	0	0	118								
Volume Right	6	95	55	226								
cSH	987	1245	888	343								
Volume to Capacity	0.12	0.00	0.06	1.00								
Queue Length 95th (m)	3.2	0.0	1.5	86.7								
Control Delay (s)	4.6	0.0	9.3	84.8								
Lane LOS	A		A	F								
Approach Delay (s)	4.6	0.0	9.3	84.8								
Approach LOS			A	F								
Intersection Summary												
Average Delay				24.9								
Intersection Capacity Utilization				73.4%	ICU Level of Service			D				
Analysis Period (min)				15								

















HCM Unsignalized Intersection Capacity Analysis 2040: Old Dollarton & Front St

Option 1 Sensitivity
Timing Plan: AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	178	31	175	71	52	551
Future Volume (Veh/h)	178	31	175	71	52	551
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	34	194	79	58	612
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				98	338	
pX, platoon unblocked	0.94	0.94			0.94	
vC, conflicting volume	962	234			273	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	928	155			197	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	26	96			96	
cM capacity (veh/h)	267	839			1295	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	273	670			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	297	1700	1295			
Volume to Capacity	0.78	0.16	0.04			
Queue Length 95th (m)	46.4	0.0	1.1			
Control Delay (s)	49.6	0.0	1.2			
Lane LOS	E		A			
Approach Delay (s)	49.6	0.0	1.2			
Approach LOS	E					
Intersection Summary						
Average Delay			10.5			
Intersection Capacity Utilization			67.2%	ICU Level of Service	C	
Analysis Period (min)			15			










HCM Unsignalized Intersection Capacity Analysis 3020: Riverside Drive & Windridge Dr

Option 1 Sensitivity
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	0	29	0	667	18	12	1020	0
Future Volume (Veh/h)	0	0	0	73	0	29	0	667	18	12	1020	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	0	0	0	81	0	32	0	741	20	13	1133	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	264						113					
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	1942	1920	1133	1910	1910	751	1133			761		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1971	1947	1133	1936	1936	703	1133			713		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	0	100	92	100			98		
cM capacity (veh/h)	40	60	247	46	61	411	617			833		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	113	761	1146								
Volume Left	0	81	0	13								
Volume Right	0	32	20	0								
cSH	1700	61	1700	833								
Volume to Capacity	0.00	1.84	0.45	0.02								
Queue Length 95th (m)	0.0	79.7	0.0	0.4								
Control Delay (s)	0.0	543.2	0.0	0.5								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	543.2	0.0	0.5								
Approach LOS	A	F										
Intersection Summary												
Average Delay	30.7											
Intersection Capacity Utilization	75.7%			ICU Level of Service			D					
Analysis Period (min)	15											










HCM Unsignalized Intersection Capacity Analysis 3040: Riverside Drive & Front St

Option 1 Sensitivity
Timing Plan: AM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	49	38	38	342	534	157
Future Volume (Veh/h)	49	38	38	342	534	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	41	41	372	580	171
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	934	376	751			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	934	376	751			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	93	95			
cM capacity (veh/h)	252	622	854			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	94	165	248	387	364	
Volume Left	53	41	0	0	0	
Volume Right	41	0	0	0	171	
cSH	340	854	1700	1700	1700	
Volume to Capacity	0.28	0.05	0.15	0.23	0.21	
Queue Length 95th (m)	8.4	1.1	0.0	0.0	0.0	
Control Delay (s)	19.6	2.7	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	19.6	1.1		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	1.8					
Intersection Capacity Utilization	45.4%			ICU Level of Service		A
Analysis Period (min)	15					



















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 1 Sensitivity
Timing Plan: AM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	17	25	27	16	21	13
Future Volume (Veh/h)	17	25	27	16	21	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	28	30	18	23	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			47	111		33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47	111		33
tC, single (s)			4.1	6.4		6.2
tC, 2 stage (s)						
tF (s)			2.2	3.5		3.3
p0 queue free %			98	97		99
cM capacity (veh/h)			1560	869		1041
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	47	48	37			
Volume Left	0	30	23			
Volume Right	28	0	14			
cSH	1700	1560	927			
Volume to Capacity	0.03	0.02	0.04			
Queue Length 95th (m)	0.0	0.4	0.9			
Control Delay (s)	0.0	4.6	9.0			
Lane LOS	A		A			
Approach Delay (s)	0.0	4.6	9.0			
Approach LOS			A			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			19.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 1 Sensitivity
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1327	7	49	2278	7	1	0	33	12	0	6
Future Volume (Veh/h)	1	1327	7	49	2278	7	1	0	33	12	0	6
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50
Hourly flow rate (vph)	1	1474	8	54	2531	8	1	0	41	24	0	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	284											
pX, platoon unblocked	0.42						0.42	0.42	0.42		0.42	0.42
vC, conflicting volume	2539	1482					2866	4127	741	3423	4127	1270
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1905	1482					2680	5678	741	4005	5678	0
tC, single (s)	4.1	4.1					7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2	2.2					3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99	88					74	100	89	0	100	97
cM capacity (veh/h)	130	450					4	0	359	0	0	456
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	1	983	499	54	1687	852	42	36				
Volume Left	1	0	0	54	0	0	1	24				
Volume Right	0	0	8	0	0	8	41	12				
cSH	130	1700	1700	450	1700	1700	113	0				
Volume to Capacity	0.01	0.58	0.29	0.12	0.99	0.50	0.37	76.72				
Queue Length 95th (m)	0.2	0.0	0.0	3.1	0.0	0.0	11.5	Err				
Control Delay (s)	33.0	0.0	0.0	14.1	0.0	0.0	54.4	Err				
Lane LOS	D	B					F	F				
Approach Delay (s)	0.0	0.3					54.4	Err				
Approach LOS							F	F				
Intersection Summary												
Average Delay				87.4								
Intersection Capacity Utilization	77.5%			ICU Level of Service				D				
Analysis Period (min)	15											

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Volume (vph)	700	2	10	515	0	9
Future Volume (vph)	700	2	10	515	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected			0.950			
Satd. Flow (prot)	3579	0	1789	3579	1883	1601
Flt Permitted			0.362			
Satd. Flow (perm)	3579	0	682	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					147
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	2	11	560	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	763	0	11	560	0	10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.23		0.02	0.17		0.03
Control Delay	1.0		1.4	1.0		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	1.0		1.4	1.0		0.1
LOS	A		A	A		A
Approach Delay	1.0			1.0	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

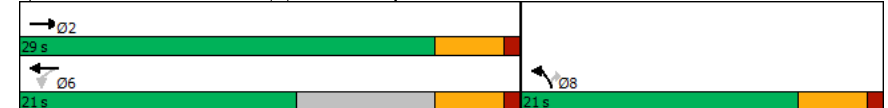
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	15.8		1.2	11.2		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3374		643	3374		684
Starvation Cap Reductn	0		0	494		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.23		0.02	0.19		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.23	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 31.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

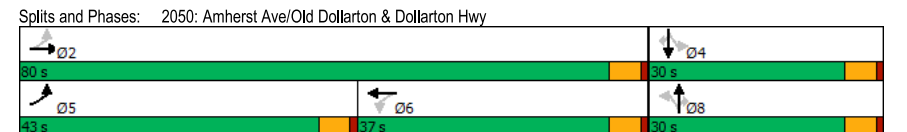
Option 1 Sensitivity
Timing Plan: PM Peak
























	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩	↩
Traffic Volume (vph)	467	1663	46	37	1152	15	138	19	57	13	19	291
Future Volume (vph)	467	1663	46	37	1152	15	138	19	57	13	19	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0	0.0	75.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	30.0	0.0
Storage Lanes	1	0	1	0	0	0	1	0	0	0	1	0
Taper Length (m)	15.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996	0.996	0.996	0.998	0.998	0.998	0.850	0.850	0.850	0.850	0.850	0.850
Frt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.958	0.958	0.958	0.980	0.980	0.980
Satd. Flow (prot)	1789	3554	0	1690	3557	0	0	1778	1526	0	1883	1570
Frt Permitted	0.083	0.083	0.083	0.128	0.128	0.128	0.727	0.727	0.727	0.867	0.867	0.867
Satd. Flow (perm)	156	3554	0	228	3557	0	0	1349	1526	0	1666	1570
Right Turn on Red	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Satd. Flow (RTOR)	6	6	6	1	1	1	69	69	69	69	69	69
Link Speed (k/h)	48	48	48	48	48	48	48	48	48	48	48	48
Link Distance (m)	69.3	69.3	69.3	68.7	68.7	68.7	223.8	223.8	223.8	98.7	98.7	98.7
Travel Time (s)	5.2	5.2	5.2	5.2	5.2	5.2	16.8	16.8	16.8	7.4	7.4	7.4
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Adj. Flow (vph)	492	1751	48	44	1355	18	173	24	71	14	21	323
Shared Lane Traffic (%)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	492	1799	0	44	1373	0	0	197	71	0	35	323
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm	Perm	Perm	NA	Perm
Protected Phases	5	2	6	6	6	8	8	8	8	4	4	4
Permitted Phases	2	2	6	6	6	8	8	8	8	4	4	4
Detector Phase	5	2	6	6	6	8	8	8	8	4	4	4
Switch Phase	5.0	10.0	10.0	10.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Initial (s)	10.0	28.0	28.0	28.0	28.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Minimum Split (s)	43.0	80.0	37.0	37.0	37.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	39.1%	72.7%	33.6%	33.6%	33.6%	27.3%	27.3%	27.3%	27.3%	27.3%	27.3%	27.3%
Total Split (%)	38.0	75.0	32.0	32.0	32.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Maximum Green (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
All-Red Time (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Lost Time Adjust (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Lost Time (s)	Lead/Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	None	None	None	None	None	None	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	16.0	16.0	16.0	16.0	16.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Act Effct Green (s)	76.2	76.2	44.2	44.2	44.2	20.5	20.5	20.5	20.5	20.5	20.5	20.5
Actuated g/C Ratio	0.73	0.73	0.42	0.42	0.42	0.20	0.20	0.20	0.20	0.20	0.20	0.20
v/c Ratio	0.90	0.70	0.46	0.91	0.91	0.75	0.20	0.20	0.11	0.57	0.57	0.57
Control Delay	46.7	10.4	48.8	41.7	41.7	57.3	10.1	10.1	34.4	8.2	8.2	8.2
Queue Delay	33.0	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	79.7	58.4	48.8	41.7	41.7	57.3	10.1	10.1	34.4	8.2	8.2	8.2
LOS	E	E	D	D	D	E	B	B	C	A	A	A
Approach Delay	63.0	63.0	42.0	42.0	42.0	44.8	44.8	44.8	10.8	10.8	10.8	10.8
Approach LOS	E	E	D	D	D	D	D	D	B	B	B	B

Lanes, Volumes, Timings
2050: Amherst Ave/Old Dollarton & Dollarton Hwy

Option 1 Sensitivity
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	79.9	94.4	6.5	139.1	38.0	0.3	5.9	0.0	0.0	0.0	0.0	0.0
Queue Length 95th (m)	115.1	138.3	#25.0	#220.8	53.8	8.7	14.2	21.9	21.9	14.2	14.2	21.9
Internal Link Dist (m)	45.3	45.3	44.7	44.7	199.8	74.7	74.7	74.7	74.7	74.7	74.7	74.7
Turn Bay Length (m)	20.0	20.0	75.0	75.0	15.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Base Capacity (vph)	723	2587	96	1502	335	431	414	633	633	414	414	633
Starvation Cap Reductn	251	1020	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.04	1.15	0.46	0.91	0.59	0.16	0.08	0.51	0.51	0.08	0.08	0.51
Intersection Summary												
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	104.7											
Natural Cycle:	90											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	0.91											
Intersection Signal Delay:	50.7											
Intersection Capacity Utilization:	83.5%											
Analysis Period (min):	15											
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												



Lanes, Volumes, Timings												Option 1 Sensitivity	
3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway													
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Traffic Volume (vph)	99	1342	322	412	783	49	203	109	729	35	67	71	
Future Volume (vph)	99	1342	322	412	783	49	203	109	729	35	67	71	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	0.0		10.0	
Storage Lanes	1		0	2		1	1		1	1		0	
Taper Length (m)	15.0			15.0			15.0			15.0			
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.971				0.850			0.850		0.923		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1738	0	
Flt Permitted	0.307			0.049			0.305			0.653			
Satd. Flow (perm)	578	3475	0	179	3579	1601	574	1883	1601	1230	1738	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		31				122			290		32		
Link Speed (k/h)		48			48			48			48		
Link Distance (m)		524.9			193.1			71.4			172.4		
Travel Time (s)		39.4			14.5			5.4			12.9		
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80	
Adj. Flow (vph)	121	1637	393	458	870	54	254	136	911	44	84	89	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	121	2030	0	458	870	54	254	136	911	44	173	0	
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA		
Protected Phases	5	2		1	6		3	8		7	4		
Permitted Phases	2			6		6	8		Free	4			
Detector Phase	5	2		1	6	6	3	8		7	4		
Switch Phase													
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0		
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4		
Total Split (s)	12.4	81.5		18.2	87.3	87.3	14.8	34.9		10.4	30.5		
Total Split (%)	8.6%	56.2%		12.6%	60.2%	60.2%	10.2%	24.1%		7.2%	21.0%		
Maximum Green (s)	6.0	76.0		11.8	81.8	81.8	8.4	28.5		4.0	24.1		
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9		
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5		
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4		
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes		
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0		
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None		
Walk Time (s)		7.0			7.0	7.0		7.0			7.0		
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0		
Pedestrian Calls (#/hr)		0			0	0		0			0		
Act Effct Green (s)	87.8	78.1		102.6	89.0	87.5	34.4	26.1	145.0	26.0	19.6		
Actuated g/C Ratio	0.61	0.54		0.71	0.61	0.60	0.24	0.18	1.00	0.18	0.14		
v/c Ratio	0.28	1.08		0.77	0.40	0.05	1.12	0.40	0.57	0.18	0.66		
Control Delay	9.9	76.9		49.3	15.6	0.1	142.8	56.1	1.5	43.2	59.8		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	9.9	76.9		49.3	15.6	0.1	142.8	56.1	1.5	43.2	59.8		
LOS	A	E		D	B	A	F	E	A	D	E		
Approach Delay		73.1			26.2			34.8			56.4		
Approach LOS		E			C			C			E		
Queue Length 50th (m)	10.0	~341.3		49.3	64.9	0.0	~74.6	35.6	0.0	10.0	39.0		

Lanes, Volumes, Timings												Option 1 Sensitivity										
3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway: PM Peak																						
	↖		→		↗		↖		←		↗		↖		↑		↗		↓		↖	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR										
Queue Length 95th (m)	17.5	#321.3		#92.0	86.0	0.0	#95.6	47.2	0.0	16.8	52.2											
Internal Link Dist (m)		500.9			169.1			47.4			148.4											
Turn Bay Length (m)	70.0			130.0		35.0			25.0													
Base Capacity (vph)	430	1886		591	2196	1014	226	401	1601	245	343											
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0											
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0											
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0											
Reduced v/c Ratio	0.28	1.08		0.77	0.40	0.05	1.12	0.34	0.57	0.18	0.50											
Intersection Summary																						
Area Type: Other																						
Cycle Length: 145																						
Actuated Cycle Length: 145																						
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green																						
Natural Cycle: 135																						
Control Type: Actuated-Coordinated																						
Maximum v/c Ratio: 1.12																						
Intersection Signal Delay: 49.7												Intersection LOS: D										
Intersection Capacity Utilization 91.6%												ICU Level of Service F										
Analysis Period (min) 15																						
~ Volume exceeds capacity, queue is theoretically infinite.																						
Queue shown is maximum after two cycles.																						
# 95th percentile volume exceeds capacity, queue may be longer.																						
Queue shown is maximum after two cycles.																						
Splits and Phases: 3010: Riverside Drive/Riverside & Mount Seymour Parkway/Mount Seymour Parkway																						

Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	30	36	28	18	80	43	736	70	77	365	340
Future Volume (vph)	268	30	36	28	18	80	43	736	70	77	365	340
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.914			0.987				0.850
Flt Protected		0.957			0.989		0.950				0.991	
Satd. Flow (prot)	0	1802	1601	0	1703	0	1789	1859	0	0	1866	1601
Flt Permitted		0.660			0.845		0.391				0.473	
Satd. Flow (perm)	0	1243	1601	0	1455	0	736	1859	0	0	891	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			12				284
Link Speed (k/h)		48			48			48				48
Link Distance (m)		200.9			287.8			137.8				264.2
Travel Time (s)		15.1			21.6			10.3				19.8
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	335	38	45	33	21	94	46	783	74	86	406	378
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	373	45	0	148	0	46	857	0	0	492	378
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0		40.0	40.0		40.0	40.0	40.0
Total Split (%)	38.5%	38.5%	38.5%	38.5%	38.5%		61.5%	61.5%		61.5%	61.5%	61.5%
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0		35.0	35.0		35.0	35.0	35.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		21.0			21.0		36.0	36.0		36.0		36.0
Actuated g/C Ratio		0.32			0.32		0.55	0.55		0.55		0.55
v/c Ratio		0.93			0.28		0.11	0.83		1.00		0.37
Control Delay		55.5			6.0		8.7	7.8		21.0		59.0
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		55.5			6.0		8.7	7.8		21.0		59.0
LOS		E			A		A	C		E		A
Approach Delay		50.2			8.7			20.3				34.8
Approach LOS		D			A			C				C
Queue Length 50th (m)		42.8			0.0		4.5	2.4		75.9		53.5

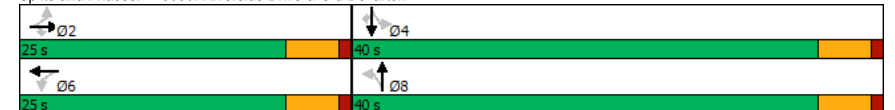
Lanes, Volumes, Timings
3030: Riverside Drive & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#73.8	4.8			14.2		6.7	#148.4			#113.8	15.8
Internal Link Dist (m)	176.9				263.8			113.8			240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)	401	547			533		407	1034			493	1013
Starvation Cap Reductn	0	0			0		0	0			0	0
Spillback Cap Reductn	0	0			0		0	0			0	0
Storage Cap Reductn	0	0			0		0	0			0	0
Reduced v/c Ratio	0.93	0.08			0.28		0.11	0.83			1.00	0.37

Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 65	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings
3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity













Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	557	1130	9	25	921	181	60	45	52	155	28	200
Future Volume (vph)	557	1130	9	25	921	181	60	45	52	155	28	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0	0.0	45.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0
Storage Lanes	1	0	1	0	0	0	1	0	0	0	0	0
Taper Length (m)	15.0	0.0	15.0	0.0	0.0	0.0	15.0	0.0	0.0	15.0	0.0	0.0
Lane Util. Factor	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999			0.975				0.850			0.850	
Flt Protected	0.950			0.950				0.972			0.959	
Satd. Flow (prot)	1807	3602	0	1825	3412	0	0	1793	1633	0	1725	1617
Flt Permitted	0.121			0.220				0.590			0.664	
Satd. Flow (perm)	230	3602	0	423	3412	0	0	1088	1633	0	1195	1617
Right Turn on Red		Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)	2			27				85			286	
Link Speed (k/h)	48			48				48			48	
Link Distance (m)	213.9			242.5				117.5			105.2	
Travel Time (s)	16.0			18.2				8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Adj. Flow (vph)	619	1256	10	28	1023	201	67	50	58	221	40	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	619	1266	0	28	1224	0	0	117	58	0	261	286
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2		6				8			4	
Permitted Phases	2			6				8			4	
Detector Phase	5	2		6	6			8	8		4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	28.0	61.0		33.0	33.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	31.1%	67.8%		36.7%	36.7%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	23.0	56.0		28.0	28.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.1	57.1		29.1	29.1		22.6	22.6	22.6	22.6	22.6	22.6
Actuated g/C Ratio	0.65	0.65		0.33	0.33		0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	1.06	0.54		0.20	1.07		0.42	0.12	0.85	0.46	0.46	0.46
Control Delay	80.9	9.7		26.7	75.9		32.0	3.4	56.8	5.9	5.9	5.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.9	9.7		26.7	75.9		32.0	3.4	56.8	5.9	5.9	5.9
LOS	F	A		C	E		C	A	E	A	A	A
Approach Delay	33.0			74.8			22.5		30.2			
Approach LOS	C			E			C		C			

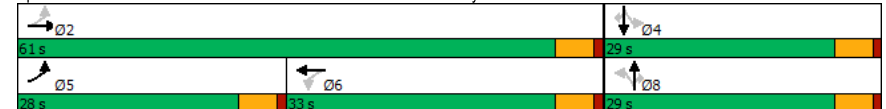
Lanes, Volumes, Timings
3050: Riverside/Riverside Drive & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	~106.5	58.5		3.5	~125.8			16.4	0.0		41.6	0.0
Queue Length 95th (m)	#170.0	74.5		10.6	#165.9			31.8	4.9		49.9	4.7
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0				25.0				
Base Capacity (vph)	582	2347		140	1148			310	527		341	666
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	1.06	0.54		0.20	1.07			0.38	0.11		0.77	0.43
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 87.7												
Natural Cycle: 100												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.07												
Intersection Signal Delay: 45.7												
Intersection LOS: D												
Intersection Capacity Utilization 88.8%												
ICU Level of Service E												
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 3050: Riverside/Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖↗			↖↗	↖
Traffic Volume (vph)	24	1416	24	8	836	23	176	4	11	31	0	17
Future Volume (vph)	24	1416	24	8	836	23	176	4	11	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.996			0.992				0.850
Flt Protected	0.950			0.950				0.956			0.950	
Satd. Flow (prot)	1789	3571	0	1789	3564	0	0	1786	0	0	1789	1601
Flt Permitted	0.262			0.135				0.714			0.736	
Satd. Flow (perm)	493	3571	0	254	3564	0	0	1334	0	0	1386	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			6			6				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	26	1539	26	9	929	26	196	4	12	39	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1565	0	9	955	0	0	212	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	30.6	30.6		30.6	30.6			13.6		13.5	13.5	
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.28		0.28	0.28	
v/c Ratio	0.08	0.69		0.06	0.42			0.56		0.10	0.04	
Control Delay	7.8	12.0		8.0	7.7			20.4		12.9	3.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Delay	7.8	12.0		8.0	7.7			20.4		12.9	3.4	
LOS	A	B		A	A			C		B	A	
Approach Delay		12.0			7.7			20.4		9.6		
Approach LOS		B			A			C		A		
Queue Length 50th (m)	0.9	48.0		0.3	22.3			15.0		2.5	0.0	

Lanes, Volumes, Timings

4050: Forester St & Dollarton Hwy

Option 1 Sensitivity

Timing Plan: PM Peak

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	4.9	#115.5		2.5	46.3			30.2			6.5	1.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0		45.0								35.0
Base Capacity (vph)	311	2257		160	2253			697			722	851
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.08	0.69		0.06	0.42			0.30			0.05	0.02

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 48.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 11.1

Intersection LOS: B

Intersection Capacity Utilization 63.9%

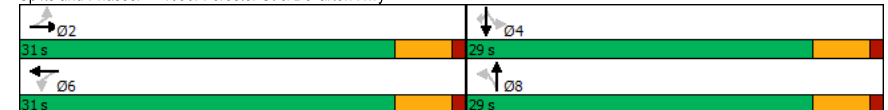
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.







Queue shown is maximum after two cycles.

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	335	1124	518	117	223	349
Future Volume (vph)	335	1124	518	117	223	349
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.441				0.950	
Satd. Flow (perm)	831	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				127		323
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	364	1222	563	127	242	379
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	1222	563	127	242	379
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	25.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	30.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	53.0	53.0	53.0	53.0	27.0	27.0
Total Split (%)	66.3%	66.3%	66.3%	66.3%	33.8%	33.8%
Maximum Green (s)	48.0	48.0	48.0	48.0	22.0	22.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	None	None	None
Walk Time (s)	7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	36.8	36.8	36.8	36.8	14.4	14.4
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.23	0.23
v/c Ratio	0.74	0.57	0.26	0.13	0.58	0.61
Control Delay	21.1	9.3	6.7	1.8	28.9	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	9.3	6.7	1.8	28.9	9.8
LOS	C	A	A	A	C	A
Approach Delay		12.0	5.8		17.3	
Approach LOS		B	A		B	
Queue Length 50th (m)	26.2	39.4	14.1	0.0	24.7	5.1

Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#86.3	70.3	27.0	5.8	51.7	28.9
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	663	2857	2857	1303	676	806
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.43	0.20	0.10	0.36	0.47

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 61.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 11.6	Intersection LOS: B
Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	412	1620	90	7	1014	56	51	9	17	33	5	197
Future Volume (vph)	412	1620	90	7	1014	56	51	9	17	33	5	197
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.106			0.126			0.754			0.749		
Satd. Flow (perm)	200	3579	1601	237	3579	1601	1420	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			107			105			229
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			116.5			145.4	
Travel Time (s)		6.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Adj. Flow (vph)	416	1742	167	11	1166	66	61	13	25	41	5	229
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1742	167	11	1166	66	61	13	25	41	5	229
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4			8			2				6
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	8	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	25.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	30.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	24.0	61.3	61.3	37.3	37.3	37.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	26.7%	68.1%	68.1%	41.4%	41.4%	41.4%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	17.9	55.7	55.7	31.7	31.7	31.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0	0	0	0	0	0	0	0	0	
Act Effct Green (s)	55.2	55.7	55.7	31.8	31.8	31.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.62	0.62	0.35	0.35	0.35	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.95	0.79	0.16	0.13	0.92	0.10	0.17	0.03	0.05	0.11	0.01	0.14
Control Delay	58.1	16.1	3.3	24.9	41.3	1.8	27.6	25.4	0.2	26.8	25.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.1	16.1	3.3	24.9	41.3	1.8	27.6	25.4	0.2	26.8	25.2	0.2
LOS	E	B	A	C	D	A	C	C	A	C	C	A
Approach Delay		22.7			39.1			20.4			4.6	
Approach LOS		C			D			C			A	
Queue Length 50th (m)	55.2	106.9	3.7	1.3	100.4	0.0	8.2	1.7	0.0	5.4	0.7	0.0

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 1 Sensitivity
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#110.9	136.1	3.5	3.7	#132.4	2.4	16.6	4.7	0.0	11.8	3.3	0.0
Internal Link Dist (m)		75.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	438	2215	1031	83	1264	635	362	481	487	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.79	0.16	0.13	0.92	0.10	0.17	0.03	0.05	0.11	0.01	0.14

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 90

Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.95

Intersection Signal Delay: 26.5

Intersection LOS: C

Intersection Capacity Utilization 89.2%

ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 7010: Mt Seymour Pkwy & Berkley Road



Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Option 1 Sensitivity

Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Volume (vph)	112	1235	518	39	74	116
Future Volume (vph)	112	1235	518	39	74	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850	0.917	
Flt Protected	0.950				0.981	
Satd. Flow (prot)	1789	3579	3579	1601	1694	0
Flt Permitted	0.361				0.981	
Satd. Flow (perm)	680	3579	3579	1601	1694	0
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)				42	118	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	181.9		116.7	
Travel Time (s)		37.0	13.6		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	122	1342	563	42	80	126
Shared Lane Traffic (%)						
Lane Group Flow (vph)	122	1342	563	42	206	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	10.0	43.0	33.0	33.0	27.0	
Total Split (%)	14.3%	61.4%	47.1%	47.1%	38.6%	
Maximum Green (s)	5.0	38.0	28.0	28.0	22.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	Min	None	
Walk Time (s)		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)		0	0	0	0	
Act Effct Green (s)	33.0	33.0	25.3	25.3	9.1	
Actuated g/C Ratio	0.63	0.63	0.48	0.48	0.17	
v/c Ratio	0.23	0.59	0.32	0.05	0.52	
Control Delay	5.3	7.3	10.0	3.9	14.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.3	7.3	10.0	3.9	14.9	
LOS	A	A	B	A	B	
Approach Delay		7.1	9.6		14.9	
Approach LOS		A	A		B	
Queue Length 50th (m)	3.4	29.3	16.5	0.0	7.7	

Lanes, Volumes, Timings

7050: Dollarton Hwy & Collector A

Option 1 Sensitivity

Timing Plan: PM Peak

	↗	→	←	↖	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	10.2	58.8	30.7	4.3	22.4	
Internal Link Dist (m)		469.5	157.9		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	536	2637	1944	888	790	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.51	0.29	0.05	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 52.2

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.59

Intersection Signal Delay: 8.5

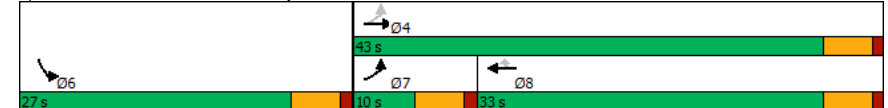
Intersection LOS: A

Intersection Capacity Utilization 53.7%

ICU Level of Service A

















Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Collector A











HCM Unsignalized Intersection Capacity Analysis 2030: Semour River Pl & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	203	25	0	248	84	0	0	47	82	0	158
Future Volume (Veh/h)	145	203	25	0	248	84	0	0	47	82	0	158
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	223	50	0	285	125	0	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked				0.99			0.99			0.99		
vC, conflicting volume	410				273	1250			1020	248	1044	982
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	410				264	1249			1017	239	1041	979
tC, single (s)	4.1				4.1	7.1			6.5	6.2	7.1	6.5
tC, 2 stage (s)												
tF (s)	2.2				2.2	3.5			4.0	3.3	3.5	4.0
p0 queue free %	84				100	100			100	89	22	100
cM capacity (veh/h)	1154				1302	76			201	799	162	209
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	454	410	87	419								
Volume Left	181	0	0	126								
Volume Right	50	125	87	293								
cSH	1154	1302	799	349								
Volume to Capacity	0.16	0.00	0.11	1.20								
Queue Length 95th (m)	4.2	0.0	2.8	134.0								
Control Delay (s)	4.4	0.0	10.1	147.3								
Lane LOS	A		B	F								
Approach Delay (s)	4.4	0.0	10.1	147.3								
Approach LOS			B	F								
Intersection Summary												
Average Delay	47.2											
Intersection Capacity Utilization	69.3%			ICU Level of Service			C					
Analysis Period (min)	15											

















HCM Unsignalized Intersection Capacity Analysis 2040: Old Dollarton & Front St

Option 1 Sensitivity
Timing Plan: PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	59	319	155	171	209
Future Volume (Veh/h)	81	59	319	155	171	209
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	354	172	190	232
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage (veh)						
Upstream signal (m)			99		337	
pX, platoon unblocked	0.90	0.90			0.90	
vC, conflicting volume	1052	440			526	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1000	316			412	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	90			81	
cM capacity (veh/h)	197	648			1027	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	526	422			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	279	1700	1027			
Volume to Capacity	0.56	0.31	0.19			
Queue Length 95th (m)	24.0	0.0	5.1			
Control Delay (s)	33.1	0.0	5.3			
Lane LOS	D		A			
Approach Delay (s)	33.1	0.0	5.3			
Approach LOS	D					
Intersection Summary						
Average Delay			6.7			
Intersection Capacity Utilization	64.8%		ICU Level of Service		C	
Analysis Period (min)	15					












HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive & Windridge Dr

Option 1 Sensitivity
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	27	0	21	0	1023	56	25	775	0
Future Volume (Veh/h)	0	0	0	27	0	21	0	1023	56	25	775	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	0	0	0	45	0	35	0	1279	70	26	816	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	264						113					
pX, platoon unblocked	0.61	0.61	0.92	0.61	0.61	0.57	0.92				0.57	
vC, conflicting volume	2217	2217	816	2182	2182	1314	816				1349	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2377	2377	756	2319	2319	1173	756				1235	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	0	100	74	100				92	
cM capacity (veh/h)	10	19	375	15	21	133	786				321	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	80	1349	842								
Volume Left	0	45	0	26								
Volume Right	0	35	70	0								
cSH	1700	25	1700	321								
Volume to Capacity	0.00	3.25	0.79	0.08								
Queue Length 95th (m)	0.0	Err	0.0	2.0								
Control Delay (s)	0.0	Err	0.0	3.1								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	Err	0.0	3.1								
Approach LOS	A	F										
Intersection Summary												
Average Delay			353.4									
Intersection Capacity Utilization			Err%	ICU Level of Service				H				
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive /Riverside Drive & Front St

Option 1 Sensitivity
Timing Plan: PM Peak

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Traffic Volume (veh/h)	137	81	73	694	230	167
Future Volume (Veh/h)	137	81	73	694	230	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	771	256	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	896	221	442			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	896	221	442			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	41	89	93			
cM capacity (veh/h)	259	783	1114			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	338	514	171	271	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	186	
cSH	345	1114	1700	1700	1700	
Volume to Capacity	0.70	0.07	0.30	0.10	0.16	
Queue Length 95th (m)	38.4	1.8	0.0	0.0	0.0	
Control Delay (s)	36.6	2.6	0.0	0.0	0.0	
Lane LOS	E	A				
Approach Delay (s)	36.6	1.0		0.0		
Approach LOS	E					
Intersection Summary						
Average Delay			6.3			
Intersection Capacity Utilization			55.6%	ICU Level of Service		B
Analysis Period (min)			15			






















HCM Unsignalized Intersection Capacity Analysis 4030: Forester St & Old Dollarton

Option 1 Sensitivity
Timing Plan: PM Peak

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	44	20	18	18	42	6
Future Volume (Veh/h)	44	20	18	18	42	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	49	22	20	20	47	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			71		120	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			71		120	60
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	99
cM capacity (veh/h)			1529		864	1005
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	71	40	54			
Volume Left	0	20	47			
Volume Right	22	0	7			
cSH	1700	1529	880			
Volume to Capacity	0.04	0.01	0.06			
Queue Length 95th (m)	0.0	0.3	1.5			
Control Delay (s)	0.0	3.7	9.4			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.7	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization			18.6%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis 6010: Browning PI & Mt Seymour Pkwy

Option 1 Sensitivity
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (veh/h)	12	2092	9	24	1232	7	1	0	22	8	0	14
Future Volume (Veh/h)	12	2092	9	24	1232	7	1	0	22	8	0	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70
Hourly flow rate (vph)	13	2226	10	27	1369	8	2	0	44	11	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					284							
pX, platoon unblocked	0.69						0.69	0.69		0.69	0.69	0.69
vC, conflicting volume	1377			2236			3016	3688	1118	2610	3689	688
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	651			2236			3022	3996	1118	2435	3997	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			88			42	100	78	0	100	97
cM capacity (veh/h)	644			228			3	2	201	8	2	749
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	13	1484	752	27	913	464	46	31				
Volume Left	13	0	0	27	0	0	2	11				
Volume Right	0	0	10	0	0	8	44	20				
cSH	644	1700	1700	228	1700	1700	57	22				
Volume to Capacity	0.02	0.87	0.44	0.12	0.54	0.27	0.80	1.42				
Queue Length 95th (m)	0.5	0.0	0.0	3.0	0.0	0.0	26.7	30.6				
Control Delay (s)	10.7	0.0	0.0	22.9	0.0	0.0	180.7	601.5				
Lane LOS	B			C			F	F				
Approach Delay (s)	0.1			0.4			180.7	601.5				
Approach LOS							F	F				
Intersection Summary												
Average Delay	7.4											
Intersection Capacity Utilization	69.6%			ICU Level of Service					C			
Analysis Period (min)	15											

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑		↖	↑↑	↖	↖
Traffic Volume (vph)	385	2	10	751	0	11
Future Volume (vph)	385	2	10	751	0	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt	0.999					0.850
Flt Protected			0.950			
Satd. Flow (prot)	3575	0	1789	3579	1883	1601
Flt Permitted			0.506			
Satd. Flow (perm)	3575	0	953	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					370
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	418	2	11	816	0	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	420	0	11	816	0	12
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.12		0.01	0.24		0.02
Control Delay	0.9		1.3	1.1		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	0.9		1.3	1.1		0.1
LOS	A		A	A		A
Approach Delay	0.9			1.1	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

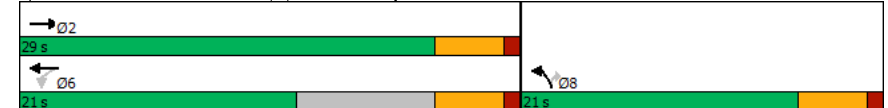
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	8.3		1.1	17.1		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3371		898	3374		825
Starvation Cap Reductn	0		0	439		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.12		0.01	0.28		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.24	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 24.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity













2050: Amherst Ave/Old Dollarton & Dollarton Hwy

	↗	→	↘	↙	←	↖	↗	→	↘	↙	←	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↖	↗	↖	↗	↖
Traffic Volume (vph)	179	1074	114	98	1960	10	94	27	60	18	62	346
Future Volume (vph)	179	1074	114	98	1960	10	94	27	60	18	62	346
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.986			0.999				0.850			0.850
Flt Protected	0.950			0.950				0.962			0.989	
Satd. Flow (prot)	1601	3344	0	1807	3507	0	0	1692	1408	0	1900	1601
Flt Permitted	0.075			0.211				0.696			0.913	
Satd. Flow (perm)	126	3344	0	401	3507	0	0	1224	1408	0	1754	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17							69			433
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.2	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.95	0.95	0.95	0.80	0.80	0.80
Heavy Vehicles (%)	14%	8%	4%	1%	4%	0%	9%	10%	16%	0%	0%	2%
Adj. Flow (vph)	197	1180	125	102	2042	10	99	28	63	23	78	433
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	1305	0	102	2052	0	0	127	63	0	101	433
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	37.0	67.0		30.0	30.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	33.6%	60.9%		27.3%	27.3%		39.1%	39.1%	39.1%	39.1%	39.1%	39.1%
Maximum Green (s)	32.0	62.0		25.0	25.0		38.0	38.0	38.0	38.0	38.0	38.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	63.2	63.2		49.1	49.1		14.7	14.7	14.7	14.7	14.7	14.7
Actuated g/C Ratio	0.74	0.74		0.57	0.57		0.17	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.75	0.53		0.45	1.02		0.61	0.21	0.34	0.69		
Control Delay	35.0	6.3		21.6	47.2		45.4	8.8	34.0	9.4		
Queue Delay	0.0	13.6		0.0	0.0		0.0	0.0	0.0	0.0		
Total Delay	35.0	19.9		21.6	47.2		45.4	8.8	34.0	9.4		
LOS	C	B		C	D		D	A	C	A		
Approach Delay		21.9			45.9		33.3			14.0		
Approach LOS		C			D		C			B		

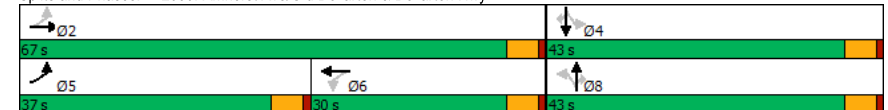
Lanes, Volumes, Timings

Option 2 Sensitivity

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	17.1	38.7		8.6	~164.8			19.5	0.0		14.7	0.0
Queue Length 95th (m)	41.0	69.6		30.9	#281.6			36.6	8.9		24.7	12.3
Internal Link Dist (m)		45.3			44.7			199.8			74.2	
Turn Bay Length (m)	20.0			75.0					15.0			30.0
Base Capacity (vph)	660	2463		229	2006			557	678		798	964
Starvation Cap Reductn	20	1159		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.31	1.00		0.45	1.02			0.23	0.09		0.13	0.45
Intersection Summary												
Area Type:	Other											
Cycle Length: 110												
Actuated Cycle Length: 85.9												
Natural Cycle: 110												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.02												
Intersection Signal Delay: 33.3 Intersection LOS: C												
Intersection Capacity Utilization 92.5% ICU Level of Service F												
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↖	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖		↖	↖	↖	↖	↑	↖	↖	↖	
Traffic Volume (vph)	36	833	270	370	1442	45	232	52	312	116	73	115
Future Volume (vph)	36	833	270	370	1442	45	232	52	312	116	73	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.963				0.850			0.850		0.908	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3446	0	3471	3579	1601	1789	1883	1601	1789	1710	0
Flt Permitted	0.063			0.950			0.213			0.715		
Satd. Flow (perm)	119	3446	0	3471	3579	1601	401	1883	1601	1347	1710	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37				170			356		48	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	40	926	300	411	1602	50	290	65	390	145	91	144
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1226	0	411	1602	50	290	65	390	145	235	0
Turn Type	pm+pt	NA		Prot	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2					6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	11.4	64.6		25.0	78.2	78.2	25.0	41.7		13.7	30.4	
Total Split (%)	7.9%	44.6%		17.2%	53.9%	53.9%	17.2%	28.8%		9.4%	21.0%	
Maximum Green (s)	5.0	59.1		18.6	72.7	72.7	18.6	35.3		7.3	24.0	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	71.8	64.0		21.4	80.0	78.5	43.6	30.4	145.0	35.3	22.5	
Actuated g/C Ratio	0.50	0.44		0.15	0.55	0.54	0.30	0.21	1.00	0.24	0.16	
v/c Ratio	0.27	0.80		0.80	0.81	0.05	0.90	0.16	0.24	0.39	0.77	
Control Delay	18.9	39.3		72.2	32.1	0.1	72.1	44.4	0.4	40.0	62.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.9	39.3		72.2	32.1	0.1	72.1	44.4	0.4	40.0	62.9	
LOS	B	D		E	C	A	E	D	A	D	E	
Approach Delay		38.6			39.3			32.1			54.2	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	4.4	160.4		58.6	204.9	0.0	65.9	14.8	0.0	30.0	52.0	

Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↖	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	9.8	190.4		#82.1	243.1	0.0	#79.1	23.8	0.0	40.5	68.3	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0	50.0		
Base Capacity (vph)	148	1541		521	1973	944	321	489	1601	376	350	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.27	0.80		0.79	0.81	0.05	0.90	0.13	0.24	0.39	0.67	
Intersection Summary												
Area Type:	Other											
Cycle Length:	145											
Actuated Cycle Length:	145											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green											
Natural Cycle:	105											
Control Type:	Actuated-Coordinated											
Maximum v/c Ratio:	0.90											
Intersection Signal Delay:	39.2											
Intersection Capacity Utilization	81.1%											
ICU Level of Service	D											
Analysis Period (min)	15											
#	95th percentile volume exceeds capacity, queue may be longer.											
	Queue shown is maximum after two cycles.											

Splits and Phases: 3010: Riverside & Mount Seymour Parkway/Mount Seymour Parkway



Lanes, Volumes, Timings

Option 2 Sensitivity

3030: Riverside Drive & Old Dollarton

	↗	→	↘	↙	←	↖	↗	→	↘	↙	←	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	229	10	46	45	22	82	25	274	24	51	514	220
Future Volume (vph)	229	10	46	45	22	82	25	274	24	51	514	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	30.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	1		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.925			0.988			0.850
Flt Protected		0.954			0.985		0.950				0.996	
Satd. Flow (prot)	0	1797	1601	0	1716	0	1789	1861	0	0	1876	1601
Flt Permitted		0.617			0.827		0.217				0.943	
Satd. Flow (perm)	0	1162	1601	0	1441	0	409	1861	0	0	1776	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		117			9				119
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.90	0.90	0.90	0.91	0.91	0.91
Adj. Flow (vph)	327	14	66	64	31	117	28	304	27	56	565	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	66	0	212	0	28	331	0	0	621	242
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%	51.7%	51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		21.3			21.3		23.1	23.1		23.1		23.1
Actuated g/C Ratio		0.40			0.40		0.44	0.44		0.44		0.44
v/c Ratio		0.73			0.33		0.16	0.40		0.80		0.31
Control Delay		23.7			6.7		13.5	12.7		24.3		7.2
Queue Delay		0.0			0.0		0.0	0.0		0.0		0.0
Total Delay		23.7			6.7		13.5	12.7		24.3		7.2
LOS		C			A		B	B		C		A
Approach Delay		20.4			6.7			12.8		19.5		
Approach LOS		C			A			B		B		
Queue Length 50th (m)		27.5			5.8		1.6	20.6		50.4		7.1

Lanes, Volumes, Timings

Option 2 Sensitivity

3030: Riverside Drive & Old Dollarton

	↗	→	↘	↙	←	↖	↗	→	↘	↙	←	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		35.3	3.1		10.4		6.7	41.8			#112.4	20.6
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0				30.0					15.0
Base Capacity (vph)		615	879		818		200	917			871	846
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.55	0.08		0.26		0.14	0.36			0.71	0.29

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 52.6

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 16.9

Intersection LOS: B

Intersection Capacity Utilization 75.6%

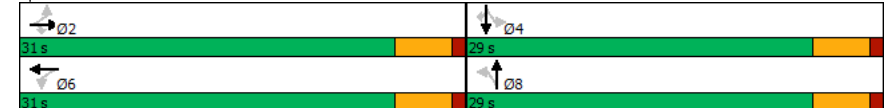
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside Drive & Old Dollarton



Lanes, Volumes, Timings

Option 2 Sensitivity

3050: Riverside Drive & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	185	868	16	48	1644	74	81	47	34	114	68	300
Future Volume (vph)	185	868	16	48	1644	74	81	47	34	114	68	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.994			0.937			0.878	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1706	3388	0	1825	3440	0	1630	1627	0	1573	1608	0
Flt Permitted	0.059			0.295			0.172			0.640		
Satd. Flow (perm)	106	3388	0	567	3440	0	295	1627	0	1060	1608	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			28			161	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.91	0.91	0.91	0.90	0.90	0.90	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	7%	7%	29%	0%	5%	16%	12%	6%	17%	16%	9%	4%
Adj. Flow (vph)	203	954	18	53	1827	82	101	59	43	127	76	333
Shared Lane Traffic (%)												
Lane Group Flow (vph)	203	972	0	53	1909	0	101	102	0	127	409	0
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2			6		3	8		7	4	
Permitted Phases	2						8			4		
Detector Phase	5	2		6	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		4.0	7.0		4.0	7.0	
Minimum Split (s)	10.0	25.0		25.0	25.0		8.0	29.0		8.0	29.0	
Total Split (s)	15.0	83.0		68.0	68.0		8.0	29.0		8.0	29.0	
Total Split (%)	12.5%	69.2%		56.7%	56.7%		6.7%	24.2%		6.7%	24.2%	
Maximum Green (s)	10.0	78.0		63.0	63.0		4.0	24.0		4.0	24.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		3.5	4.0		3.5	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		0.5	1.0		0.5	1.0	
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		3.0	4.0		3.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Max		Max	Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0			7.0			7.0	
Flash Dont Walk (s)		13.0		13.0	13.0			17.0			17.0	
Pedestrian Calls (#/hr)		0		0	0			0			0	
Act Effct Green (s)	79.0	79.0		64.0	64.0		29.3	23.3		29.3	23.3	
Actuated g/C Ratio	0.67	0.67		0.54	0.54		0.25	0.20		0.25	0.20	
v/c Ratio	0.93	0.43		0.17	1.02		0.78	0.30		0.45	0.92	
Control Delay	75.0	10.1		16.3	54.9		74.3	31.4		40.9	55.0	
Queue Delay	0.0	0.0		0.0	13.6		0.0	0.0		0.0	0.0	
Total Delay	75.0	10.1		16.3	68.5		74.3	31.4		40.9	55.0	
LOS	E	B		B	E		E	C		D	E	
Approach Delay		21.3			67.1			52.7			51.7	
Approach LOS		C			E			D			D	

Lanes, Volumes, Timings

Option 2 Sensitivity

3050: Riverside Drive & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	32.8	52.8		6.2	~255.3		18.2	14.6		23.4	59.8	
Queue Length 95th (m)	#78.5	65.6		13.9	#298.3		#34.5	25.8		40.0	#115.7	
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0								
Base Capacity (vph)	219	2264		306	1864		129	366		284	466	
Starvation Cap Reductn	0	0		0	64		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.93	0.43		0.17	1.06		0.78	0.28		0.45	0.88	

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 118.3

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 50.3

Intersection LOS: D

Intersection Capacity Utilization 97.9%

ICU Level of Service F

Analysis Period (min) 15

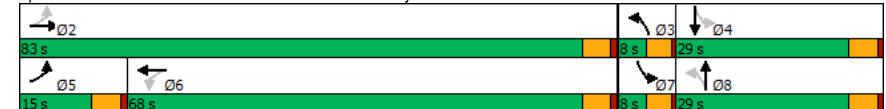
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3050: Riverside Drive & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↗			↗	↖
Traffic Volume (vph)	26	819	109	20	1714	15	81	1	11	28	1	33
Future Volume (vph)	26	819	109	20	1714	15	81	1	11	28	1	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.982			0.999			0.984				0.850
Flt Protected	0.950			0.950				0.958			0.954	
Satd. Flow (prot)	1789	3514	0	1789	3575	0	0	1775	0	0	1797	1601
Flt Permitted	0.106			0.266				0.719			0.741	
Satd. Flow (perm)	200	3514	0	501	3575	0	0	1333	0	0	1396	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			2			11				31
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.93	0.93	0.93	0.96	0.96	0.96	0.93	0.93	0.93	0.60	0.60	0.60
Adj. Flow (vph)	28	881	117	21	1785	16	87	1	12	47	2	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	28	998	0	21	1801	0	0	100	0	0	49	55
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	41.0	41.0		41.0	41.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	58.6%	58.6%		58.6%	58.6%		41.4%	41.4%		41.4%	41.4%	41.4%
Maximum Green (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0			-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	38.7	38.7		38.7	38.7			10.1			10.1	10.1
Actuated g/C Ratio	0.73	0.73		0.73	0.73			0.19			0.19	0.19
v/c Ratio	0.19	0.39		0.06	0.69			0.38			0.18	0.17
Control Delay	8.2	4.5		4.3	7.8			22.2			20.4	12.3
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.2	4.5		4.3	7.8			22.2			20.4	12.3
LOS	A	A		A	A			C			C	B
Approach Delay		4.6			7.8			22.2			16.1	
Approach LOS		A			A			C			B	
Queue Length 50th (m)	0.8	17.5		0.6	47.6			7.9			4.2	2.0

Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	5.0	33.3		2.8	90.2			18.8			7.3	5.1
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0			45.0							35.0
Base Capacity (vph)	147	2603		370	2640			639			662	776
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.19	0.38		0.06	0.68			0.16			0.07	0.07

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 53.1

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.69

Intersection Signal Delay: 7.5

Intersection LOS: A

Intersection Capacity Utilization 69.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖↖	↖↖	↖	↖	↖
Traffic Volume (vph)	348	510	1239	194	139	510
Future Volume (vph)	348	510	1239	194	139	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.100				0.950	
Satd. Flow (perm)	188	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				151		312
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	387	567	1377	216	154	567
Shared Lane Traffic (%)						
Lane Group Flow (vph)	387	567	1377	216	154	567
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	9.0	30.0	30.0	30.0	28.0	28.0
Total Split (s)	19.0	60.0	41.0	41.0	30.0	30.0
Total Split (%)	21.1%	66.7%	45.6%	45.6%	33.3%	33.3%
Maximum Green (s)	14.0	55.0	36.0	36.0	25.0	25.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	None	None	None	None
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	54.3	54.3	35.2	35.2	20.3	20.3
Actuated g/C Ratio	0.64	0.64	0.42	0.42	0.24	0.24
v/c Ratio	1.00	0.25	0.93	0.29	0.36	0.91
Control Delay	71.9	7.5	36.9	7.3	29.0	34.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.9	7.5	36.9	7.3	29.0	34.8
LOS	E	A	D	A	C	C
Approach Delay		33.6	32.8		33.6	
Approach LOS		C	C		C	
Queue Length 50th (m)	-58.4	21.7	119.4	6.9	21.0	43.2

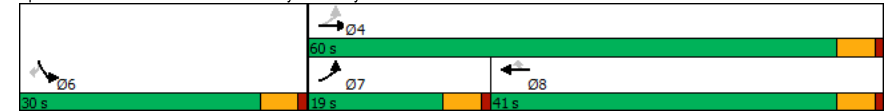
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#112.7	29.8	#166.5	20.8	37.1	#102.7
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	387	2344	1534	772	532	695
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	1.00	0.24	0.90	0.28	0.29	0.82

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 84.7	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 33.2	Intersection LOS: C
Intersection Capacity Utilization 74.2%	ICU Level of Service D
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

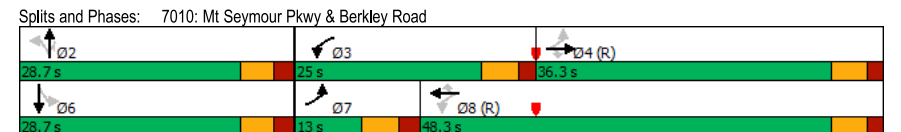
	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	179	1002	125	311	1492	52	46	9	126	74	82	370
Future Volume (vph)	179	1002	125	311	1492	52	46	9	126	74	82	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.084			0.159			0.691			0.750		
Satd. Flow (perm)	158	3579	1601	299	3579	1601	1301	1883	1601	1413	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			175			107			173			405
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.6			116.0			119.3			142.6	
Travel Time (s)		6.0			7.0			8.9			10.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.80	0.80	0.80	0.90	0.90	0.90
Adj. Flow (vph)	195	1089	136	338	1622	57	58	11	158	82	91	411
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	1089	136	338	1622	57	58	11	158	82	91	411
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	13.0	36.3	36.3	25.0	48.3	48.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	14.4%	40.3%	40.3%	27.8%	53.7%	53.7%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	6.9	30.7	30.7	19.4	42.7	42.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	-2.1	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7	-1.7	-1.7	-1.7	-1.7	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0		10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	
Act Effct Green (s)	59.3	47.1	47.1	69.2	53.3	53.3	12.5	12.5	12.5	12.5	12.5	90.0
Actuated g/C Ratio	0.66	0.52	0.52	0.77	0.59	0.59	0.14	0.14	0.14	0.14	0.14	1.00
v/c Ratio	0.60	0.58	0.15	0.63	0.77	0.06	0.32	0.04	0.43	0.42	0.35	0.26
Control Delay	25.6	18.0	1.7	14.0	18.5	0.6	38.7	31.8	8.2	41.2	37.9	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.6	18.0	1.7	14.0	18.5	0.6	38.7	31.8	8.2	41.2	37.9	0.4
LOS	C	B	A	B	B	A	D	C	A	D	D	A
Approach Delay		17.5			17.2			17.1			12.0	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	15.9	64.0	0.0	17.8	97.7	0.0	9.2	1.7	0.0	13.2	14.5	0.0

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	37.9	107.8	5.9	46.1	#182.8	1.3	17.1	5.4	8.5	25.3	26.7	0.0
Internal Link Dist (m)		75.6			92.0			95.3			118.6	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	325	1873	921	594	2120	992	357	516	564	387	516	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.58	0.15	0.57	0.77	0.06	0.16	0.02	0.28	0.21	0.18	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 16.6	Intersection LOS: B
Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖↖	↖↖	↖	↖	↖
Traffic Volume (vph)	116	533	1306	65	46	129
Future Volume (vph)	116	533	1306	65	46	129
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3579	1601	1789	1601
Flt Permitted	0.115				0.950	
Satd. Flow (perm)	217	3579	3579	1601	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				66		140
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	391.4		116.7	
Travel Time (s)		37.0	29.4		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	579	1420	71	50	140
Shared Lane Traffic (%)						
Lane Group Flow (vph)	126	579	1420	71	50	140
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	7.0
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	24.0
Total Split (s)	10.0	46.0	36.0	36.0	24.0	24.0
Total Split (%)	14.3%	65.7%	51.4%	51.4%	34.3%	34.3%
Maximum Green (s)	5.0	41.0	31.0	31.0	19.0	19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Min	Min	Min	Max	Max
Walk Time (s)		7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	12.0
Pedestrian Calls (#/hr)		0	0	0	0	0
Act Effct Green (s)	37.5	37.5	29.9	29.9	19.2	19.2
Actuated g/C Ratio	0.56	0.56	0.45	0.45	0.29	0.29
v/c Ratio	0.53	0.29	0.89	0.09	0.10	0.25
Control Delay	15.1	7.9	26.2	4.1	19.8	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	7.9	26.2	4.1	19.8	5.5
LOS	B	A	C	A	B	A
Approach Delay		9.2	25.2		9.3	
Approach LOS		A	C		A	
Queue Length 50th (m)	6.6	17.6	86.3	0.4	4.9	0.0

7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	14.3	25.4	#130.1	6.4	12.2	11.5
Internal Link Dist (m)		469.5	367.4		92.7	
Turn Bay Length (m)	50.0			50.0		
Base Capacity (vph)	240	2220	1678	785	514	560
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.26	0.85	0.09	0.10	0.25

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 66.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 19.2

Intersection LOS: B

Intersection Capacity Utilization 60.9%

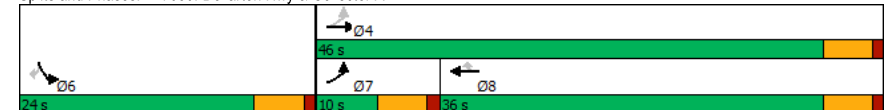
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
















Queue shown is maximum after two cycles.

Splits and Phases: 7050: Dollarton Hwy & Collector A














HCM Unsignalized Intersection Capacity Analysis
2030: Semour River Pl & Old Dollarton

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	103	5	0	234	88	0	0	44	94	0	181
Future Volume (Veh/h)	97	103	5	0	234	88	0	0	44	94	0	181
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.80	0.80	0.80	0.93	0.93	0.93	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	121	129	6	0	252	95	0	0	55	118	0	226
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	347			135			900	721	132	728	676	300
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	347			135			900	721	132	728	676	300
tC, single (s)	4.2			4.4			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.5			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			100	100	94	60	100	69
cM capacity (veh/h)	1185			1279			167	320	923	294	339	738
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	256	347	55	344								
Volume Left	121	0	0	118								
Volume Right	6	95	55	226								
cSH	1185	1279	923	486								
Volume to Capacity	0.10	0.00	0.06	0.71								
Queue Length 95th (m)	2.6	0.0	1.4	42.2								
Control Delay (s)	4.5	0.0	9.1	28.5								
Lane LOS	A		A	D								
Approach Delay (s)	4.5	0.0	9.1	28.5								
Approach LOS			A	D								
Intersection Summary												
Average Delay	11.4											
Intersection Capacity Utilization	61.8%			ICU Level of Service			B					
Analysis Period (min)	15											
















HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 2 Sensitivity

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	178	31	150	71	52	353
Future Volume (Veh/h)	178	31	150	71	52	353
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	198	34	167	79	58	392
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	98			338		
pX, platoon unblocked	0.99	0.99			0.99	
vC, conflicting volume	714	206			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	705	190			230	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	48	96			96	
cM capacity (veh/h)	380	841			1321	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	232	246	450			
Volume Left	198	0	58			
Volume Right	34	79	0			
cSH	414	1700	1321			
Volume to Capacity	0.56	0.14	0.04			
Queue Length 95th (m)	25.4	0.0	1.0			
Control Delay (s)	24.3	0.0	1.4			
Lane LOS	C		A			
Approach Delay (s)	24.3	0.0	1.4			
Approach LOS	C					
Intersection Summary						
Average Delay	6.7					
Intersection Capacity Utilization	55.4%			ICU Level of Service		B
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis
3020: Riverside Drive/Riverside & Windridge Dr

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	73	0	29	0	559	18	12	705	0
Future Volume (Veh/h)	0	0	0	73	0	29	0	559	18	12	705	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.92	0.90	0.92	0.90	0.90	0.90	0.90	0.92
Hourly flow rate (vph)	0	0	0	81	0	32	0	621	20	13	783	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type							None			None		
Median storage (veh)												
Upstream signal (m)							264			113		
pX, platoon unblocked												
vC, conflicting volume	1472	1450	783	1440	1440	631	783				641	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1472	1450	783	1440	1440	631	783				641	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	26	100	93	100				99	
cM capacity (veh/h)	97	129	394	109	131	481	835				943	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	113	641	796								
Volume Left	0	81	0	13								
Volume Right	0	32	20	0								
cSH	1700	140	1700	943								
Volume to Capacity	0.00	0.81	0.38	0.01								
Queue Length 95th (m)	0.0	38.3	0.0	0.3								
Control Delay (s)	0.0	93.3	0.0	0.4								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	93.3	0.0	0.4								
Approach LOS	A	F										
Intersection Summary												
Average Delay				7.0								
Intersection Capacity Utilization				Err%	ICU Level of Service			H				
Analysis Period (min)				15								

HCM Unsignalized Intersection Capacity Analysis
3040: Riverside Drive & Front St

Option 2 Sensitivity

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	39	38	260	420	157
Future Volume (Veh/h)	48	39	38	260	420	157
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	42	41	283	457	171
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked	0.76	0.74	0.74			
vC, conflicting volume	908	542	628			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628	214	328			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	84	93	96			
cM capacity (veh/h)	324	615	916			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	94	324	628			
Volume Left	52	41	0			
Volume Right	42	0	171			
cSH	411	916	1700			
Volume to Capacity	0.23	0.04	0.37			
Queue Length 95th (m)	6.6	1.1	0.0			
Control Delay (s)	16.3	1.6	0.0			
Lane LOS	C	A				
Approach Delay (s)	16.3	1.6	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			2.0			
Intersection Capacity Utilization			57.5%	ICU Level of Service		B
Analysis Period (min)			15			






















HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 2 Sensitivity

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↖
Traffic Volume (veh/h)	17	31	27	16	33	18
Future Volume (Veh/h)	17	31	27	16	33	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	34	30	18	37	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			53		114	36
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			53		114	36
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		96	98
cM capacity (veh/h)			1553		865	1037
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	53	48	57			
Volume Left	0	30	37			
Volume Right	34	0	20			
cSH	1700	1553	919			
Volume to Capacity	0.03	0.02	0.06			
Queue Length 95th (m)	0.0	0.4	1.5			
Control Delay (s)	0.0	4.7	9.2			
Lane LOS		A	A			
Approach Delay (s)	0.0	4.7	9.2			
Approach LOS			A			
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			19.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (veh/h)	1	1262	7	49	1852	7	1	0	31	12	0	6
Future Volume (Veh/h)	1	1262	7	49	1852	7	1	0	31	12	0	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80	0.50	0.50	0.50
Hourly flow rate (vph)	1	1402	8	54	2058	8	1	0	39	24	0	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					284							
pX, platoon unblocked	0.63						0.63	0.63		0.63	0.63	0.63
vC, conflicting volume	2066			1410			2557	3582	705	2912	3582	1033
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1508			1410			2292	3930	705	2859	3930	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			89			92	100	90	0	100	98
cM capacity (veh/h)	275			480			12	2	379	4	2	679
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	1	935	475	54	1372	694	40	36				
Volume Left	1	0	0	54	0	0	1	24				
Volume Right	0	0	8	0	0	8	39	12				
cSH	275	1700	1700	480	1700	1700	213	6				
Volume to Capacity	0.00	0.55	0.28	0.11	0.81	0.41	0.19	6.16				
Queue Length 95th (m)	0.1	0.0	0.0	2.9	0.0	0.0	5.1	Err				
Control Delay (s)	18.1	0.0	0.0	13.5	0.0	0.0	25.7	Err				
Lane LOS	C			B			D	F				
Approach Delay (s)	0.0			0.3			25.7	Err				
Approach LOS							D	F				
Intersection Summary												
Average Delay			100.3									
Intersection Capacity Utilization			65.6%	ICU Level of Service				C				
Analysis Period (min)			15									

Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Volume (vph)	700	2	10	645	0	9
Future Volume (vph)	700	2	10	645	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	20.0		0.0	40.0
Storage Lanes		0	1		0	1
Taper Length (m)			15.0		15.0	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Frt						0.850
Flt Protected			0.950			
Satd. Flow (prot)	3579	0	1789	3579	1883	1601
Flt Permitted			0.362			
Satd. Flow (perm)	3579	0	682	3579	1883	1601
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	1					147
Link Speed (k/h)	48			48	48	
Link Distance (m)	256.5			69.3	55.2	
Travel Time (s)	19.2			5.2	4.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	761	2	11	701	0	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	763	0	11	701	0	10
Turn Type	NA		Perm	NA	Prot	Perm
Protected Phases	2			6	8	
Permitted Phases			6			8
Detector Phase	2		6	6	8	8
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	7.0
Minimum Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (s)	29.0		21.0	21.0	21.0	21.0
Total Split (%)	58.0%		42.0%	42.0%	42.0%	42.0%
Maximum Green (s)	24.0		16.0	16.0	16.0	16.0
Yellow Time (s)	4.0		4.0	4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0		-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0		4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Recall Mode	Max		None	None	None	None
Walk Time (s)	7.0					
Flash Dont Walk (s)	17.0					
Pedestrian Calls (#/hr)	0					
Act Effct Green (s)	43.7		43.7	43.7		8.1
Actuated g/C Ratio	0.94		0.94	0.94		0.17
v/c Ratio	0.23		0.02	0.21		0.03
Control Delay	1.0		1.4	1.0		0.1
Queue Delay	0.0		0.0	0.0		0.0
Total Delay	1.0		1.4	1.0		0.1
LOS	A		A	A		A
Approach Delay	1.0			1.0	0.1	
Approach LOS	A			A	A	
Queue Length 50th (m)	0.0		0.0	0.0		0.0

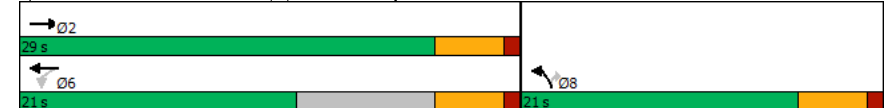
Lanes, Volumes, Timings
1050: Riverside (W) & Dollarton Hwy

Option 2 Sensitivity

	→	↗	↖	←	↙	↘
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Queue Length 95th (m)	15.8		1.2	14.3		0.0
Internal Link Dist (m)	232.5			45.3	31.2	
Turn Bay Length (m)			20.0			40.0
Base Capacity (vph)	3374		643	3374		684
Starvation Cap Reductn	0		0	463		0
Spillback Cap Reductn	0		0	0		0
Storage Cap Reductn	0		0	0		0
Reduced v/c Ratio	0.23		0.02	0.24		0.01

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 46.4	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.23	
Intersection Signal Delay: 1.0	Intersection LOS: A
Intersection Capacity Utilization 31.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 1050: Riverside (W) & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity













2050: Amherst Ave/Old Dollarton & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖	↖		↖	↖
Traffic Volume (vph)	401	1729	46	37	1349	15	138	19	57	13	19	239
Future Volume (vph)	401	1729	46	37	1349	15	138	19	57	13	19	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	20.0		0.0	75.0		0.0	0.0		15.0	0.0		30.0
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.998				0.850			0.850
Flt Protected	0.950			0.950				0.958			0.980	
Satd. Flow (prot)	1789	3554	0	1690	3559	0	0	1778	1526	0	1883	1570
Flt Permitted	0.100			0.111				0.727			0.869	
Satd. Flow (perm)	188	3554	0	197	3559	0	0	1349	1526	0	1669	1570
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			1				85			266
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		69.3			68.7			223.8			98.7	
Travel Time (s)		5.2			5.2			16.8			7.4	
Peak Hour Factor	0.95	0.95	0.95	0.85	0.85	0.85	0.80	0.80	0.80	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	13%	8%	2%	33%	4%	0%	7%	0%	0%	4%
Adj. Flow (vph)	422	1820	48	44	1587	18	173	24	71	14	21	266
Shared Lane Traffic (%)												
Lane Group Flow (vph)	422	1868	0	44	1605	0	0	197	71	0	35	266
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	28.0		28.0	28.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (s)	20.0	60.0		40.0	40.0		30.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	22.2%	66.7%		44.4%	44.4%		33.3%	33.3%	33.3%	33.3%	33.3%	33.3%
Maximum Green (s)	15.0	55.0		35.0	35.0		25.0	25.0	25.0	25.0	25.0	25.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	None	None	None	None	None
Walk Time (s)		7.0			7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		16.0		16.0	16.0		18.0	18.0	18.0	18.0	18.0	18.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	56.2	56.2		36.1	36.1		18.0	18.0	18.0	18.0	18.0	18.0
Actuated g/C Ratio	0.68	0.68		0.44	0.44		0.22	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.96	0.77		0.51	1.03		0.67	0.18	0.10	0.10	0.48	
Control Delay	57.8	12.5		45.1	54.9		40.8	5.6	25.2	6.6		
Queue Delay	42.9	47.8		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	100.7	60.3		45.1	54.9		40.8	5.6	25.2	6.6		
LOS	F	E		D	D		D	A		C	A	
Approach Delay		67.8			54.6			31.5			8.8	
Approach LOS		E			D			C			A	

Lanes, Volumes, Timings

Option 2 Sensitivity

2050: Amherst Ave/Old Dollarton & Dollarton Hwy

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	49.2	87.3		4.8	~142.9			28.3	0.0		4.4	0.0
Queue Length 95th (m)	#120.4	156.8		#20.6	#193.7			42.1	5.3		11.3	16.8
Internal Link Dist (m)		45.3			44.7			199.8			74.7	
Turn Bay Length (m)	20.0			75.0					15.0			30.0
Base Capacity (vph)	441	2431		86	1564			428	542		529	679
Starvation Cap Reductn	91	855		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	1.21	1.19		0.51	1.03			0.46	0.13		0.07	0.39
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 82.2												
Natural Cycle: 100												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.03												
Intersection Signal Delay: 56.8						Intersection LOS: E						
Intersection Capacity Utilization 85.3%						ICU Level of Service E						
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 2050: Amherst Ave/Old Dollarton & Dollarton Hwy



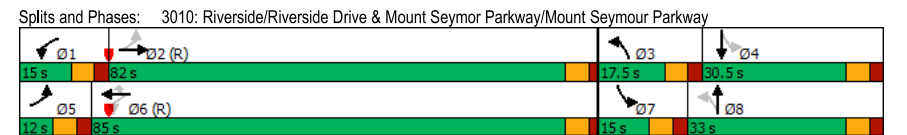
Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗	↖	↖	↑	↖	↖	↖	↖
Traffic Volume (vph)	99	1342	322	290	720	62	168	97	502	47	55	71
Future Volume (vph)	99	1342	322	290	720	62	168	97	502	47	55	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	70.0		0.0	130.0		35.0	0.0		25.0	50.0		10.0
Storage Lanes	1		0	2		1	1		1	1		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971				0.850			0.850		0.916	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3475	0	3471	3579	1601	1789	1883	1601	1789	1725	0
Flt Permitted	0.312			0.046			0.314			0.663		
Satd. Flow (perm)	588	3475	0	168	3579	1601	591	1883	1601	1249	1725	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31				122			298		39	
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		524.9			164.2			71.4			172.4	
Travel Time (s)		39.4			12.3			5.4			12.9	
Peak Hour Factor	0.82	0.82	0.82	0.90	0.90	0.90	0.80	0.80	0.80	0.80	0.80	0.80
Adj. Flow (vph)	121	1637	393	322	800	69	210	121	628	59	69	89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	2030	0	322	800	69	210	121	628	59	158	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Free	pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6		6	8		Free	4		
Detector Phase	5	2		1	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	5.0	25.0		5.0	25.0	25.0	4.0	7.0		4.0	7.0	
Minimum Split (s)	11.4	30.5		11.4	30.5	30.5	10.4	30.4		10.4	30.4	
Total Split (s)	12.0	82.0		15.0	85.0	85.0	17.5	33.0		15.0	30.5	
Total Split (%)	8.3%	56.6%		10.3%	58.6%	58.6%	12.1%	22.8%		10.3%	21.0%	
Maximum Green (s)	5.6	76.5		8.6	79.5	79.5	11.1	26.6		8.6	24.1	
Yellow Time (s)	3.9	3.9		3.9	3.9	3.9	3.9	3.9		3.9	3.9	
All-Red Time (s)	2.5	1.6		2.5	1.6	1.6	2.5	2.5		2.5	2.5	
Lost Time Adjust (s)	-2.4	-1.5		-2.4	-1.5	0.0	-2.4	-2.4		-2.4	-2.4	
Total Lost Time (s)	4.0	4.0		4.0	4.0	5.5	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.5	3.0		2.5	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Dont Walk (s)		7.0			7.0	7.0		17.0			17.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	92.5	82.5		101.4	87.6	86.1	34.3	23.5	145.0	28.3	17.9	
Actuated g/C Ratio	0.64	0.57		0.70	0.60	0.59	0.24	0.16	1.00	0.20	0.12	
v/c Ratio	0.26	1.02		0.70	0.37	0.07	0.84	0.40	0.39	0.21	0.64	
Control Delay	9.5	56.0		42.6	15.9	0.1	74.5	58.8	0.7	43.1	56.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	9.5	56.0		42.6	15.9	0.1	74.5	58.8	0.7	43.1	56.5	
LOS	A	E		D	B	A	E	E	A	D	E	
Approach Delay		53.4			22.2			24.2			52.8	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	10.3	~331.1		30.0	59.4	0.0	52.1	32.4	0.0	13.4	33.0	

Lanes, Volumes, Timings Option 2 Sensitivity
3010: Riverside/Riverside Drive & Mount Seymour Parkway/Mount Seymour Parkway

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	17.8	#319.4		#53.0	80.8	0.1	63.1	43.9	0.0	21.2	46.2	
Internal Link Dist (m)		500.9			140.2			47.4			148.4	
Turn Bay Length (m)	70.0			130.0		35.0			25.0	50.0		
Base Capacity (vph)	458	1991		461	2162	1000	251	376	1601	289	347	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.26	1.02		0.70	0.37	0.07	0.84	0.32	0.39	0.20	0.46	

Intersection Summary	
Area Type:	Other
Cycle Length:	145
Actuated Cycle Length:	145
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	39.0 Intersection LOS: D
Intersection Capacity Utilization	85.5% ICU Level of Service E
Analysis Period (min) 15	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 2 Sensitivity

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔		↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	202	30	36	28	18	80	43	527	70	77	283	288
Future Volume (vph)	202	30	36	28	18	80	43	527	70	77	283	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		45.0	0.0		0.0	0.0		0.0	0.0		15.0
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.914			0.983			0.850
Flt Protected		0.958			0.989		0.950				0.989	
Satd. Flow (prot)	0	1804	1601	0	1703	0	1789	1851	0	0	1863	1601
Flt Permitted		0.706			0.892		0.454				0.639	
Satd. Flow (perm)	0	1330	1601	0	1536	0	855	1851	0	0	1204	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			45		94			15				276
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		200.9			287.8			137.8			264.2	
Travel Time (s)		15.1			21.6			10.3			19.8	
Peak Hour Factor	0.80	0.80	0.80	0.85	0.85	0.85	0.94	0.94	0.94	0.90	0.90	0.90
Adj. Flow (vph)	253	38	45	33	21	94	46	561	74	86	314	320
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	291	45	0	148	0	46	635	0	0	400	320
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2		2	6			8			4		4
Detector Phase	2	2	2	6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0		26.0	26.0		26.0	26.0	26.0
Total Split (s)	27.0	27.0	27.0	27.0	27.0		33.0	33.0		33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%		55.0%	55.0%		55.0%	55.0%	55.0%
Maximum Green (s)	22.0	22.0	22.0	22.0	22.0		28.0	28.0		28.0	28.0	28.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)		-1.0	-1.0		-1.0		-1.0	-1.0		-1.0	-1.0	
Total Lost Time (s)		4.0	4.0		4.0		4.0	4.0		4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	4.0
Recall Mode	Min	Min	Min	Min	Min		Min	Min		Min	Min	Min
Walk Time (s)	7.0	7.0	7.0	7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	13.0	13.0	13.0	13.0	13.0		14.0	14.0		14.0	14.0	14.0
Pedestrian Calls (#/hr)	0	0	0	0	0		0	0		0	0	0
Act Effct Green (s)		17.7	17.7		17.7		24.4	24.4		24.4	24.4	
Actuated g/C Ratio		0.35	0.35		0.35		0.48	0.48		0.48	0.48	
v/c Ratio		0.62	0.08		0.25		0.11	0.70		0.69	0.35	
Control Delay		21.1	4.8		6.9		9.1	15.9		18.8	3.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay		21.1	4.8		6.9		9.1	15.9		18.8	3.3	
LOS		C	A		A		A	B		B	A	
Approach Delay		18.9			6.9			15.4		11.9		
Approach LOS		B			A			B		B		
Queue Length 50th (m)		23.0	0.0		3.5		2.2	42.0		26.9	2.0	

Lanes, Volumes, Timings
3030: Riverside & Old Dollarton

Option 2 Sensitivity

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)		38.3	4.0		12.0		7.3	83.0			#62.8	13.3
Internal Link Dist (m)		176.9			263.8			113.8			240.2	
Turn Bay Length (m)			45.0									15.0
Base Capacity (vph)		632	784		779		512	1115			721	1070
Starvation Cap Reductn		0	0		0		0	0			0	0
Spillback Cap Reductn		0	0		0		0	0			0	0
Storage Cap Reductn		0	0		0		0	0			0	0
Reduced v/c Ratio		0.46	0.06		0.19		0.09	0.57			0.55	0.30

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 50.5

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 14.0

Intersection LOS: B

Intersection Capacity Utilization 80.6%

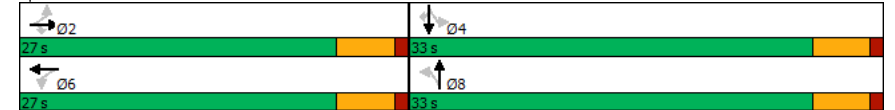
ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 3030: Riverside & Old Dollarton















Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 2 Sensitivity

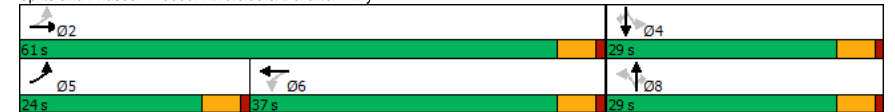
	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗			↖	↖		↖	↖
Traffic Volume (vph)	435	1318	9	25	1161	95	60	45	52	117	28	157
Future Volume (vph)	435	1318	9	25	1161	95	60	45	52	117	28	157
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	95.0		0.0	45.0		0.0	0.0		25.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.989				0.850			0.850
Flt Protected	0.950			0.950				0.972			0.961	
Satd. Flow (prot)	1807	3604	0	1825	3484	0	0	1793	1633	0	1734	1617
Flt Permitted	0.108			0.178				0.645			0.671	
Satd. Flow (perm)	205	3604	0	342	3484	0	0	1190	1633	0	1211	1617
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			11				85			224
Link Speed (k/h)		48			48			48			48	
Link Distance (m)		213.9			242.5			117.5			105.2	
Travel Time (s)		16.0			18.2			8.8			7.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.70	0.70	0.70
Heavy Vehicles (%)	1%	1%	29%	0%	3%	11%	2%	7%	0%	8%	0%	1%
Adj. Flow (vph)	483	1464	10	28	1290	106	67	50	58	167	40	224
Shared Lane Traffic (%)												
Lane Group Flow (vph)	483	1474	0	28	1396	0	0	117	58	0	207	224
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			8			4	
Permitted Phases	2			6			8		8	4		4
Detector Phase	5	2		6	6		8	8	8	4	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0		10.0	10.0		7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	10.0	25.0		25.0	25.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (s)	24.0	61.0		37.0	37.0		29.0	29.0	29.0	29.0	29.0	29.0
Total Split (%)	26.7%	67.8%		41.1%	41.1%		32.2%	32.2%	32.2%	32.2%	32.2%	32.2%
Maximum Green (s)	19.0	56.0		32.0	32.0		24.0	24.0	24.0	24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0		-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	2.5	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		Max	Max		None	None	None	None	None	None
Walk Time (s)		7.0		7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0
Flash Dont Walk (s)		13.0		13.0	13.0		17.0	17.0	17.0	17.0	17.0	17.0
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	0
Act Effct Green (s)	57.2	57.2		33.1	33.1		19.5	19.5	19.5	19.5	19.5	19.5
Actuated g/C Ratio	0.68	0.68		0.39	0.39		0.23	0.23	0.23	0.23	0.23	0.23
v/c Ratio	0.93	0.61		0.21	1.02		0.43	0.13	0.74	0.41	0.41	0.41
Control Delay	50.4	9.6		24.2	57.4		32.5	3.5	46.9	6.2	6.2	6.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	9.6		24.2	57.4		32.5	3.5	46.9	6.2	6.2	6.2
LOS	D	A		C	E		C	A		D	A	A
Approach Delay		19.7			56.7			22.9			25.7	
Approach LOS		B			E			C			C	

Lanes, Volumes, Timings
3050: Riverside & Dollarton Hwy

Option 2 Sensitivity

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (m)	60.9	62.4		3.0	~130.1			16.2	0.0		31.2	0.0
Queue Length 95th (m)	#129.9	95.0		10.4	#185.2			31.2	4.9		39.3	5.4
Internal Link Dist (m)		189.9			218.5			93.5			81.2	
Turn Bay Length (m)	95.0			45.0					25.0			
Base Capacity (vph)	517	2433		133	1368			352	543		358	636
Starvation Cap Reductn	0	0		0	0			0	0		0	0
Spillback Cap Reductn	0	0		0	0			0	0		0	0
Storage Cap Reductn	0	0		0	0			0	0		0	0
Reduced v/c Ratio	0.93	0.61		0.21	1.02			0.33	0.11		0.58	0.35
Intersection Summary												
Area Type:	Other											
Cycle Length: 90												
Actuated Cycle Length: 84.7												
Natural Cycle: 90												
Control Type: Actuated-Uncoordinated												
Maximum v/c Ratio: 1.02												
Intersection Signal Delay: 33.7 Intersection LOS: C												
Intersection Capacity Utilization 83.8% ICU Level of Service E												
Analysis Period (min) 15												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												

Splits and Phases: 3050: Riverside & Dollarton Hwy



Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	↗
Traffic Volume (vph)	24	1566	24	8	990	23	176	4	11	31	0	17
Future Volume (vph)	24	1566	24	8	990	23	176	4	11	31	0	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	45.0		0.0	45.0		0.0	0.0		0.0	0.0		35.0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.997			0.992				0.850
Flt Protected	0.950			0.950				0.956			0.950	
Satd. Flow (prot)	1789	3571	0	1789	3568	0	0	1786	0	0	1789	1601
Flt Permitted	0.204			0.134				0.714			0.737	
Satd. Flow (perm)	384	3571	0	252	3568	0	0	1334	0	0	1388	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				36
Link Speed (k/h)		48			48			48				48
Link Distance (m)		242.5			340.8			214.7				160.0
Travel Time (s)		18.2			25.6			16.1				12.0
Peak Hour Factor	0.92	0.92	0.92	0.90	0.90	0.90	0.90	0.90	0.90	0.80	0.80	0.80
Adj. Flow (vph)	26	1702	26	9	1100	26	196	4	12	39	0	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	26	1728	0	9	1126	0	0	212	0	0	39	21
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		4
Detector Phase	2	2		6	6		8	8		4	4	4
Switch Phase												
Minimum Initial (s)	25.0	25.0		25.0	25.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	30.0	30.0		30.0	30.0		29.0	29.0		29.0	29.0	29.0
Total Split (s)	31.0	31.0		31.0	31.0		29.0	29.0		29.0	29.0	29.0
Total Split (%)	51.7%	51.7%		51.7%	51.7%		48.3%	48.3%		48.3%	48.3%	48.3%
Maximum Green (s)	26.0	26.0		26.0	26.0		24.0	24.0		24.0	24.0	24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	1.0
Lost Time Adjust (s)	-1.0	-1.0		-1.0	-1.0			-1.0		-1.0	-1.0	-1.0
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Min	Min		Min	Min		None	None		None	None	None
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	7.0
Flash Dont Walk (s)	12.0	12.0		12.0	12.0		17.0	17.0		17.0	17.0	17.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)	30.7	30.7		30.7	30.7			13.6			13.5	13.5
Actuated g/C Ratio	0.63	0.63		0.63	0.63			0.28			0.28	0.28
v/c Ratio	0.11	0.77		0.06	0.50			0.56			0.10	0.04
Control Delay	8.5	14.2		8.0	8.4			20.5			12.9	3.4
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	0.0
Total Delay	8.5	14.2		8.0	8.4			20.5			12.9	3.4
LOS	A	B		A	A			C			B	A
Approach Delay		14.1			8.4			20.5			9.6	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	0.9	57.8		0.3	28.2			15.0			2.5	0.0

Lanes, Volumes, Timings

Option 2 Sensitivity

4050: Forester St & Dollarton Hwy

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	5.1	#135.8		2.5	57.8			30.2			6.5	1.9
Internal Link Dist (m)		218.5			316.8			190.7			136.0	
Turn Bay Length (m)		45.0		45.0								35.0
Base Capacity (vph)	242	2257		159	2256			694			719	847
Starvation Cap Reductn	0	0		0	0			0			0	0
Spillback Cap Reductn	0	0		0	0			0			0	0
Storage Cap Reductn	0	0		0	0			0			0	0
Reduced v/c Ratio	0.11	0.77		0.06	0.50			0.31			0.05	0.02

Intersection Summary

Area Type: Other

Cycle Length: 60

Actuated Cycle Length: 48.6

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay: 12.4

Intersection LOS: B

Intersection Capacity Utilization 68.0%

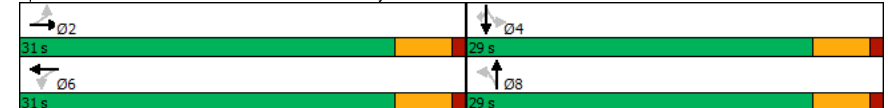
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 4050: Forester St & Dollarton Hwy



Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↩	↗	↗	↗	↩	↗
Traffic Volume (vph)	490	1120	531	117	275	490
Future Volume (vph)	490	1120	531	117	275	490
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.973			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1789	3579	3482	0	1789	1601
Flt Permitted	0.193				0.950	
Satd. Flow (perm)	364	3579	3482	0	1789	1601
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			29			533
Link Speed (k/h)		48	48		48	
Link Distance (m)		340.8	493.5		77.5	
Travel Time (s)		25.6	37.0		5.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	533	1217	577	127	299	533
Shared Lane Traffic (%)						
Lane Group Flow (vph)	533	1217	704	0	299	533
Turn Type	pm+pt	NA	NA		Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4					6
Detector Phase	7	4	8		6	6
Switch Phase						
Minimum Initial (s)	4.0	25.0	25.0		7.0	7.0
Minimum Split (s)	9.0	30.0	30.0		24.0	24.0
Total Split (s)	33.0	63.0	30.0		27.0	27.0
Total Split (%)	36.7%	70.0%	33.3%		30.0%	30.0%
Maximum Green (s)	28.0	58.0	25.0		22.0	22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	Min	None		None	None
Walk Time (s)		7.0	7.0		7.0	7.0
Flash Dont Walk (s)		12.0	12.0		12.0	12.0
Pedestrian Calls (#/hr)		0	0		0	0
Act Effct Green (s)	55.2	55.2	25.3		18.2	18.2
Actuated g/C Ratio	0.66	0.66	0.30		0.22	0.22
v/c Ratio	0.80	0.51	0.65		0.77	0.70
Control Delay	25.1	8.6	29.1		45.2	8.2
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	25.1	8.6	29.1		45.2	8.2
LOS	C	A	C		D	A
Approach Delay		13.6	29.1		21.5	
Approach LOS		B	C		C	
Queue Length 50th (m)	55.5	51.4	54.3		47.0	0.0

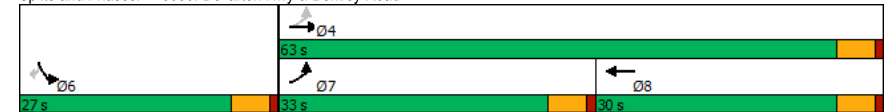
Lanes, Volumes, Timings
6050: Dollarton Hwy & Berkley Road

Option 2 Sensitivity

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	#106.8	68.2	74.6		74.3	26.0
Internal Link Dist (m)		316.8	469.5		53.5	
Turn Bay Length (m)	50.0					
Base Capacity (vph)	724	2517	1075		477	818
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.74	0.48	0.65		0.63	0.65

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.5	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 75.7%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 6050: Dollarton Hwy & Berkley Road



Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

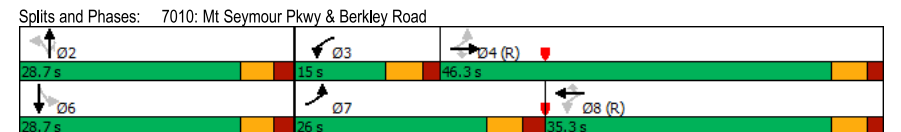
	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	412	1294	201	131	850	56	99	9	300	31	65	138
Future Volume (vph)	412	1294	201	131	850	56	99	9	300	31	65	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		35.0	65.0		65.0	50.0		0.0	30.0		30.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	15.0			15.0			15.0			15.0		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.108			0.130			0.715			0.749		
Satd. Flow (perm)	203	3579	1601	245	3579	1601	1347	1883	1601	1411	1883	1601
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			208			175			246			242
Link Speed (k/h)		60			60			48			48	
Link Distance (m)		99.5			125.4			116.5			145.4	
Travel Time (s)		6.0			7.5			8.7			10.9	
Peak Hour Factor	0.99	0.93	0.54	0.63	0.87	0.85	0.83	0.71	0.69	0.80	1.00	0.86
Adj. Flow (vph)	416	1391	372	208	977	66	119	13	435	39	65	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	416	1391	372	208	977	66	119	13	435	39	65	160
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Free
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		Free
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	3.0	25.0	25.0	4.0	25.0	25.0	7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.1	30.6	30.6	9.6	30.6	30.6	28.7	28.7	28.7	28.7	28.7	
Total Split (s)	26.0	46.3	46.3	15.0	35.3	35.3	28.7	28.7	28.7	28.7	28.7	
Total Split (%)	28.9%	51.4%	51.4%	16.7%	39.2%	39.2%	31.9%	31.9%	31.9%	31.9%	31.9%	
Maximum Green (s)	19.9	40.7	40.7	9.4	29.7	29.7	23.0	23.0	23.0	23.0	23.0	
Yellow Time (s)	3.8	3.8	3.8	3.8	3.8	3.8	3.4	3.4	3.4	3.4	3.4	
All-Red Time (s)	2.3	1.8	1.8	1.8	1.8	1.8	2.3	2.3	2.3	2.3	2.3	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.1	5.6	5.6	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes									
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		10.0	10.0	10.0	16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0	0	0	0	
Act Effct Green (s)	55.2	41.0	41.0	39.9	30.8	30.8	23.0	23.0	23.0	23.0	23.0	90.0
Actuated g/C Ratio	0.61	0.46	0.46	0.44	0.34	0.34	0.26	0.26	0.26	0.26	0.26	1.00
v/c Ratio	0.91	0.85	0.44	0.78	0.80	0.10	0.35	0.03	0.73	0.11	0.14	0.10
Control Delay	48.9	28.5	8.9	42.0	33.2	0.3	30.8	25.4	21.5	26.7	26.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	28.5	8.9	42.0	33.2	0.3	30.8	25.4	21.5	26.7	26.8	0.1
LOS	D	C	A	D	C	A	C	C	C	C	C	A
Approach Delay		29.0			32.9			23.5			10.6	
Approach LOS		C			C			C			B	
Queue Length 50th (m)	53.7	109.5	16.7	18.8	81.1	0.0	16.8	1.7	29.2	5.2	8.7	0.0

Lanes, Volumes, Timings
7010: Mt Seymour Pkwy & Berkley Road

Option 2 Sensitivity

	↖	→	↗	↖	←	↖	↖	↑	↗	↗	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (m)	#104.6	139.5	9.9	21.8	100.0	0.0	29.0	4.7	32.2	11.4	18.6	0.0
Internal Link Dist (m)		75.5			101.4			92.5			121.4	
Turn Bay Length (m)	60.0		35.0	65.0		65.0	50.0			30.0		30.0
Base Capacity (vph)	475	1629	841	270	1225	662	344	481	592	360	481	1601
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.85	0.44	0.77	0.80	0.10	0.35	0.03	0.73	0.11	0.14	0.10

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	



7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖↖	↖↖	↖	↖	
Traffic Volume (vph)	163	1232	558	39	92	90
Future Volume (vph)	163	1232	558	39	92	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	50.0			50.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	15.0				15.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt				0.850	0.933	
Flt Protected	0.950				0.975	
Satd. Flow (prot)	1789	3579	3579	1601	1713	0
Flt Permitted	0.318				0.975	
Satd. Flow (perm)	599	3579	3579	1601	1713	0
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)				42	54	
Link Speed (k/h)		48	48		48	
Link Distance (m)		493.5	437.4		116.7	
Travel Time (s)		37.0	32.8		8.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	1339	607	42	100	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	177	1339	607	42	198	0
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Detector Phase	7	4	8	8	6	
Switch Phase						
Minimum Initial (s)	5.0	25.0	25.0	25.0	7.0	
Minimum Split (s)	10.0	30.0	30.0	30.0	24.0	
Total Split (s)	16.0	60.0	44.0	44.0	30.0	
Total Split (%)	17.8%	66.7%	48.9%	48.9%	33.3%	
Maximum Green (s)	11.0	55.0	39.0	39.0	25.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	Min	None	
Walk Time (s)		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		12.0	12.0	12.0	12.0	
Pedestrian Calls (#/hr)		0	0	0	0	
Act Effct Green (s)	39.1	39.1	25.1	25.1	10.5	
Actuated g/C Ratio	0.65	0.65	0.42	0.42	0.18	
v/c Ratio	0.31	0.57	0.40	0.06	0.57	
Control Delay	6.0	7.3	13.9	5.1	23.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	6.0	7.3	13.9	5.1	23.3	
LOS	A	A	B	A	C	
Approach Delay		7.2	13.4		23.3	
Approach LOS		A	B		C	
Queue Length 50th (m)	5.9	33.8	23.1	0.0	14.4	

7050: Dollarton Hwy & Collector A

	↖	→	←	↖	↘	↘
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Queue Length 95th (m)	15.2	63.6	41.8	5.2	31.8	
Internal Link Dist (m)		469.5	413.4		92.7	
Turn Bay Length (m)		50.0		50.0		
Base Capacity (vph)	612	3295	2349	1065	752	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.41	0.26	0.04	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 59.7

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 10.2

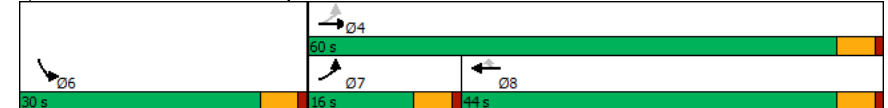
Intersection LOS: B

Intersection Capacity Utilization 53.0%

ICU Level of Service A
















Analysis Period (min) 15

Splits and Phases: 7050: Dollarton Hwy & Collector A












HCM Unsignalized Intersection Capacity Analysis
2030: Semour River Pl & Old Dollarton

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	137	25	0	196	84	0	0	47	82	0	158
Future Volume (Veh/h)	145	137	25	0	196	84	0	0	47	82	0	158
Sign Control	Free			Free			Stop			Stop		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.80	0.91	0.50	0.45	0.87	0.67	0.50	0.79	0.54	0.65	0.79	0.54
Hourly flow rate (vph)	181	151	50	0	225	125	0	0	87	126	0	293
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None			None								
Median storage (veh)												
Upstream signal (m)	235			201								
pX, platoon unblocked												
vC, conflicting volume	350			201			1118	888	176	912	850	288
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	350			201			1118	888	176	912	850	288
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	85			100			100	100	90	38	100	61
cM capacity (veh/h)	1214			1383			100	242	872	203	252	752
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	382	350	87	419								
Volume Left	181	0	0	126								
Volume Right	50	125	87	293								
cSH	1214	1383	872	414								
Volume to Capacity	0.15	0.00	0.10	1.01								
Queue Length 95th (m)	4.0	0.0	2.5	97.5								
Control Delay (s)	4.8	0.0	9.6	79.1								
Lane LOS	A		A	F								
Approach Delay (s)	4.8	0.0	9.6	79.1								
Approach LOS			A	F								
Intersection Summary												
Average Delay	28.9											
Intersection Capacity Utilization	63.1%			ICU Level of Service			B					
Analysis Period (min)	15											

















HCM Unsignalized Intersection Capacity Analysis
2040: Old Dollarton & Front St

Option 2 Sensitivity

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	81	59	253	155	171	157
Future Volume (Veh/h)	81	59	253	155	171	157
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	90	66	281	172	190	174
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	99			337		
pX, platoon unblocked	0.91	0.91			0.91	
vC, conflicting volume	921	367			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	860	248			343	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	63	91			83	
cM capacity (veh/h)	244	715			1100	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	156	453	364			
Volume Left	90	0	190			
Volume Right	66	172	0			
cSH	339	1700	1100			
Volume to Capacity	0.46	0.27	0.17			
Queue Length 95th (m)	17.7	0.0	4.7			
Control Delay (s)	24.4	0.0	5.5			
Lane LOS	C		A			
Approach Delay (s)	24.4	0.0	5.5			
Approach LOS	C					
Intersection Summary						
Average Delay	6.0					
Intersection Capacity Utilization	58.6%			ICU Level of Service		B
Analysis Period (min)	15					










HCM Unsignalized Intersection Capacity Analysis 3020: Riverside & Windridge Dr

Option 2 Sensitivity

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	27	0	21	0	748	55	25	642	0
Future Volume (Veh/h)	0	0	0	27	0	21	0	748	55	25	642	0
Sign Control	Stop			Stop			Free			Free		
Grade	0%			0%			0%			0%		
Peak Hour Factor	0.90	0.90	0.90	0.60	0.92	0.60	0.92	0.80	0.80	0.95	0.95	0.92
Hourly flow rate (vph)	0	0	0	45	0	35	0	935	69	26	676	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type	None						None					
Median storage (veh)												
Upstream signal (m)	264						113					
pX, platoon unblocked	0.79	0.79	0.94	0.79	0.79	0.76	0.94				0.76	
vC, conflicting volume	1732	1732	676	1698	1698	970	676				1004	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1630	1630	626	1586	1586	803	626				849	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	33	100	88	100				96	
cM capacity (veh/h)	55	77	456	67	82	292	901				601	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	80	1004	702								
Volume Left	0	45	0	26								
Volume Right	0	35	69	0								
cSH	1700	101	1700	601								
Volume to Capacity	0.13	0.79	0.59	0.04								
Queue Length 95th (m)	0.0	32.9	0.0	1.0								
Control Delay (s)	0.0	116.4	0.0	1.2								
Lane LOS	A	F		A								
Approach Delay (s)	0.0	116.4	0.0	1.2								
Approach LOS	A	F										
Intersection Summary												
Average Delay	5.7											
Intersection Capacity Utilization	Err%			ICU Level of Service			H					
Analysis Period (min)	15											

HCM Unsignalized Intersection Capacity Analysis 3040: Riverside & Front St

Option 2 Sensitivity

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	81	73	486	149	167
Future Volume (Veh/h)	137	81	73	486	149	167
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	90	81	540	166	186
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				105	138	
pX, platoon unblocked						
vC, conflicting volume	691	176	352			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	691	176	352			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	89	93			
cM capacity (veh/h)	353	837	1203			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	242	261	360	111	241	
Volume Left	152	81	0	0	0	
Volume Right	90	0	0	0	186	
cSH	450	1203	1700	1700	1700	
Volume to Capacity	0.54	0.07	0.21	0.07	0.14	
Queue Length 95th (m)	23.7	1.6	0.0	0.0	0.0	
Control Delay (s)	21.9	3.0	0.0	0.0	0.0	
Lane LOS	C	A				
Approach Delay (s)	21.9	1.2		0.0		
Approach LOS	C					
Intersection Summary						
Average Delay	5.0					
Intersection Capacity Utilization	47.6%			ICU Level of Service		A
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
4030: Forester St & Old Dollarton

Option 2 Sensitivity

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Volume (veh/h)	48	22	18	22	55	6
Future Volume (Veh/h)	48	22	18	22	55	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	53	24	20	24	61	7
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (m)	288					
pX, platoon unblocked						
vC, conflicting volume			77		129	65
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			77		129	65
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	99
cM capacity (veh/h)			1522		854	999
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	77	44	68			
Volume Left	0	20	61			
Volume Right	24	0	7			
cSH	1700	1522	867			
Volume to Capacity	0.05	0.01	0.08			
Queue Length 95th (m)	0.0	0.3	1.9			
Control Delay (s)	0.0	3.4	9.5			
Lane LOS		A	A			
Approach Delay (s)	0.0	3.4	9.5			
Approach LOS			A			
Intersection Summary						
Average Delay			4.2			
Intersection Capacity Utilization			18.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
6010: Browning PI & Mt Seymour Pkwy

Option 2 Sensitivity

	↗	→	↘	↙	←	↖	↗	↑	↘	↙	↓	↗
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔			↔	
Traffic Volume (veh/h)	12	1878	9	24	1057	7	1	0	20	8	0	14
Future Volume (Veh/h)	12	1878	9	24	1057	7	1	0	20	8	0	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.90	0.90	0.90	0.50	0.50	0.50	0.70	0.70	0.70
Hourly flow rate (vph)	13	1998	10	27	1174	8	2	0	40	11	0	20
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)					284							
pX, platoon unblocked	0.76						0.76	0.76		0.76	0.76	0.76
vC, conflicting volume	1182			2008			2690	3265	1004	2297	3266	591
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	603			2008			2591	3349	1004	2073	3351	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			90			76	100	83	39	100	98
cM capacity (veh/h)	736			281			8	5	240	18	5	822
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1				
Volume Total	13	1332	676	27	783	399	42	31				
Volume Left	13	0	0	27	0	0	2	11				
Volume Right	0	0	10	0	0	8	40	20				
cSH	736	1700	1700	281	1700	1700	104	49				
Volume to Capacity	0.02	0.78	0.40	0.10	0.46	0.23	0.41	0.64				
Queue Length 95th (m)	0.4	0.0	0.0	2.4	0.0	0.0	12.8	18.8				
Control Delay (s)	10.0	0.0	0.0	19.2	0.0	0.0	61.7	164.3				
Lane LOS	A			C			F	F				
Approach Delay (s)	0.1			0.4			61.7	164.3				
Approach LOS							F	F				
Intersection Summary												
Average Delay				2.5								
Intersection Capacity Utilization				63.5%			ICU Level of Service	B				
Analysis Period (min)				15								

Appendix E: PROPOSED ROADWAY CHARACTERISTICS AND PRIORITIES

Street	Class	Road Characteristics	Transit Service	Bicycle Facilities	Pedestrian Facilities	On Street Parking	Purpose and Priorities
Mount Seymour Parkway	Major Arterial and Major Road Network (MRN)	4 lanes (two per direction) with left and right turn lanes from Mt Seymour Parkway Bridge to Berkley Road No direct access for private properties	Route 211 Route 214	Eastbound and westbound painted bike lanes from Riverside Drive to east end of Study Area.	Sidewalks on north and south sides throughout Study Area.	No	Intended for regional movement of goods, transit, vehicles, cyclists, and pedestrians. All modes to be accommodated with focus on reginal travel.
Dollarton Highway	Major Arterial and MRN (west of Berkley Road) Minor Arterial and MRN (east of Berkley Road)	4 lanes - two per direction with left turn and right turn lanes from Highway 1 to Berkley Road 2 lanes – one per direction east of Berkley Road Limited direct private and business access.	Route 212 Proposed route for future frequent or rapid transit	Off street adjacent paths on north and south side of Dollarton Hwy for eastbound and westbound cyclists, from Old Dollarton Road to Road A	Off street paths adjacent to street on north and south sides from Old Dollarton Road to Road A	No	Intended for regional movement of goods and people. Planned disaster response route. All modes to be accommodated with focus on regional travel, especially transit and all ages and abilities cycling.
Riverside Drive	Major Arterial, MRN	2 to 4 lanes – 2 lanes from Mount Seymour Parkway to Front Street plus centre left turn lane / median. 4 lanes from Front Street to Dollarton Hwy - 2 lanes per direction.	Route 211 Route 214 Proposed route for future frequent or rapid transit	High priority regional and local cycling connection separated from traffic and suitable for all ages and abilities (based on this arterial's role in the regional cycling network). No cycling facility from Spicer Road to Front Street based on space constraints. Cycling accommodated on parallel route.	Sidewalks on both sides from Spicer Road to Mount Seymour Parkway. High priority pedestrian zone around Old Dollarton Road	No	All modes to be accommodated. Potential to consider removing MRN designation and dangerous goods route designation at some point in the future through consultation with TransLink. Possible through replacement in network with Berkley Road. High priority regional and local cycling connection separated from traffic and suitable for all ages and abilities. High priority pedestrian zone around Old Dollarton Road.
Berkley Road Extension	Possible Major Arterial (to be confirmed) with potential for MRN and Dangerous Goods Route designation	2 lanes – one per direction with left and right turn lanes at major intersections. Centre median / left turn lane throughout. Designed to accommodate potential future 4 lanes.	Possible future route for community or frequent transit	High priority regional and local cycling connection separated from traffic and suitable for all ages and abilities (based on this arterial's role in the regional cycling network). Strong connection to local and regional trail network is important.	Will support infrastructure for walking and provide an additional north-south connection in the Maplewood area. Strong connection to local and regional trail network is important.	No	Potential to become new dangerous goods route to transition heavy trucks and dangerous goods away from Riverside Drive. All modes to be accommodated. Maintain wider through lanes and left turn pockets to better accommodate goods movement and traffic. Design vehicle to be appropriate for industrial area. Separated cycling facilities high priority due to likely vehicle mix and grades.

Street	Class	Road Characteristics	Transit Service	Bicycle Facilities	Pedestrian Facilities	On Street Parking	Purpose and Priorities
Old Dollarton Road	Collector	2 lanes - one per direction along the entirety of Old Dollarton Road, with right turn at Riverside Drive and Dollarton Highway	Route C15 Possible future route for frequent or rapid transit. High quality rapid transit stop location at Riverside Drive.	Separated bicycle facility throughout.	Sidewalks on both sides throughout.	Design to look to accommodate parking pockets wherever possible.	Local shopping street with pedestrian-focused street-facing commercial. Local roadway with access to developments. On-street parking permitted where applicable. Cycling connection into the community to provide access to local shops and services. Goods movement restricted to local deliveries. East of Riverside, design to support 'artisan industrial' land use.
Front Street	Local	2 lanes - one per direction along all of Front Street	None	Neighbourhood bikeway.	Sidewalks along north and south side throughout.	On street parking on north and south sides throughout.	Local shopping street with some pedestrian-focused street-facing commercial. Local roadway with access to developments. Local movement for deliveries. Slow moving traffic with target operating speed of 30 km/hr. Goods movement restricted to local deliveries. Pedestrians, cyclists, goods movements, and vehicles to be accommodated. Cyclists, vehicles and goods movement are served within the same-right-of-way.
Windridge Drive	Lane / Local	1 lane – eastbound one-way street between Seymour River Place and Riverside Drive 2 lanes - one per direction east of Riverside Drive	None	Wide MUP on south side from Seymour River Place to Browning Place. Potential on-street bicycle accommodation	Wide MUP on south side from Seymour River Place to Browning Place. Sidewalk on north side east of Riverside Drive unless restricted by property.	Potential for school drop-off and off-hours parking bordering school between Seymour River Place and Riverside Drive. On street parking pockets on north and south sides of Windridge Drive in residential areas east of Riverside Drive	Local road intended to provide access to properties for vehicle traffic. Cycling roadway with traffic calming and posted speed of 30 km/hr. Intended to serve local and regional cyclists and pedestrians. Pedestrians and cyclists have first priority but fire truck capability for emergencies. Local traffic second priority. Goods movement restricted to local deliveries. Transit not permitted.
Munster Avenue	Local	2 lanes – one per direction throughout	None	Neighbourhood bikeway.	Sidewalks on one side.	No.	Local road providing improved east-west connectivity of road network between Seymour River Place and Riverside Drive. Pedestrians and cyclists have first priority. Local traffic second priority. Goods movement restricted to local deliveries. Transit not permitted.
Seymour River Place	Collector / Local	2 lanes - one per direction throughout	None	Shared bicycle lane (north) / neighbourhood bicycle route (south)	Sidewalk on both sides throughout.	On street parking pockets throughout.	Collector road providing access to the school and local properties. Traffic calmed and target operating speed of 30 km/h. Pedestrians and cyclists have first priority. Local traffic second priority. South of Old Dollarton becomes shared street.

Street	Class	Road Characteristics	Transit Service	Bicycle Facilities	Pedestrian Facilities	On Street Parking	Purpose and Priorities
Forester Street	Local	2 lanes - one per direction throughout	None	None	Sidewalk on east and west sides throughout	On street parking from on east and west sides throughout	Local road providing access to local properties for all modes. Provides a key access point for businesses and industries south of Dollarton Highway. Includes access for trucks, commercial vehicles, and employees.
Amherst Avenue	Local	2 lanes – one per direction throughout	None	Separated	Sidewalk on both sides throughout.	To be determined.	Local road providing access to local properties for all modes. Separated cycling to connect Village Centre to potential future water crossing and Spirit Trail.
Browning Place	Local	2 lanes- one per direction throughout	None	None	Sidewalk on east side south of Mount Seymour Parkway	Parking on east side between Windridge Drive and Mount Seymour Parkway	Pedestrians and cyclists have first priority. Local traffic second priority. Goods movement and transit not permitted.
Heritage Park Lane	Local	2 lanes – one per direction	None	None	Sidewalk on north side throughout.	No	Local road providing access to local properties for all modes. Serves as a turnaround for vehicles on Seymour River Place. AAA facilities for the west portion, where it is a local street bikeway and traffic calmed with a posted speed of 30 km/hr.
Spicer Road	Local	2 lanes – one per direction	None	None	Sidewalk on north side	Parking on both sides of the road	Planed local road to provide improved east-west connectivity of road network south of Dollarton Highway from Amherst Avenue to Riverside Drive. Goods movement and business/port access priority on the road portion – may have parallel MUP or protected bike facility.
Seymour Boulevard	Collector	4 lanes – two per direction between Mount Seymour Parkway and Keith Road E 2 lanes – one per direction south of Keith Road E	None	None	Sidewalks on east and west sides throughout	No	Collector road providing access to the businesses on both sides. All modes accommodated. Redesignate road classification if connected south to Main Street Interchange.
Road A	Possible Collector (to be confirmed)	2 lanes – on per direction	Possible future route	Separated bicycle facility throughout	Sidewalks on both sides	Yes.	Provides access for all modes to local properties and secondary connection between Berkley and Dollarton Highway.