TOWN OF CALEDON
PLANNING
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May 19, 2023

BA Group

CALEDON STATION SECONDARY PLAN

Transportation Study – Update

Prepared For: Caledon Community Partners

February 11, 2021 (formerly Macville Secondary Plan)
Updated: January 21, 2022
Updated: May 17, 2023

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1.0 INTRODUCTION

1.1 BACKGROUND

BA Consulting Group Ltd. represents the Caledon Community Partners for the Caledon Station (formerly referred to as Macville Community) lands for urban development including residential, commercial, mixed uses, community uses and related servicing and infrastructure. The lands subject to this proposal consist of approximately 182 hectares (450 acres) of land and are generally located north of King Street, east of The Gore Road and west of the CP Railway tracks. The subject lands are municipally known as 14396 Humber Station Road; 14384 Humber Station Road; 14226 Humber Station Road; 14206 Humber Station Road; 14196 Humber Station Road; 14166 Humber Station Road; 14100 Humber Station Road; 14042 Humber Station Road; 14155 The Gore Road; 0 The Gore Road; 0 The Gore Road; 14211 The Gore Road; 14275 The Gore Road; 0 Humber Station Road; 14389 The Gore Road; 0 King Street; 0 King Street; 7844 King Street; 7816 King Street; 0 King Street; 7640 King Street (herein referred to as the “Subject Lands”).

The site location is illustrated in **Figure 1.**

The Subject Lands are entirely within the Region of Peel’s 2051 Urban Area (ROP, Nov 2022) and the Region’s Major Transit Station Area (MTSA).

It is also important to note that on March 5, 2021, the Province of Ontario issued a Ministerial Zoning Order (‘MZO’) under Ontario Regulation 171 / 21 (‘O. Reg. 171 / 21’) for the Subject Lands. This MZO established two zones for the Subject Lands, a ‘Mobility Transit Hub Zone’ and ‘Mixed Use Residential Zone’. These Zone permit a) a public transit depot with accessory parking and service buildings as well as a variety of commercial, retail services and public uses; and b) a range of detached, semi-detached and townhouse dwellings as well as a range of mid-rise residential and commercial uses.

The analysis within this updated traffic analysis (consistent with prior studies submitted in February 2021 and January 2022) remains related to the entirety of the lands extending to Gore Road, including what was formerly outside of the ROPA 30 boundary and is now included in the ROP Urban Area.

The latest Secondary Plan framework is provided in **Appendix A.**

The site context is illustrated in **Figure 2**.

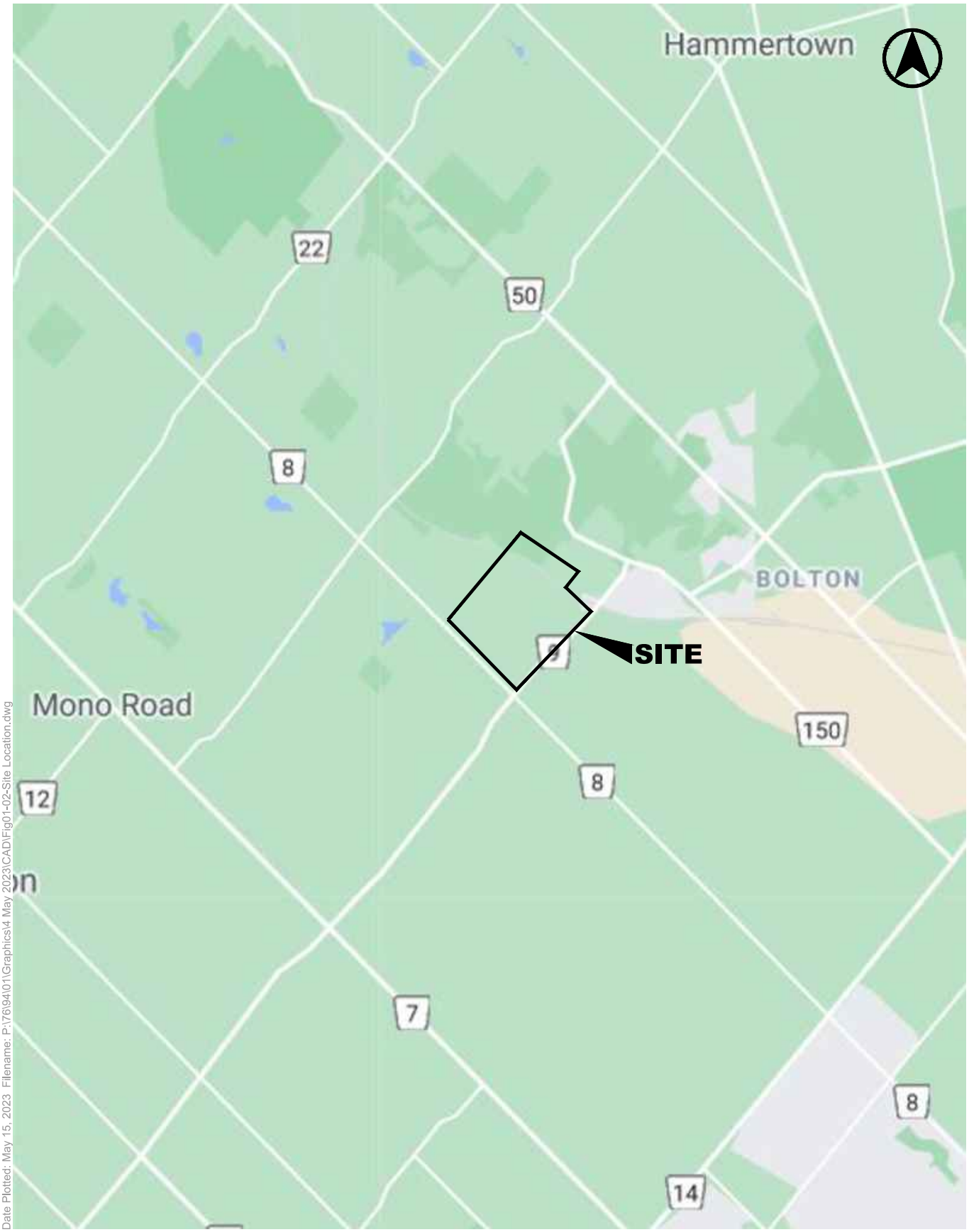

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FIGURE 1 SITE LOCATION

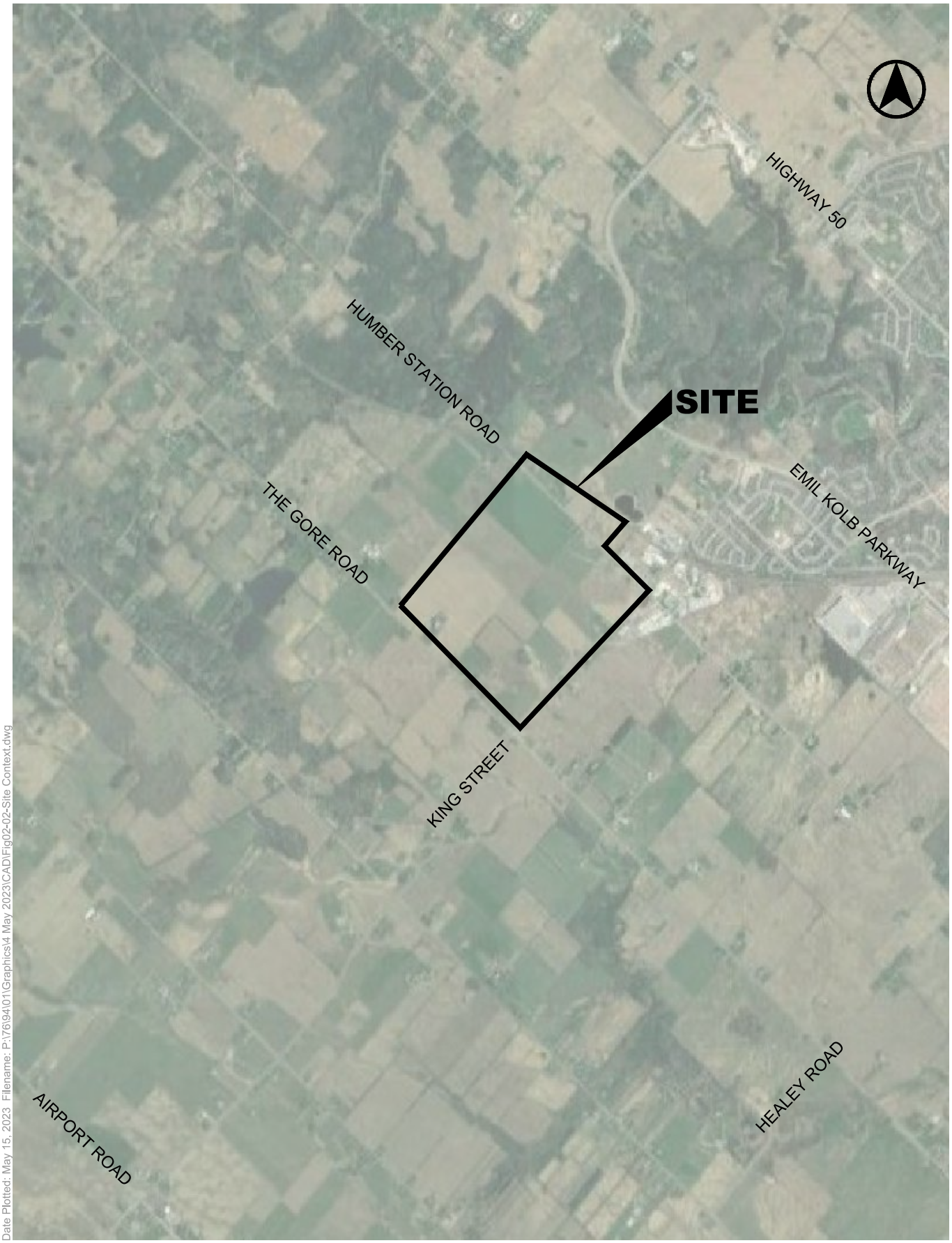

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FIGURE 2 SITE CONTEXT

1.2 THIS STUDY

This Transportation Study Report (the "Report") is an update to the report prepared in support of a Local Official Plan Amendment (LOPA, POPA 2021-0002) to establish a Secondary Plan for Caledon Station (formerly Macville) Community in Bolton. The Secondary Plan will facilitate the development of these lands for residential and mixed-use development with related complimentary uses, such as open spaces, parks, trails, commercial uses, the future GO Station, the Natural Heritage System (NHS), and stormwater management facilities.

This report has been prepared in support of the LOPA process to create the Caledon Station Secondary Plan for the subject lands.

The LOPA Transportation Study will focus on the impacts of the proposed community on the existing adjacent road network, namely King Street, The Gore Road, Humber Station Road, and Emil Kolb Parkway. There is a proposed new east-west road link connecting Humber Station Road directly to the future GO Station within the community via Emil Kolb Parkway which will also be assessed.

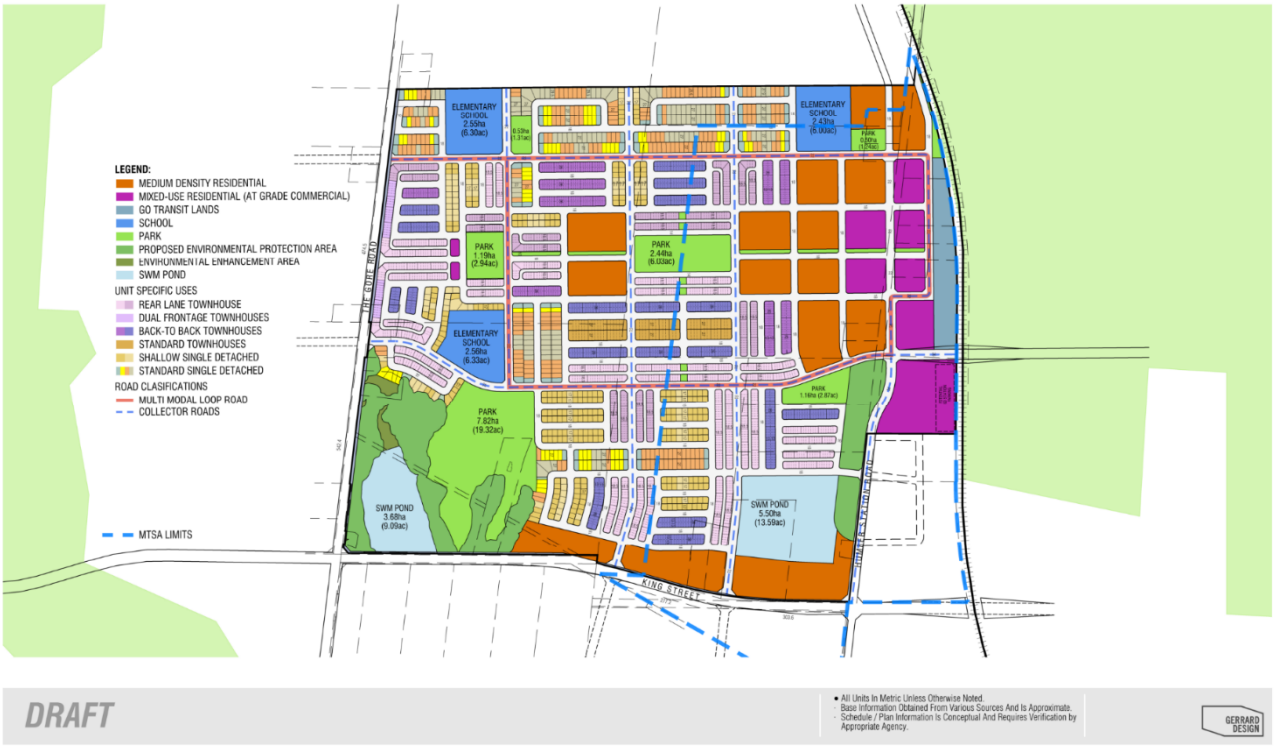
A Terms of Reference was circulated to the Town on December 16, 2020 identifying the scope of this study. A copy of the Terms of Reference is provided in **Appendix B**.

The transportation issues to be examined in this study are set out below.

- Arterial and collector road network requirements.
- Traffic controls at major road intersections.
- Roles of the arterial, collector and neighbourhood streets within the community.
- External arterial road and internal community road patterns.
- Traffic distribution.
- Transit and active transportation strategy to reduce single-occupant auto use during the peak periods and to optimize/minimize transportation infrastructure.
- Integration with GO rail transit and the resulting impacts on trip generation rates.
- Mode split assumptions for auto, transit, walk, and cycling.
- Bicycle routes and pedestrian trail network, and integration with the rest of Caledon.

1.3 PRELIMINARY FRAMEWORK PLAN

The group is proposing to construct a new mixed-use community, Caledon Station, on these lands, comprising of about 8,700 dwellings units. The community will also include three schools, retail and employment uses within the areas identified as mixed-use zones. The Secondary Plan Land Use Plan, Preliminary Framework Plan, and Road Hierarchy for Caledon Station are provided in **Appendix A**. The Framework Plan (May 2023) for entirety of the lands is also illustrated below.



The proposed Caledon Station Community is bounded to the east by the Canadian Pacific (CP) rail line. This line has been identified by the Province and is identified in the latest Regional Official Plan for future GO rail service to Bolton and as a Major Transit Station Area (MTSA). The location of the Caledon Station Community within this MTSA creates an opportunity to develop a transit oriented community that will create an ideal impetus for implementing this new GO line in a staged manner, providing a new level of transit service to not just the Bolton area but also to northeast Brampton, and communities such as Woodbridge, Vaughan, and Kleinburg in the west of York Region.

As such, it is critical that the design of this community be undertaken in a manner that promotes multi-modal, sustainable transportation that is not just focused on the future GO station, but leverages the opportunity to develop it as a key transportation hub servicing the broader Bolton and northeast Brampton areas.

This report provides a transportation perspective on the work that has been undertaken to develop this community, as well as a preliminary assessment of the impact of this development on the surrounding road network and the need for transportation network improvements to support the development.

2.0 EXISTING AND PLANNED AREA TRANSPORTATION CONTEXT

The area transportation context is described in this report section, including a description of existing conditions and planned improvements as contemplated in the Region OP, Town OP, and other studies where available. Reference to the Town's draft OP and draft MMTMP is also made, where applicable.

- The Region of Peel has updated their 2051 Official Plan (November 2022) to include Settlement Area Boundary Expansion (SABE) and an MTSA associated with a Caledon GO Station. The Region's latest Transportation Master Plan (RTMP) update is currently ongoing and will include SABE and other recent planning decisions.

- The Town of Caledon has prepared a draft Official Plan and draft Multi Modal Transportation Master Plan (MMTMP) that includes urban boundary expansion and an MTSA associated with a Caledon GO Station. The draft Official Plan and MMTMP are undergoing revisions to be completed in 2023 that will enable the Town to:
  - Undertake additional public and agency consultation;
  - Provide Caledon's Growth Concept directly to the province; and,
  - Innovate around key areas.

Roads within the Secondary Plan are subject to future detailed design and coordination with area growth related findings of the RTMP and MMTMP studies that are currently underway.

2.1 AREA ROAD CONTEXT

2.1.1.1 King Street

Existing

King Street (Regional Road 9) is a regional arterial that provides an east-west connection from Winston Churchill Boulevard at Peel Region's west boundary with Halton Region to Caledon King Townline South at Peel Region's east boundary with York Region. King Street continues through York Region as King Road.

At the west end of Bolton, King Street is separated into two sections approximately 1 kilometre apart, connected by Emil Kolb Parkway. The section of King Street to the east of Emil Kolb Parkway is herein referred to as the east section of King Street, whilst the section of King Street to the west of Emil Kolb Parkway will continue to be referred to as King Street for the purpose of this study.

King Street extends along the southern boundary of the site, along which it operates with a single traffic lane in each direction. Localized widening along King Street at The Gore Road provides for the provision of left turn lanes. King Street is classified in the Town of Caledon Official Plan as a medium capacity arterial.

Adjacent the site, King Street has a posted speed limit of 80 kilometres per hour. There are no sidewalks along King Street in the vicinity of the site. A level rail crossing is located on King Street between Humber Station Road and Emil Kolb Parkway, operating with crossing gates and flashing lights.

Planned
The Region OP identifies King Street as a Major Road with mid-block right-of-way requirements of 30 metres (Schedule F-3) plus additional property dedication up to 35.5 metres (Policy 7.10.13).

A rail grade separation of King Street has been planned by Peel for over 10 years and is also identified as a project in the current Region of Peel Development Charges Bylaw, with an estimated capital cost of $15 million, and an estimated completion date of 2026. The update to this DC Bylaw (which is currently underway) identifies an estimated capital cost of $22 million for this crossing, and an estimated completion date of 2027. A more detailed description of planned road-rail grade separations is provided in *Section 4.3 - Road-Rail Grade Separations.*

2.1.1.2 The Gore Road

Existing
The Gore Road (Regional Road 8) is a north-south regional arterial extending from Highway 9 at Peel Region's north boundary with Simcoe County to Highway 50 at Peel Region's east boundary with York Region.

The Gore Road extends along the western boundary of the site, along which it operates with a single traffic lane in each direction. Localized widening along The Gore Road at King Street provides for the provision of left turn lanes. The Gore Road is classified in the Town of Caledon Official Plan as a medium capacity arterial.

Adjacent the site, The Gore Road has a posted speed limit of 70 kilometres per hour. There are no sidewalks along The Gore Road in the vicinity of the site.

The King Street / The Gore Road intersection is signalized.

Planned
The Town draft MMTMP has identified a new east-west collector road extending west from Emil Kolb to west of The Gore Road (draft MMTMP, PIC#2).

The Region OP identifies The Gore Road as a Major Road with mid-block right-of-way requirements of 30 metres (Schedule F-3) plus additional property dedication up to 35.5 metres (Policy 7.10.13).

2.1.1.3 Humber Station Road

Existing
Humber Station Road extends from Highway 9 at Caledon's north boundary with Simcoe County to Mayfield Road at Caledon's south boundary with Brampton.

Humber Station Road extends partially along the site's eastern boundary and partially through the site, where it operates with a single traffic lane in each direction. Humber Station Road is classified in the Town of Caledon Official Plan as a collector.

There are no sidewalks along Humber Station Road in the vicinity of the site. A level rail crossing is located on Humber Station Road to the north of the site, operating with flashing lights. North of the site, Humber

Station Road also experiences several grade changes and curves (posted as reduced visibility) as it traverses through the Greenbelt lands.

The King Street / Humber Station Road intersection is signalized.

Planned
The Town has identified Humber Station Road as a 26 metre collector in its in-force OP and redesignates Humber Station Road as a 4-lane arterial with a 36 metre right-of-way in its draft OP. Specific road cross sections have been developed by the Caledon Station team to support all modes of travel and to support continued development of a road network within Caledon Station that promote continuous and connected active transportation and transit supportive facilities. Among these, are a 26 metre proposed cross-section for Humber Station (from King Street to the GO Station) and 22 metre collector roads elsewhere throughout. See Section 4.2 for further details on proposed Community Cross Sections.

The Town's draft MMTMP (PIC #2) also identifies Humber Station Road to have separated cycling facilities in future.

2.1.1.4 Emil Kolb Parkway

Existing
Emil Kolb Parkway (Regional Road 150) is an arterial connection extending between Highway 50 to the north of Bolton and the east section of King Street in the west end of Bolton. Emil Kolb Parkway continues south of the east section of King Street as Coleraine Drive.

In the vicinity of the west section of King Street, Emil Kolb Parkway operates with two traffic lanes in each direction. Further north of the west section of King Street, Emil Kolb Parkway reduces to a single traffic lane in each direction. The Town of Caledon Official Plan identifies Emil Kolb Parkway as an arterial route.

In the vicinity of the west section of King Street, Emil Kolb Parkway has a posted speed limit of 60 kilometres per hour. There are no sidewalks along Emil Kolb Parkway to the north of the west section of King Street, whilst a sidewalk is provided on the west side of Emil Kolb Parkway to the south of the west section of King Street.

The King Street / Emil Kolb Parkway intersection is a roundabout.

Planned
The Town draft MMTMP has identified a new east-west collector road extending west from Emil Kolb to west of The Gore Road (draft MMTMP, PIC#2).

2.1.1.5 New East-West Collector Road

The Town draft MMTMP has also identified a new east-west collector road extending west from Emil Kolb to west of The Gore Road (draft MMTMP, PIC#2).

A more detailed description of planned road-rail grade separations is provided in *Section 4.3 - Road-Rail Grade Separations.*

2.2 AREA TRANSIT CONTEXT

Existing

Bolton is serviced by a single bus route in the AM and PM peak hours, operated by Voyago. The nearest stop on the route is approximately 2 km southeast of the site.

Existing GO Services on the Caledon GO bus route 38 are accessible through stops along Highway 50, approximately 3 kilometres to the east of the site. GO bus route 38 provides access to Malton Station on the Kitchener GO Train Line.

Planned

Both the Region's OP and Town draft OP have included a future MTSA and GO Station within the site lands to serve future GO rail service.

In addition to the future GO Station, the Town has also identified several opportunities for transit routing in the draft MMTMP 2051 Transit Network (PIC#2), including along The Gore, Emil Kolb Parkway, King Street, Humber Station Road.

The Town of Caledon has also identified in their draft MMTMP (PIC #2) the need for a Transit Strategy Study to establish a governance structure and develop a 5-year service plan.

2.2.1 Mode Share Targets

While Region of Peel's latest Transportation Master Plan (RTMP) update is currently ongoing and will include SABE and other recent planning decisions, their current RTMP (2019) envisions the following mode share targets for 2041 in Caledon as part of their 50% sustainable mode share targets for the Region:

Peel Region Mode Share Targets for Caledon (2019 RTMP):

- 68.1% driving
- 3.6% walking
- 0.8% cycling
- 2.5% transit
- 9.9% carpool
- 15.1% other

The Town of Caledon TMP (2017) identifies that 89% of all existing trips are auto (driver and passenger), while 11% of trips are made by other modes.

The Caledon Station MTSA is an ideal area to build infrastructure that will directly encourage the transit and non-auto trips in alignment with the Region's targets for non-auto mode share and Caledon's plans to increase transit service within key areas of the community.

3.0 CALEDON STATION COMMUNITY TRANSPORTATION CONTEXT

3.1 A NEW GO RAIL LINE

The impetus for the development of a community in this location is both its proximity to the existing community of Bolton and its direct adjacency to the CPR MacTier subdivision. This key rail line located along the east boundary of the proposed Caledon Station Community, carries exclusively freight rail traffic today. In 2010, Metrolinx completed the *"Bolton Commuter Rail Service Feasibility Study"* which explored options for developing GO service in this corridor. The report concluded that such a service was entirely feasible. The Caledon Station team has since built on the Metrolinx findings to determine that such a service can be implemented in a staged fashion, starting with peak period peak direction service on the existing rail line with minimal infrastructure improvements required, and ultimately building up to a full service line as the community grows and the ridership demand warrants.

The Caledon Station team has also been actively engaged with the Town and Metrolinx on Station Area planning workshops to identify how the lands at the future GO station could be envisioned in the short and long-term.

Most recently, the Region has identified the subject lands as part of the 2051 Urban Area and has identified Caledon Station in their Official Plan (OP) as a future GO station and Major Transit Station Area (MTSA). The Town, in it's draft OP and draft Multimodal Transportation Master Plan (MMTMP) has also identified the future GO station and MTSA.

The implementation of a new high order regional rail service creates an opportunity to develop the lands adjacent to the future station in a transit supportive manner. This opportunity extends to supporting the clean environment & sustainable development initiatives of the Province of Ontario, the Region of Peel, and the Town of Caledon.

The opportunity for the Caledon Station team is therefore to design and implement a community that doesn't just support transit, but integrates into the design of the entire community by:

- facilitating alternative modes of transportation;
- encouraging alternative transportation behaviours;
- encouraging clean transportation technologies; and
- new and advanced technologies that promote the above.

3.2 CALEDON STATION TRANSIT HUB

The development of the future GO station on the will be the centrepiece of the community's transit infrastructure, as well as a focus for active transportation modes.

Major transit station areas (MTSAs) are typically supported by robust active transportation connections, an appropriate mix of commercial uses, and higher density residential and employment uses. Within the context of Caledon Station, it is appropriate to locate the transit terminal in a location that accommodates intra and inter-city transit services and associated transfer activity, in proximity to public amenity, and high density and mixed land uses.

In addition to GO Rail service, an onsite bus terminal will support GO bus services such as the existing Bolton service (run by Brampton Transit). It is anticipated that as the community develops, additional bus connections to the station will be established by Brampton Transit. Such a service could operate on the existing north-south routes connecting Brampton to this area, namely Highway 50/Coleraine Drive, or ultimately Humber Station Road as development proceeds. As the GTA West corridor is implemented with an integral transitway corridor to the south of Caledon Station Community, the presence of a full interchange at Gore Road and Humber Station Road will also provide an additional opportunity to connect Caledon Station to the broader GTA wide transit network.

These north-south routes will also directly serve the existing and growing Provincially Significant Employment Zone (PSEZ) located between Caledon Station Community and Mayfield Road. Not only will these bus services provide employees in the PSEZ convenient access to high order rail transit, they will allow existing residents of the Bolton area and future residents of Caledon Station to commute to work by transit instead of driving.

The Town of Caledon does not currently operate a bus transit service in the Caledon Station area, but the opportunity presented by this Bolton transportation hub provides impetus to initiate such a service in the Caledon Station community, such as:

- Extension of Brampton Transit (currently operating in Bolton);
- Extension of GO bus services (currently terminating in Bolton) and/or;
- New Shuttle / Bus Services connecting to Bolton and Brampton.

The Town has also identified several opportunities for transit routing in their draft MMTMP 2051 Transit Network (PIC#2), including along The Gore, Emil Kolb Parkway, King Street, Humber Station Road and the future GO rail line.

Cross-sections for all collector roads within the Caledon Station have been developed to account for implementation of bus service, further described in Section 4.2.

Potential connecting routes and looping routes within the Caledon Station Secondary Plan area are identified in concept on the Road Hierarchy plan (provided in Appendix A), which would provide extensive coverage (400 metre walking distance or less) for for all future residents of the community to local bus or shuttle service connecting to Caledon GO Station and Bolton/Brampton.

3.3 CYCLING

The future GO station will also become the focus of active transportation infrastructure. The community road network will support cycling on all of the collector roads. The goal of this network is to connect the community to the transit facilities at the GO station, to arterial networks, to destinations within the neighbourhood, and to trail connections as conveniently and safely as possible.

As a community, Caledon Station will be a designed to fully support several types of cycling.

Recreational cycling connections will allow residents to fully utilize existing and future cycling facilities along Emil Kolb Parkway, the Humber Valley Heritage Trail, the Caledon Trailway and facilities in the Bolton Resource Management Tract (TRCA) located immediately north of Bolton and Albion Hills Conservation Area.

Short distance commuting by bicycle will be accommodated by the network of cycle lanes and paths associated with the arterial, collector and off-street network.

Longer distance commuting by bicycle will be accommodated by connections from the community to existing and future cycling infrastructure developed by the Region of Peel (such as the paved multi-use trails on Emil Kolb Parkway) and the Town of Caledon. The Region of Peel Long Range Transportation Plan also identifies King Street, The Gore Road, and Coleraine Drive as part of the proposed Cycling Network (LRTP, Figure 3-5). The Town's TMP (and draft TMP) identifies proposed active transportation facilities along Humber Station Road, and illustrates the Region's plans on The Gore Road, King Street, Emil-Kolb (existing multi-use trail), and Coleraine Drive.

Design and development of the Caledon Station cycling infrastructure will be done so as to be consistent with and coordinated with (as appropriate) Region of Peel active transportation initiatives such as Walk+Roll as well as Town of Caledon initiatives and guidelines.

As opportunities present themselves, initiatives such as bike sharing can be accommodated onsite at the future GO station, as well as other nodes within the community as appropriate.

3.4 PEDESTRIAN

Pedestrian traffic will be accommodated as in all communities by the presence of sidewalks on every collector and local road. What will set Caledon Station apart is:

- A focus on pedestrian safety at intersections.
    - Road cross sections are being proposed that minimize crossing distances.
    - Roads are generally developed to minimize vehicular speeds through the neighbourhoods, which inherently enhances pedestrian safety.
    - Pedestrian crossings will be prioritized at signalized intersections and along major active transportation routes.
- Exploration of the use of “living street” designs in selected locations to promote safe multi-modal travel

As with the cycling network, the focus of pedestrian movement will be safely and conveniently accessing the future GO Station.

Caledon Station is located immediately adjacent to a number of recreational hiking areas including the Humber Valley Heritage Trail and the Bolton Resource Management Tract, both located directly north of Caledon Station and Bolton. Active transportation connections from Caledon Station to Emil Kolb Parkway as well as to the section of Humber Station Road to the north of Caledon Station will allow ambitious hikers to access these greenbelt resources directly from their homes.

3.5 ADVANCING TECHNOLOGY

The Caledon Station design team is contemplating the manner in which new and advanced transportation technologies might be incorporated into and supported by the community.

3.5.1 Electric Vehicles

Electric vehicle (EV) charging stations are proposed to be implemented within residential, mixed use, and retail developments that have shared parking facilities so as to meet to meet or exceed current bylaw requirements. Charging stations will also be a key feature at the future GO station.

3.5.2 Ride Sharing

While ridesharing services (such as Uber and Lyft) are no longer new technologies per se, they are technologies that can be explicitly recognized and accommodated in higher density residential sites, in particular, can be done so as to accommodate space for ridesharing services to pick up or deliver passengers without impeding other users of the community's streets.

3.5.3 Car Share

As opportunities present themselves, initiatives such as car sharing can be accommodated on-street, at the future GO station, as well as other nodes within the community as appropriate to support future car-share services that allow access to a car for occasional trips without reliance on auto-ownership for everyday commuting.

3.5.4 Micro Transit

Of particular interest to the Caledon Station team is the prospect of being able to operate "Micro Transit" (conventional or autonomous). This service would connect the entire community to the future GO Station.

A system such as this could be deployed in a number of ways:

- operated on a predetermined schedule and set of routes; and/or
- implemented as an on demand service.

A micro-transit service is appropriate for a transportation hub based community, where the goal is to provide a clean and efficient travel option to move passengers between their homes and the GO transit hub.

4.0 PROPOSED MOBILITY NETWORK

The proposed Caledon Station Community mobility network is comprised of a hierarchy of arterial, collector and local roads. Specific road cross sections that have been developed by the Caledon Station team to support all modes of travel and to support continued development of a road network within Caledon Station that promotes continuous and connected active transportation and transit supportive facilities.

The mobility network provides:

- **connectivity to the existing higher order road network**, including regular collector road spacing along Regional Roads that's appropriate to extend into the urban boundary expansion areas north, west, and south of the community;
- an **internal grid-network** of collector roads that is direct, while providing distributed access and redundancy within the community;
- **convenient and direct access to the significant transit** facilities along collector roads (notably the Mobility Ring Road) and centred on the future GO station;
- **a complete active transportation network** with facilities on every collector roadway within the community that will facilitate both internal movement and connectivity to planned external gateways and trails.

Key to the transportation infrastructure proposed for the community is:

- the layout of roads to provide direct and distributed access;
- the specific road cross sections that have been developed by the Caledon Station team to support all modes; as well as,
- a pair of road-rail grade separations that will provide direct connectivity between Bolton and the future GO Station.

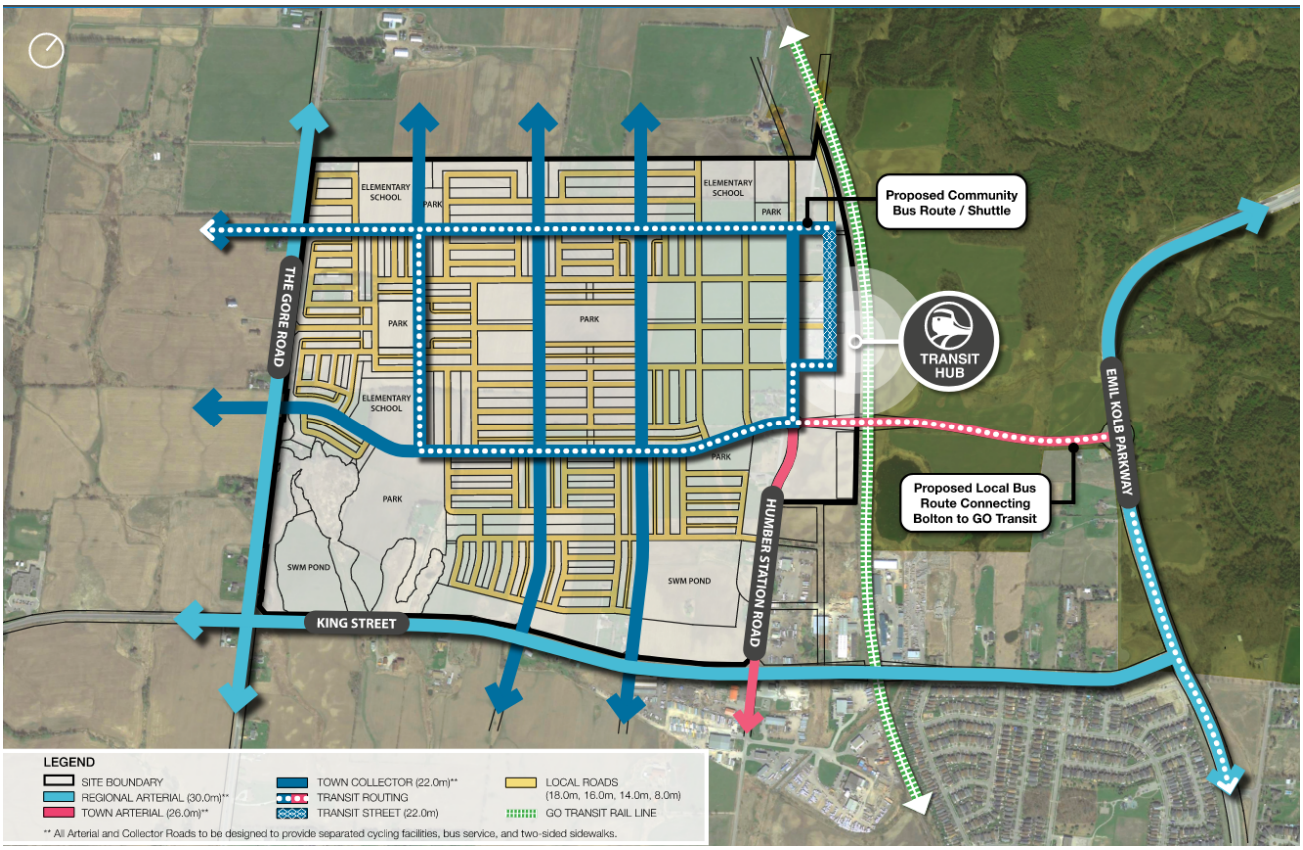
The Road Hierarchy and Mobility Network for Caledon Station is described in this section and provided in **Appendix A**, including individual road cross-sections.

4.1 COMMUNITY ROAD NETWORK

Throughout the network, thought has been given to prioritizing active transportation facilities on key routes, and in a manner that allows users to move to key destinations quickly and conveniently. At the same time, the lanes provided for automobile traffic have been kept to a minimum so as to reinforce and promote alternative modes of transportation.

A key feature is a Multi-Modal Mobility Ring Road that serves the entire community and provides important direct access to the entire frontage of the GO station transit hub. This road will carry automobile and internal transit vehicular traffic, and includes a dedicated 2-way cycle track and double sidewalks. This ring road also provides a key connection to The Gore Road to the west, and to Humber Station Road which is a key connection to the south and southeast.

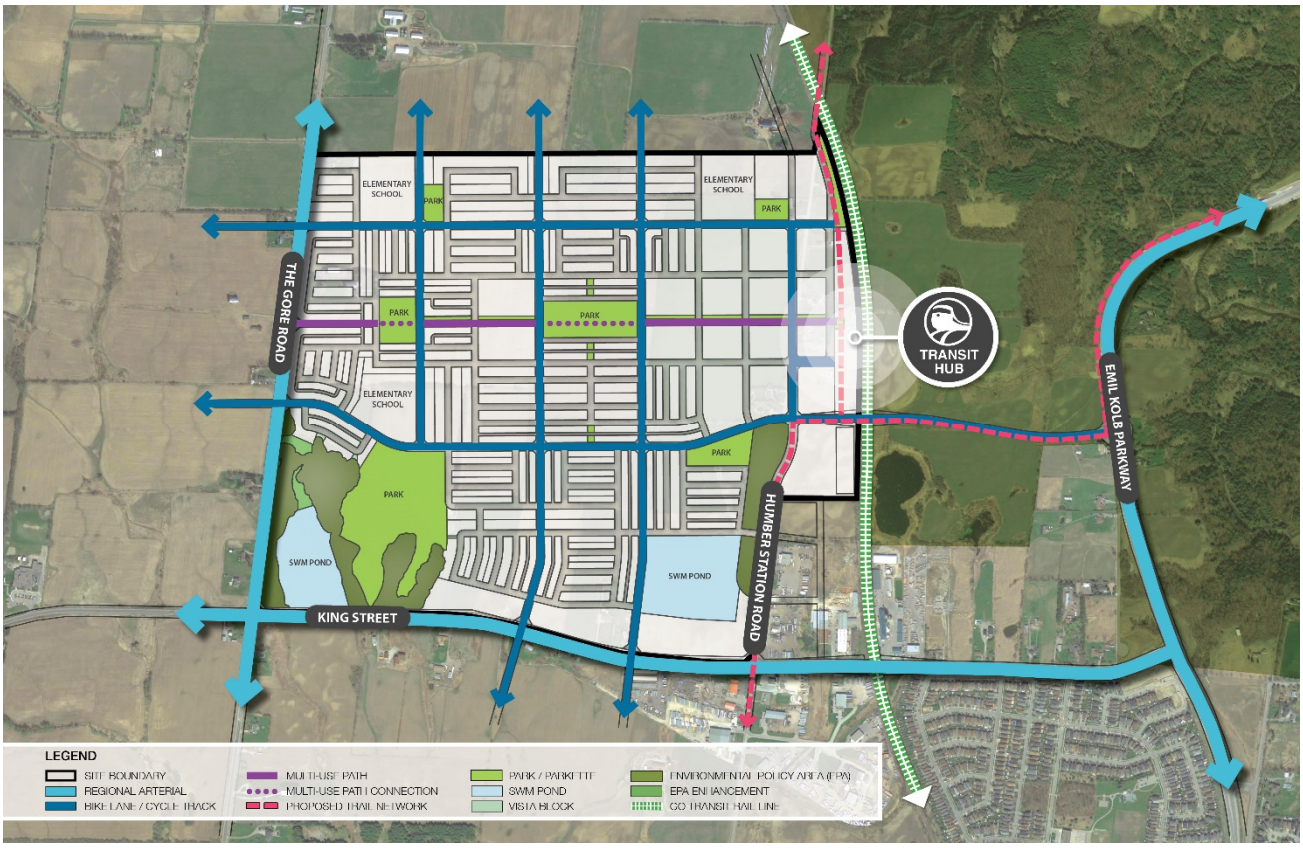
A potential looping route within the Caledon Station Secondary Plan area identified in concept on the Road Hierarchy plan (provided in Appendix A and below), would provide extensive coverage (400 metre walking distance or less) for all future residents of the community to access local bus or shuttle service connecting to Caledon GO Station and Bolton/Brampton.



A north axis is defined by Humber Station through the core of the community on the more densely built eastern area (adjacent to the GO station transit hub).A new east-west collector connection is proposed to tie the community to Emil Kolb Parkway, consistent with the road link envisioned in the draft MMTMP. This important link will provide access to the GO station transit hub for traffic originating outside of Caledon Station, in the Bolton North Hill area and beyond. This link, which will be grade separated from the CP rail

line, will provide a completely new route to the GO Station and Caledon Station itself, providing access for much of the external automobile and bus traffic without impacting the internal community roads. This link will also limit additional traffic demands on King Street and the intersections to the south of the Caledon Station during peak periods.

The Active Transportation Network (provided in Appendix A and below) is designed to fully support several types of cycling. In addition to providing area cyclists with convenient access to the GO Station, the east-west connecting collector it will allow cyclists from across the region to take advantage of the GO train service to gain access to the excellent existing cycle facilities in this area, including the Humber Valley Heritage Trail, and the Caledon Trailway and facilities in the Bolton Resource Management Tract (TRCA) located immediately north of Bolton and Albion Hills Conservation Area.



Alternative design standards are proposed for the arterial (Humber Station) and collector road cross-sections within Caledon Station. See Section 4.2 for a description of the proposed arterial and collector cross-sections. The transit hub is further envisioned to have parking facilities at the north and south ends of the Hub, to further encourage active transportation in the core of the MTSA and discourage most of the GO train commuter parkers from entering the hub area with their personal vehicles.

North of the site, at the urban boundary limits - Humber Station is proposed to continue in its current condition. Collector connections have been identified to the east, northwest, west, and south where other urban expansion lands (and future GO ridership catchment areas) are identified within the ROP and draft OP. This also plans for minimal disruption on either side of Humber Station where it traverses the Greenbelt lands.

4.2 COMMUNITY ROAD CROSS SECTIONS

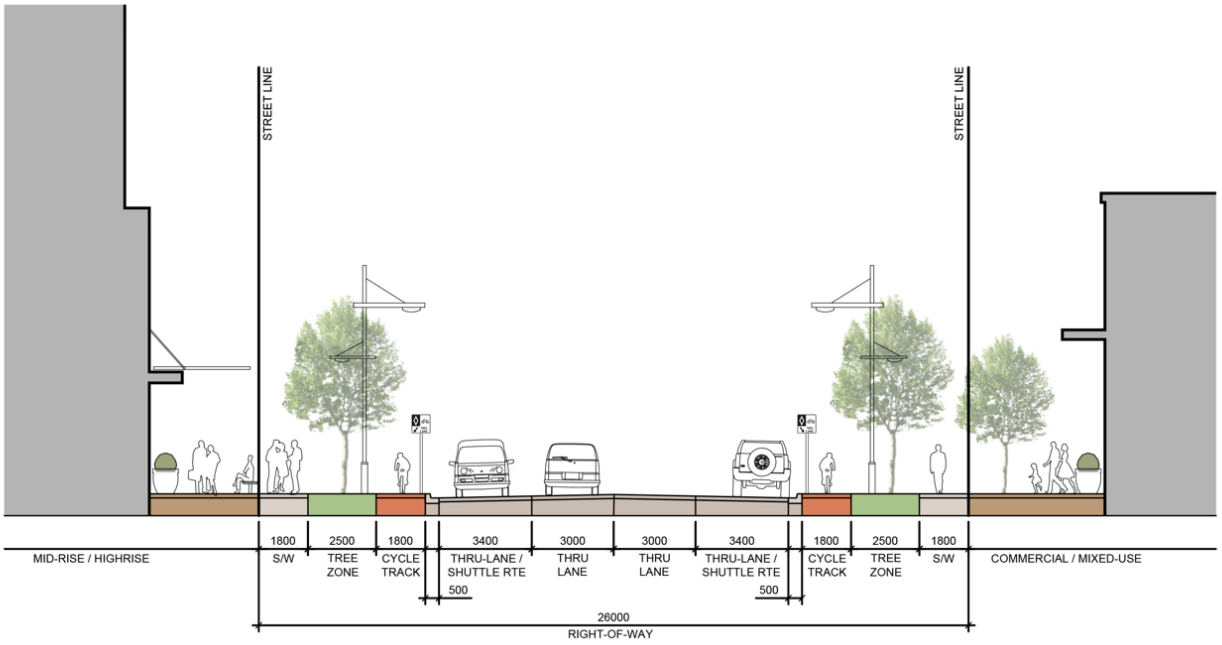
The community road network will be comprised of a hierarchy of roads that are custom tailored to the various demands placed on them. This has meant re-thinking the cross sections typically used in communities that do not have such a transit and active transportation focus.

4.2.1 Major Collector Roads

4.2.1.1 Humber Station Road and East-West Link Road

Humber Station Road and the East-West Link Road will be the major connections from the heart of Caledon Station to the south. These roads are designed to accommodate larger volumes of traffic in a 26 metre right-of-way to/from the community, allow for transit vehicles on regular service and up to four lanes of traffic in 12.8 metres of pavement. Additional pavement is anticipated to be required for left turns at key intersections. Due to the need to move more traffic on these roads, no provision is made for layby parking.

Cyclists on Humber Station are accommodated in dedicated 1.8 m cycle tracks on each side of the road and pedestrians on 1.8 m sidewalks on each side. Sidewalks are proposed on one side of the East-West Link Road with a multi-use path on one-side.



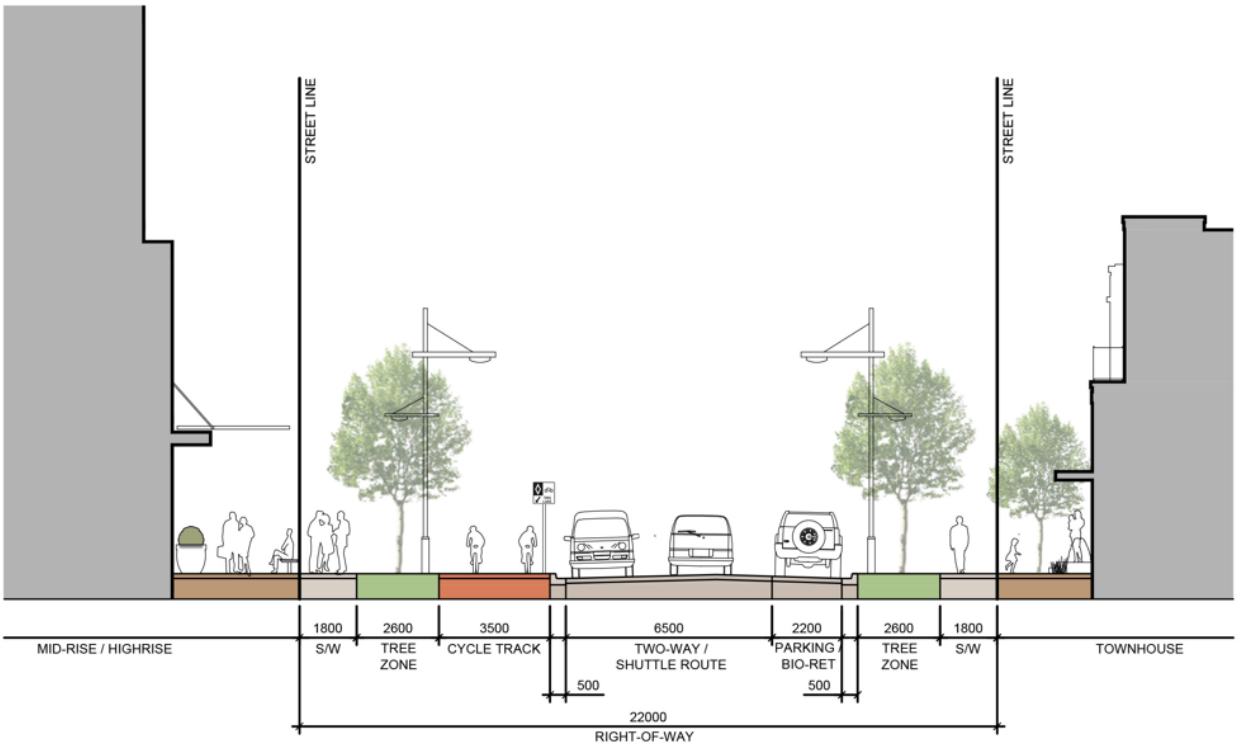
4.2.1.2 Collector Roads, Including Multimodal Ring Road

The design being considered for collector facilities fits in a 22.0 m right of way, and is key to facilitating community connectivity to the GO station transit hub and between school and park zones throughout the Secondary Plan.

Cyclists are provided with a two-way 3.5 m cycle track on one side of the roadway. Positioning the cycle track on the opposite side of the roadway from the layby parking lane ensures that conflicts between passengers egressing from parked cars and cyclists will not be a problem.

The cross section also provides full 1.8 m sidewalks on both sides, and appropriate landscaped areas separating the cyclists from the pedestrians.

The roadway is provided with 8.7 m of pavement (9.3 m travelway). On-street parking is recommended to be prohibited with signage or bump outs at intersections where bus stops and pads are positioned to allow for a clear width of 7m (3.5 m travel lanes) for buses.

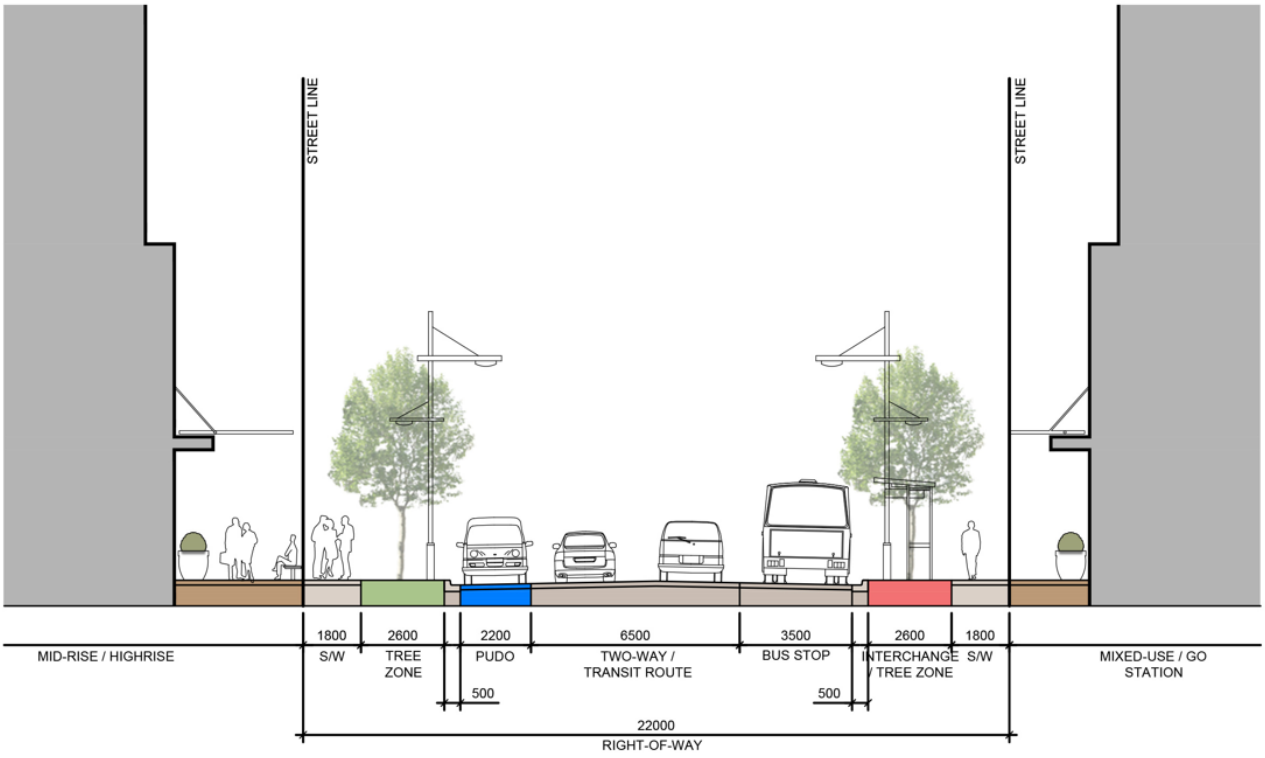


4.2.1.3 Transit Street

The design being considered for a segment of collector within the Transit Hub is key to facilitating lay-by bus stop and parking / pick-up drop-off activity within the Hub. Cycling is not contemplated within this section, given there are direct cycling connection provided to/from the GO station itself and a parallel north-south cycling connection provided along Humber Station Road.

The cross section also provides full 1.8 m sidewalks on both sides.

The roadway is provided with 12.2 m of pavement (12.8 m travelway). On-street parking is positioned opposite bus lay-bys to limit interaction between buses and passenger vehicles and provide direct access from community bus stops and the Interchange Zone with the future GO Station..



4.2.2 Local Roads

There are three cross-sections widths proposed for local roads: 18 m, 16m, 14m, and 8m laneway. The typical 18m and 16m local roads applied throughout are consistent with Town Standard No. 202 and No. 201, respectively. The 8m laneway standard is consistent with Town Standard No. 200.

In a few select locations along the central park elements of the framework plan, linear park elements have been added adjacent to an 18m local road, or within a one-way proposed 14m local road to respond to context of the park system and to deliver a recreational multi-use trail facility that weaves through the east-west park system into the Mixed Use Hub.

A full set of local road cross-sections, prepared by NAK, have been included in **Appendix C**.

4.3 ROAD-RAIL GRADE SEPARATIONS

In addition to the internal community roads there are two specific pieces of infrastructure that are required to ensure that the Caledon Station Community is appropriately accessible and connected to the existing road network and the community of Bolton. These are road-rail grade separations on the two key east-west roads that serve the community and that cross the CP MacTier subdivision rail line. The purpose of a road-rail grade separation is simply to eliminate the potential conflict between road vehicles and rail traffic. In this manner two important objectives are achieved:

- the elimination of rail related delays as vehicles wait for trains to pass; and
- the elimination of any risk of collision between road vehicles and rail traffic.

In addition to these general objectives for the roadways that cross the rail line, in the case of the Caledon Station Community there is an additional specific need, which relates to the provision of reliable emergency service (EMS) access. The nearest existing and planned stations are located within the community of Bolton, which lies to the east of the CP rail line.

As described in more detail below (Section 4.3.1), the Region has already planned for the road-rail grade separation of King Street and currently identifies that project for 2027 completion in their Development Charges Bylaw. The draft Secondary Plan policy directives also have been crafted to permit fire or ambulance/EMS facilities in any land use designation within the Secondary Plan, to allow for flexibility in the event the municipality decides to advance such facilities within the Secondary Plan.

4.3.1 King Street Grade Separation

The King Street corridor to the south of Caledon Station is the primary existing east-west road connection in the area. It provides access to Bolton, as well as to Coleraine Drive, which becomes Emil Kolb Parkway to the north of King Street and is configured as a north-south bypass of Bolton.

Between Humber Station Road and Emil Kolb Parkway, King Street currently crosses the CPR line at a level crossing. As an important future link between Bolton and Caledon Station and Urban Growth communities, it will be vital that this crossing be grade separated. This particular grade separation of King Street from the CPR MacTier Subdivision is a project that has been identified as being needed for over 10 years. The *Bolton Commuter Rail Feasibility Study* completed by Metrolinx in 2010 concluded that this grade separation was already warranted on the basis of existing traffic and train volumes and the arterial classification of King Street (pg 85, para 1):

> *"The exposure index indicates that grade-separation is needed now. The arterial classification of this two-lane road also supports grade separation."*

A 2014 Region of Peel Recommendation Report, completed as part of the *Goods Movement Study*, studied 12 at-grade rail crossings on Peel roads using 9 criteria, with a view to prioritizing those locations that came closest to warranting grade separation. This study found that the King Street rail crossing was one of 2 high priority locations identified as being needed in the near term, and recommended proceeding with a Feasibility Study.

A further *Feasibility Assessment* of the 2 high priority locations was completed in 2015 by CIMA. This study concluded that a grade separation on King Street had the highest cost-benefit ratio of the options considered. It recommended proceeding with an Environmental Assessment, which if initiated immediately, could mean that the grade separation would be completed in about 5 years.

This King Street rail grade separation was also identified as a project in the current Region of Peel Development Charges Bylaw, with an estimated capital cost of $15 million, and an estimated completion date of 2026. The update to this DC Bylaw identifies an estimated capital cost of $22 million for this crossing, and an estimated completion date of 2027.

4.3.2 East-West Road Link Grade Separation

The second road-rail grade separation related to Caledon Station will be where the future east-west road connection connecting Emil Kolb Parkway to Humber Station Road crosses the CPR line, adjacent to the future GO transit station.

The purpose of this road link is to provide an alternative route to connect the GO transit station to the Bolton area and beyond. This will also provide some redundancy in the road network in this area, ensuring that vehicular access to the station is not constrained to a single route and providing drivers with alternative routes in potentially busy peak periods. It will also provide a route for traffic external to Caledon Station to bypass the active transportation friendly corridors within the community as far as possible.

Given the volume of peak period traffic on this proposed east-west link road, and the importance of this line as a freight traffic line in addition to the future GO Rail service, CPR will likely insist that this road be grade separated from the rail line.

A grade separation for the East-West Road Link is also completely consistent with the objectives for the Caledon Station Community. To be consistent with the active transportation and pedestrian friendly nature of the community, the proposed road network in the core area around the GO transit station has a relatively limited capacity to move vehicular traffic. It is anticipated that under normal circumstances, the road network will move an appropriate amount of vehicular traffic, while at the same time ensuring that transit and active transportation users are fully supported. However, a level rail crossing at this location would mean that every time a train passes, traffic would queue up right back into the core of the community, blocking roads and intersections, and negatively impacting bus transit and active transportation users.

As such the importance of this road necessitates that it be grade separated from the CP line for the same reasons as the King Street crossing.

5.0 TRAFFIC VOLUME PROJECTIONS

5.1 SCOPE

Analysis has been completed for the following scenarios during the AM and PM peak hour:

- Existing Conditions
- Future Background Conditions (20 year horizon – 2041)
- Future Total Conditions (20 year horizon – 2041)

Intersections included within the analysis study area are listed below:

Existing Intersections

- King Street / The Gore Road (Signalized);
- King Street / Humber Station Road (Signalized);
- King Street / Emil Kolb Parkway (Unsignalized – Roundabout);

Proposed Intersections

- Emil Kolb Parkway / GO Station access (Unsignalized – Roundabout);
- King Street / Street JJ (Signalized);
- King Street / Street I (Signalized);
- The Gore Road / Street A (Signalized);
- The Gore Road / Street DDD (Unsignalized); and
- The Gore Road / Street Y (Signalized).

Internal Road Network

- Humber Station Road / Street EE (Signalized);
- Humber Station Road / Street Y (Signalized);
- Humber Station Road / Street E (Signalized);
- Humber Station Road / Street A (Unsignalized);
- Street A / Street I (Unsignalized);
- Street A / Street JJ (Unsignalized);
- Street A / Street VV (Unsignalized);
- Street Y / Street I (Unsignalized);
- Street Y / Street JJ (Unsignalized);
- Street Y / Street VV (Unsignalized);
- Street EE / Street I (Unsignalized); and
- Street EE / Street JJ (Unsignalized).

Existing lane configurations are shown in **Figure 3** and future lane configurations are shown in **Figure 4**.

5.2 EXISTING TRAFFIC VOLUMES

Existing peak hour traffic volumes have been established based on traffic counts undertaken by Spectrum Traffic Data on behalf of BA Group. The intersections which were counted are summarized in **Table 1**.

Existing traffic volumes are shown in **Figure 5** and the raw data is attached in **Appendix D**.

TABLE 1 EXISTING TRAFFIC DATA SOURCES

Intersection	Count Date	Count Times	Source
King St / Emil Kolb Pkwy	Tuesday, April 12, 2022	7:00am-9:00am 4:00pm-6:00pm	Spectrum Traffic Data
King St / The Gore Rd			
King St / Humber Station Rd			

5.3 FUTURE BACKGROUND TRAFFIC VOLUMES

5.3.1 Overview

Traffic growth in the site vicinity has been considered based upon an evaluation of traffic volume changes related to general corridor growth on the area road network.

Consideration has also been made for the proposed GO Station. It is noted that the GO Station does not occur without the construction of the proposed development, and is reliant on the site-related road infrastructure. In this respect, the Future Background scenario is theoretical in nature and it has been assumed for the purpose of this scenario, that site-related road infrastructure and the GO Station are in place. It is noted that site-related GO trips have been excluded from Future Background, and are incorporated at the Future Total scenario.

5.3.2 Background Development Growth

No background developments are currently proposed in the vicinity of the site.

5.3.3 GO Station

Projected vehicle trip generation associated with the proposed GO station for trips travelling to and from the existing catchment area around Bolton are based on proxy data collected at other GO Stations, as summarized in **Table 2**.

The resultant projected GO Station vehicle trip generation is summarized in **Table 3**. For the purpose of analysis, the following assumptions have been made:

- Part of the projected GO Station vehicle trips are associated with the proposed residential, as outlined further in **Section 5.4.1.2**.
- The vehicle trips to/from the proposed residential will include pass-by as follows:
    - 50% of GO Station outbound trips during the AM peak will be a drop off, then continues onto work external to the Site; and
    - 50% of GO Station inbound trips during the PM peak will be a pick up on the way home from work external to the Site.

As outlined in **Section 5.3.1**, for the purpose of the Future Background scenario, site-related GO trips have been excluded. These projected GO trips were assigned onto the area road network based on the distribution of residential population within Bolton, and are shown in **Figure 6**.

The assignment of the site-related GO trips at Future Total are discussed in further detail in **Section 5.4.1.1**.

TABLE 2 GO STATION VEHICLE TRIP GENERATION RATES

Station	Date	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Total Proxy Trip Rates							
Rutherford GO	2012	0.63	0.15	0.78	0.12	0.64	0.76
	Sep 20, 2016	0.90	0.24	1.14	0.17	0.60	0.77
Bramalea GO	Oct 2, 2012	0.72	0.33	1.05	0.22	0.54	0.76
	Jun 24, 2015	0.47	0.11	0.58	0.14	0.55	0.69
Dixie GO	Apr 2, 2019	-			0.09	0.53	0.62
Langstaff GO	Sep 26, 2013	-			0.07	0.38	0.45
Barrie South GO	Jun 8, 2016	0.03	0.03	0.06	0.12	0.21	0.33
Pickering GO	May 11, 2017	0.30	0.09	0.39	0.06	0.23	0.29
Pick Up / Drop Off (PUDO) Proxy Trip Rates							
Rutherford GO	2012	0.11	0.10	0.21	0.09	0.09	0.18
	Sep 20, 2016	0.15	0.14	0.29	0.12	0.12	0.24
Bramalea GO	Oct 2, 2012	0.13	0.13	0.26	0.06	0.08	0.14
	Jun 24, 2015	0.12	0.12	0.24	0.14	0.14	0.28
Adopted Trip Rates							
Total Trips		**0.48**	**0.13**	**0.61**	**0.13**	**0.46**	**0.59**
PUDO Trips		**0.13**	**0.12**	**0.25**	**0.10**	**0.11**	**0.21**
Parking Lot Trips		**0.35**	**0.01**	**0.36**	**0.03**	**0.35**	**0.38**

Notes:

1. Data sources:
   Rutherford GO 2012 Data – GHD Study – Rutherford GO Station – 2013
   Rutherford GO 2016 Data – BA Group Study – Rutherford GO Station – November 2017
   Bramalea GO 2012 Data - BA Group Study – Bramalea GO Station Master Plan – June 2013
   Bramalea GO 2015 Data - BA Group Study – Bramalea GO Station – October 2016
   Dixie GO and Langstaff GO Data – LEA Study – Highway 27-Woodbine GO Station – April 2021
   Barrie South GO Data – Traffic Counts undertaken June 2016
   Pickering GO Data – Traffic Counts undertaken May 2017

TABLE 3 GO STATION VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Parking Lot	1,200 spaces	*0.35*	*0.01*	*0.36*	*0.03*	*0.35*	*0.38*
		424	**14**	**438**	**36**	**423**	**459**
Pick Up / Drop Off		*0.13*	*0.12*	*0.25*	*0.10*	*0.11*	*0.21*
		156	**144**	**300**	**120**	**132**	**252**
Total Vehicle Trips		**580**	**158**	**738**	**156**	**555**	**711**
To/From Internal Residential (Vehicle Trips)[1]		66	22	88	40	67	107
Pass-by Internal Residential to External Work AM & Pass-by External work to Internal Residential PM (Vehicle Trips)[2]	*0% In & 50% Out AM 50% In & 0% Out PM*	*0*	*11*	*11*	*20*	*0*	*20*
To/from Internal Residential (Vehicle Trips)[3]	*50% In & 0% Out AM 0% In & 50% Out PM*	*66*	*11*	*77*	*20*	*67*	*87*
Total Internal Vehicle Trips		**66**	**11**	**77**	**20**	**67**	**87**
Total External Vehicle Trips		**514**	**147**	**661**	**136**	**488**	**624**

Notes:
1. As outlined in the residential vehicle trip generation calculations outlined in **Section 5.4.1.2**.
2. Assumes 50% of outbound trips during the AM peak will be a drop off then continues onto work external to the Site and 50% of inbound trips during the PM peak will be a pick up on the way home from work external to the Site
3. Assumes remainder of vehicle trips are to/from internal residential

5.3.4 Corridor Growth

Adopted corridor growth rates are based on the Region of Peel's Travel Demand Forecasting Model, as outlined in **Table 4**. Corridor growth traffic volumes are shown in **Figure 7**.

TABLE 4 ADOPTED CORRIDOR GROWTH RATES

Road	Time Horizon	Direction	AM Peak	PM Peak
King Street	2021 to 2031	EB and WB	1.0%	1.0%
	2031 to 2041	EB and WB	1.0%	1.0%
The Gore Road	2021 to 2031	NB and SB	2.0%	2.0%
	2031 to 2041	NB and SB	2.0%	2.0%
Emil Kolb Parkway	2021 to 2031	NB and SB	1.0%	1.0%
	2031 to 2041	NB and SB	0.5%	0.5%

5.3.5 Future Background Traffic Volumes

The future background traffic volumes were determined by adding existing traffic volumes, corridor growth traffic volumes and GO Station traffic volumes and are shown in **Figure 8** for the 2041 analysis horizon year.

5.4 SITE TRAFFIC FORECASTS

5.4.1 Site Vehicle Trip Generation

Site vehicle trips were generated and distributed based on the proposed land use densities within the Secondary Plan area traffic zones. A reference plan for traffic zones is provided in **Appendix A**.

5.4.1.1 Site-Related GO Trips

As outlined in **Section 5.3.3**, part of the projected GO Station vehicle trips are associated with the proposed residential and are incorporated at Future Total. Site-related GO Station traffic was distributed based on the proposed distribution of residential density within the Site, and is shown in **Figure 9**.

5.4.1.2 Residential

Base residential vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Table 5**. The adopted rates were applied to the proposed development, as shown in **Table 6**. For the purpose of analysis, the following additional assumptions have been made:

- A 15% reduction was applied to account for a projected mode shift to transit and car share, split evenly between car share/local transit and GO transit. It was assumed that of those using the GO train, population within 800 metres of the Station would walk estimated based on proposed population densities within the Site;
- Internal trips associated with the proposed retail and schools were considered, as outlined within **Sections 5.4.1.3** and **5.4.1.4** respectively;
- A 5% reduction was applied based on input provided to BA Group by urbanMetrics that work from home has increased from approximately 4% of the Caledon population pre-COVID, to 9.6% of the Caledon population currently.

Unit counts are based on the latest Secondary Plan (May 2023).

Residential site traffic volumes are shown in **Figure 10**.

TABLE 5 BASE RESIDENTIAL VEHICLE TRIP GENERATION RATES (ITE 11TH EDITION)

Land Use	Land Use Code (ITE 11th Edition)	Vehicle Trip Generation Rate *(vehicle trips per dwelling)*					
		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Detached Dwelling	LUC 210 (Single-Family Detached Housing)	0.18	0.52	0.70	0.59	0.35	0.94
Low-Rise Residential	LUC 220 (Multifamily Housing (Low-Rise))	0.10	0.30	0.40	0.32	0.19	0.51
Mid-Rise Residential	LUC 221 (Multifamily Housing (Mid-Rise))	0.09	0.28	0.37	0.24	0.15	0.39

TABLE 6 SITE RESIDENTIAL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Detached Dwelling	3,104 dwellings	*0.18*	*0.52*	*0.70*	*0.59*	*0.35*	*0.94*
		565	**1,608**	**2,173**	**1,838**	**1,080**	**2,918**
Low-Rise Residential	1,600 dwellings	*0.10*	*0.30*	*0.40*	*0.32*	*0.19*	*0.51*
		154	**486**	**640**	**514**	**302**	**816**
Mid-Rise Residential	3,967 dwellings	*0.09*	*0.28*	*0.37*	*0.24*	*0.15*	*0.39*
		338	**1,130**	**1,468**	**944**	**603**	**1,547**
Base Vehicle Trip Generation	**8,671 dwellings**	**1,057**	**3,224**	**4,281**	**3,296**	**1,985**	**5,281**
Car Share and Local Transit Mode Shift[1]	7.5%	79	242	321	247	149	396
To/From Internal GO Station[1]	7.5%	79	242	321	247	149	396
Walking Trips[2]	*75%*	*57*	*176*	*233*	*180*	*109*	*289*
Vehicle Trips[2]	*25%*	*22*	*66*	*88*	*67*	*40*	*107*
To/From Internal Retail (Walking Trips)[3]		20	32	52	76	74	150
To/From Internal Retail (Vehicle Trips)[3]		7	12	19	28	28	56
To/From Internal Elementary School (Vehicle Trips)\[4]		77	90	167	19	17	36
Total Internal Vehicle Trips		**106**	**168**	**274**	**114**	**85**	**199**
Total External Vehicle Trips		**795**	**2,606**	**3,401**	**2,679**	**1,568**	**4,247**
Work From Home Reduction[5]	5%	41	130	171	135	77	212
Adjusted External Vehicle Trips		**754**	**2,476**	**3,230**	**2,544**	**1,491**	**4,035**

Notes:
1. Assumes total transit and car share shift of 15%, split evenly between car share/local transit and GO transit
2. Assumes population within 800 metres of the GO Station will walk (approximately 75% of subdivision residential density)
3. As outlined in the retail vehicle trip generation calculations in **Section 5.4.1.3**.
4. As outlined in the school vehicle trip generation calculations in **Section 5.4.1.4.** Walking trips to/from the schools have conservatively not been deducted from the residential trip generation.
5. A 5% reduction was applied based on input provided to BA Group by urbanMetrics that work from home has increased from approximately 4% of the Caledon population pre-COVID, to 9.6% of the Caledon population currently.

5.4.1.3 Retail

Base retail vehicle trip generation rates for were adopted based on the ITE 11th Edition, as outlined in **Table 7.** The adopted rates were applied to the proposed retail, as shown in **Table 8**. For the purpose of analysis, the following additional assumptions have been made:

- In the order of 10% of total retail will be destination retail and 90% will be local retail, based on input provided to BA Group by urbanMetrics
- Pass-by percentages of 0% and 34% were adopted in the AM and PM peaks respectively, based on the ITE Trip Generation Handbook 3rd Edition;
- Destination retail trips associated with residents of the proposed subdivision for the commercial mixed-use block were estimated using the methodology outlined in the ITE Trip Generation Handbook 3rd Edition, as outlined in **Section 5.4.1.5**;
- Local retail trips associated with residents of the proposed subdivision for the commercial mixed-use block were estimated based on the area and potential yield of the site compared with the surrounding local area; and
- Population within 800 metres of the commercial mixed-use block would walk, estimated based on proposed population densities within the Site.

Projected retail trips for destination and local retail are shown in **Table 9** and **Table 10** and respectively. Retail site traffic volumes are shown in **Figure 11**.

TABLE 7 RETAIL VEHICLE TRIP GENERATION RATE (ITE 11TH EDITION)

Land Use	Land Use Code (ITE 10th Edition)	Vehicle Trip Generation Rate *(vehicle trips per 1,000 ft²)*					
		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Commercial	LUC 820 (Shopping Centre)	0.52	0.32	0.84	1.63	1.77	3.40

TABLE 8 SITE RETAIL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Commercial		*0.52*	*0.32*	*0.84*	*1.63*	*1.77*	*3.40*
Base Vehicle Trip Generation	**207,050 ft²**	**108**	**66**	**174**	**338**	**366**	**704**

TABLE 9 SITE RETAIL VEHICLE TRIP GENERATION – DESTINATION RETAIL

Land Use		Number	AM Peak Hour			PM Peak Hour		
			In	Out	2-Way	In	Out	2-Way
Base Vehicle Trip Generation		**207,050 ft²**	**108**	**66**	**174**	**338**	**366**	**704**
Destination Retail Vehicle Trip Generation[1]		**10%**	**11**	**7**	**18**	**34**	**37**	**71**
	External Pass-by Trips[2]	***0% AM 34% PM***	***0***	***0***	***0***	***12***	***12***	***24***
Primary Trips[1]	***Total Primary***	***100% AM 66% PM***	***11***	***7***	***18***	***22***	***25***	***47***
	To/From Internal Residential (Total Trips)[3]		0	0	0	10	5	15
	To/From Internal Residential (Walking Trips)[4]	*75%*	*0*	*0*	*0*	*7*	*4*	*11*
	To/From Internal Residential (Vehicle Trips)[4]	*25%*	*0*	*0*	*0*	*3*	*1*	*4*
	Total Internal Vehicle Trips		**0**	**0**	**0**	**3**	**1**	**4**
	Total External Vehicle Trips		**11**	**7**	**18**	**12**	**20**	**32**

Notes:
1. Assumes 10% of total retail will be destination retail and 90% will be local retail, based on input provided to BA Group by urbanMetrics
2. Assumes 0% pass-by in the AM and 34% pass-by in the PM, based on ITE Trip Generation Handbook 3rd Edition
3. As determined by the internal interaction calculations outlined in **Section 5.4.1.5**.
4. Assumes population within 800 metres of the retail will walk (approximately 75% of subdivision residential density)

TABLE 10 SITE RETAIL VEHICLE TRIP GENERATION – LOCAL RETAIL

Land Use		Number	AM Peak Hour			PM Peak Hour		
			In	Out	2-Way	In	Out	2-Way
Base Vehicle Trip Generation		**207,050 ft²**	**108**	**66**	**174**	**338**	**366**	**704**
Local Retail Vehicle Trip Generation[1]		**90%**	**97**	**59**	**156**	**304**	**329**	**633**
	External Pass-by Trips[2]	***0% AM 34% PM***	***0***	***0***	***0***	***103***	***112***	***215***
Primary Trips[1]	***Total Primary***	***100% AM 66% PM***	***97***	***59***	***156***	***201***	***217***	***418***
	To/From Internal Residential (Total Trips)[3]		44	27	71	92	99	191
	To/From Internal Residential (Walking Trips)[4]	*75%*	*32*	*20*	*52*	*67*	*72*	*139*
	To/From Internal Residential (Vehicle Trips)[4]	*25%*	*12*	*7*	*19*	*25*	*27*	*52*
	Total Internal Vehicle Trips		**12**	**7**	**19**	**25**	**27**	**52**
	Total External Vehicle Trips		**53**	**32**	**85**	**109**	**118**	**227**

Notes:
1. Assumes 10% of total retail will be destination retail and 90% will be local retail, based on input provided to BA Group by urbanMetrics
2. Assumes 0% pass-by in the AM and 34% pass-by in the PM, based on ITE Trip Generation Handbook 3rd Edition
3. Assumes 45% internal based on area and potential yield of site compared with surrounding local area
4. Assumes population within 800 metres of the retail will walk (approximately 75% of subdivision residential density)

5.4.1.4 Schools

Base school vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Table 11**. The subsequent projected school vehicle trip generations are outlined in **Table 12**.

It is expected that the proposed schools will primarily service residents of the proposed site, many of which will be within convenient walking distance of the schools. For the purpose of analysis, the following additional assumptions have been made:

- All trips associated with the proposed schools will be associated with residents of the proposed subdivision. The majority of the site is within 800 metres of one of the schools. However, for the purpose of assessment, it has been assumed that 85% of school trips will be walking trips, to allow for some people driving regardless of the distance.
- The resulting projected vehicle trips will include pass-by as follows:
    - 60% of school outbound trips during the AM peak will be a drop off, then continues onto work external to the Site; and
    - 60% of school inbound trips during the PM peak will be a pick up on the way home from work external to the Site.
- Remaining vehicle trips will be to and from internal residential.

School site traffic volumes are shown in **Figure 12**.

TABLE 11 BASE ELEMENTARY SCHOOL VEHICLE TRIP GENERATION RATES (ITE 11TH EDITION)

Land Use	Land Use Code (ITE 11th Edition)	Vehicle Trip Generation Rate *(vehicle trips per student)*					
		AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Elementary School	LUC 520 (Elementary School)	0.40	0.34	0.74	0.07	0.09	0.16

TABLE 12 SITE ELEMENTARY SCHOOL TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Elementary School		*0.40*	*0.34*	*0.74*	*0.07*	*0.09*	*0.16*
Base Vehicle Trip Generation	**1500 students[1]**	**599**	**511**	**1,110**	**110**	**130**	**240**
To/From Internal Residential (Walking Trips)[2]	85%	509	434	943	93	111	204
Total Vehicle Trips	15%	90	77	167	17	19	36
Pass-by Internal Residential to External Work AM & Pass-by External work to Internal Residential PM (Vehicle Trips)[3]	*0% In & 60% Out AM 60% In & 0% Out PM*	*0*	*45*	*45*	*9*	*0*	*9*
To/from Internal Residential (Vehicle Trips)[4]	*100% In & 40% Out AM 40% In & 100% Out PM*	*90*	*32*	*122*	*8*	*19*	*27*
Total Internal Vehicle Trips		**90**	**32**	**122**	**8**	**19**	**27**
Total External Vehicle Trips		**0**	**45**	**45**	**9**	**0**	**9**

Notes:
1. Assume 1,500 students for the purpose of this assessment
2. Assumes 100% of school trips are associated with internal residential as either direct or pass-by trips and in the order of 85% of trips will walk
3. Assumes 60% of outbound trips during the AM peak will be a drop off then continues onto work external to the Site and 60% of inbound trips during the PM peak will be a pick up on the way home from work external to the Site
4. Assumes remainder of vehicle trips are to/from internal residential

5.4.1.5 Internal Interaction

As discussed in the above sections, allowances have been made for internal interaction between the proposed residential and retail using the methodology outlined in the ITE Trip Generation Handbook 3rd Edition.

The interaction trip rates by land use, as outlined in the ITE Handbook are reproduced in **Table 13**. Application of these rates to the projected vehicle trip generation yields the potential interaction for each land use, as summarized in **Table 14**. The resultant interaction trips by land use is summarized in **Table 15**.

TABLE 13 INTERACTION TRIP RATE BY LAND USE

Land Use	AM Peak		PM Peak	
	In	Out	In	Out
Residential				
With Destination Retail	2%	1%	46%	42%
Destination Retail				
With Residential	17%	14%	10%	26%

TABLE 14 INTERACTION TRIP POTENTIAL BY LAND USE

Land Use	AM Peak		PM Peak	
	In	Out	In	Out
Residential				
With Destination Retail	15	25	1,285	705
Destination Retail				
With Residential	0	0	5	10

TABLE 15 INTERACTION TRIPS BY LAND USE

Land Use	AM Peak		PM Peak	
	In	Out	In	Out
Residential				
With Destination Retail	0	0	10	5
Destination Retail				
With Residential	0	0	5	10

5.4.1.6 Total Trip Generation

The resultant projected vehicle trip generation for the Site is summarized in **Table 16**.

TABLE 16 SITE TOTAL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Residential							
Internal Vehicle Trips	8,671 dwellings	106	168	274	114	85	199
External Vehicle Trips		754	2,476	3,230	2,544	1,491	4,035
Retail							
Internal Vehicle Trips	207,050 ft^2	12	7	19	28	28	56
External Vehicle Trips		64	39	103	121	138	259
Elementary School							
Internal Vehicle Trips	1,500 students	90	32	122	8	19	27
External Vehicle Trips		0	45	45	9	0	9

5.4.2 Site Vehicle Trip Distribution

5.4.2.1 Residential

Residential site traffic was assigned onto the area road network based on the results of the 2016 Transportation Tomorrow Survey (TTS), prevailing traffic patterns and area turn restrictions. General direction of approach percentages was based on the results of the TTS and is summarized in **Table 17**.

TABLE 17 RESIDENTIAL SITE TRAFFIC DISTRIBUTION

Direction	Roadway	Inbound/Outbound
North	The Gore Road	2.5%
	Humber Station Road	2.5%
	Emil Kolb Parkway	5%
South	The Gore Road	25%
	Humber Station Road	30%
	Emil Kolb Parkway	25%
West	King Street	10%
Total		**100%**

Notes:
1. Based on TTS zones 3153, 3190, 3191, 3192, 3193, and 3194

5.4.2.2 Retail External Distribution

Retail site traffic was assigned onto the area road network based on the distribution of existing and future residential population within Bolton and is summarized in **Table 18**. The distribution for local retail is specific to nearby future development, while the distribution for destination retail is based on broader Bolton.

TABLE 18 RETAIL SITE TRAFFIC DISTRIBUTION

Direction	Roadway	Destination Retail	Local Retail
		Inbound/Outbound	Inbound/Outbound
North	The Gore Road	5%	29%
	Humber Station Road	2%	12%
	Emil Kolb Parkway	12%	0%
South	The Gore Road	8%	25%
	Humber Station Road	24%	17%
	Emil Kolb Parkway	46%	0%
West	King Street	3%	17%
Total		**100%**	**100%**

5.4.2.3 Internal Trip Distribution

Distributions associated with internal trips between residential and the proposed schools and retail are based on the proposed distribution of residential density within the Site. Pass-by trips which are assumed to/from work are assumed based on the residential distribution as outlined in **Section 5.4.2.1**.

5.4.3 Future Total Traffic Volumes

Future total traffic volumes were determined by adding the future background traffic volumes with the site traffic volumes and are shown in **Figure 13** for the 2041 analysis horizon year.

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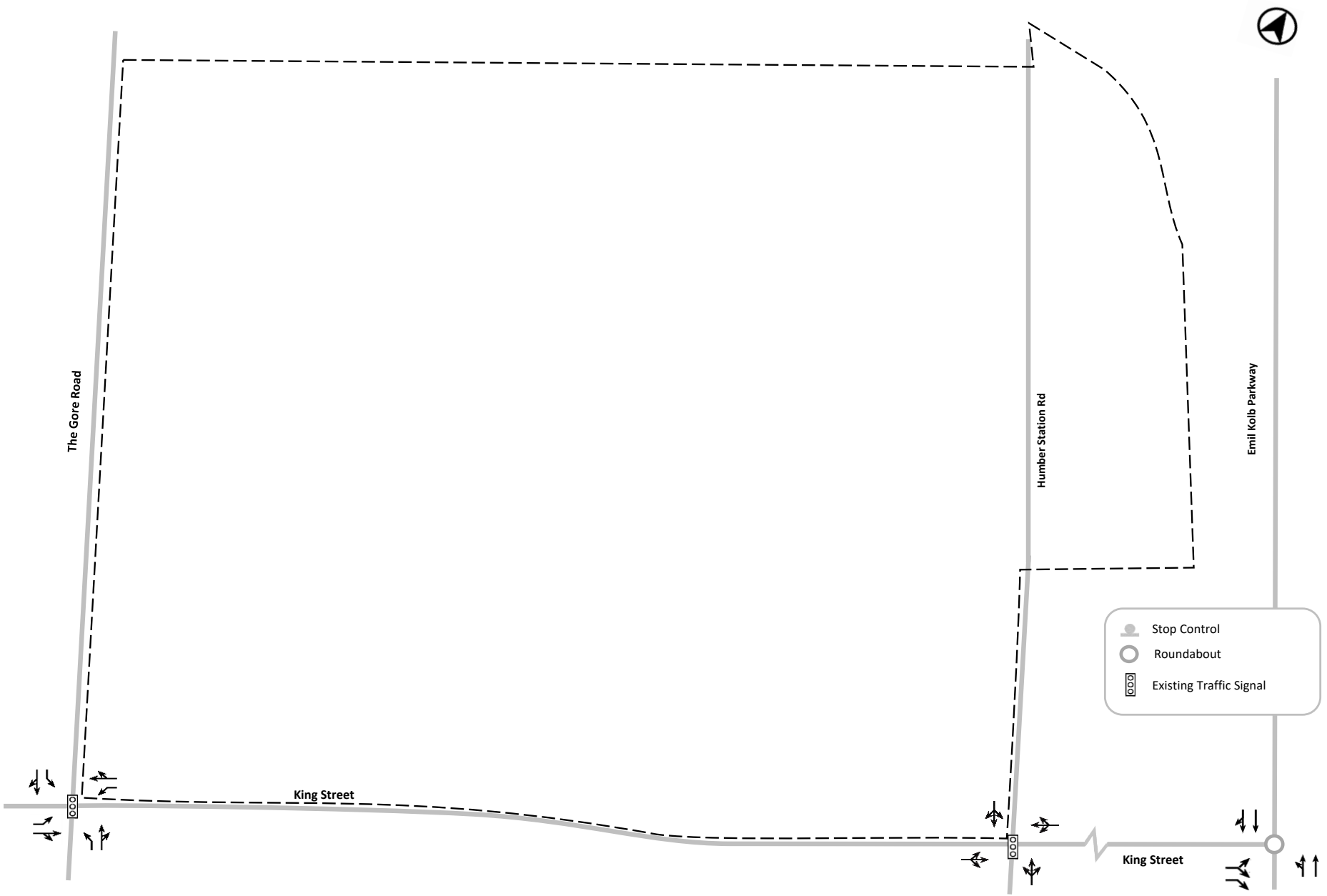

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FIGURE 3 EXISTING LANE CONFIGURATIONS

CALEDON STATION SECONDARY PLAN

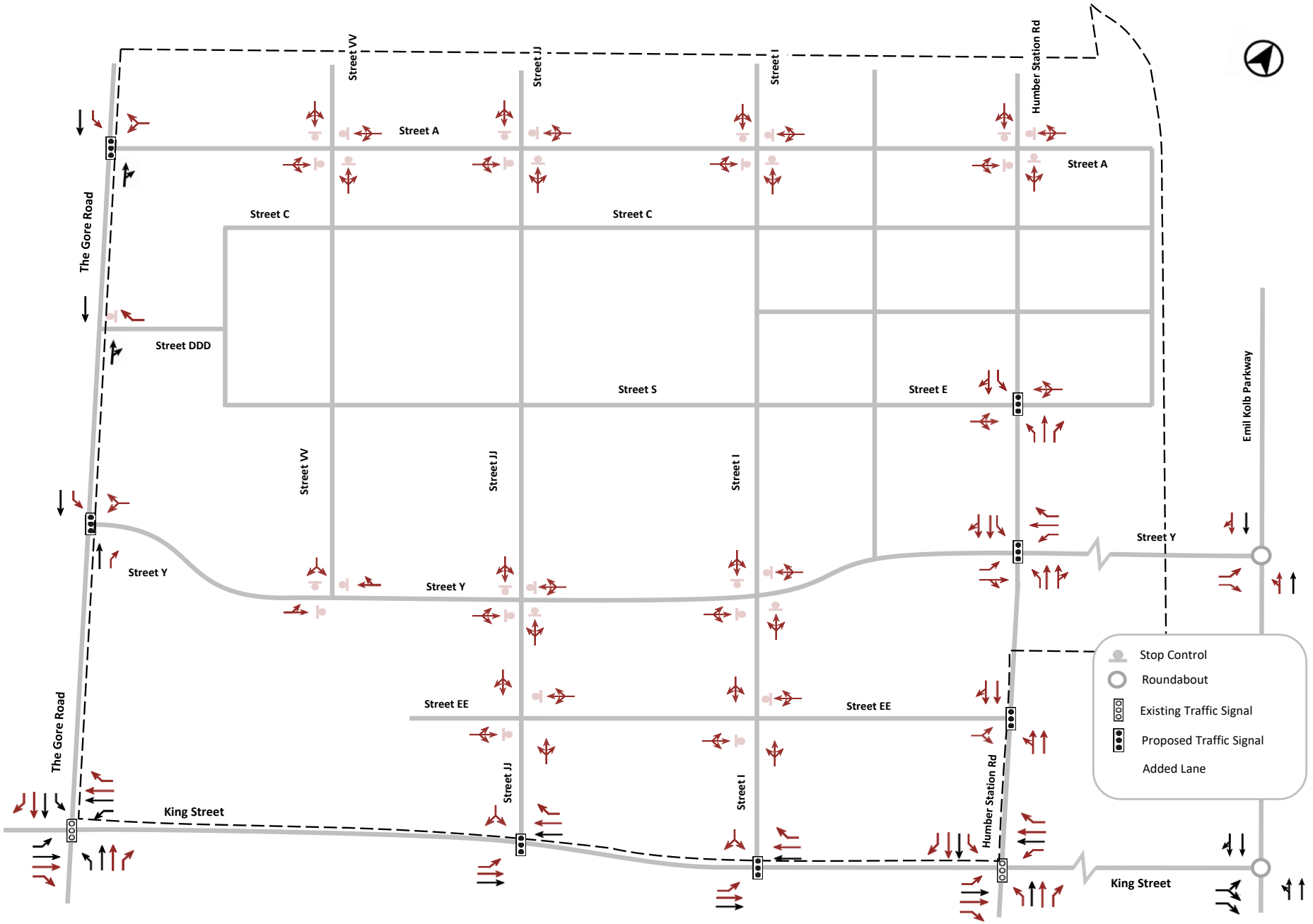

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FIGURE 4 FUTURE LANE CONFIGURATIONS

CALEDON STATION SECONDARY PLAN

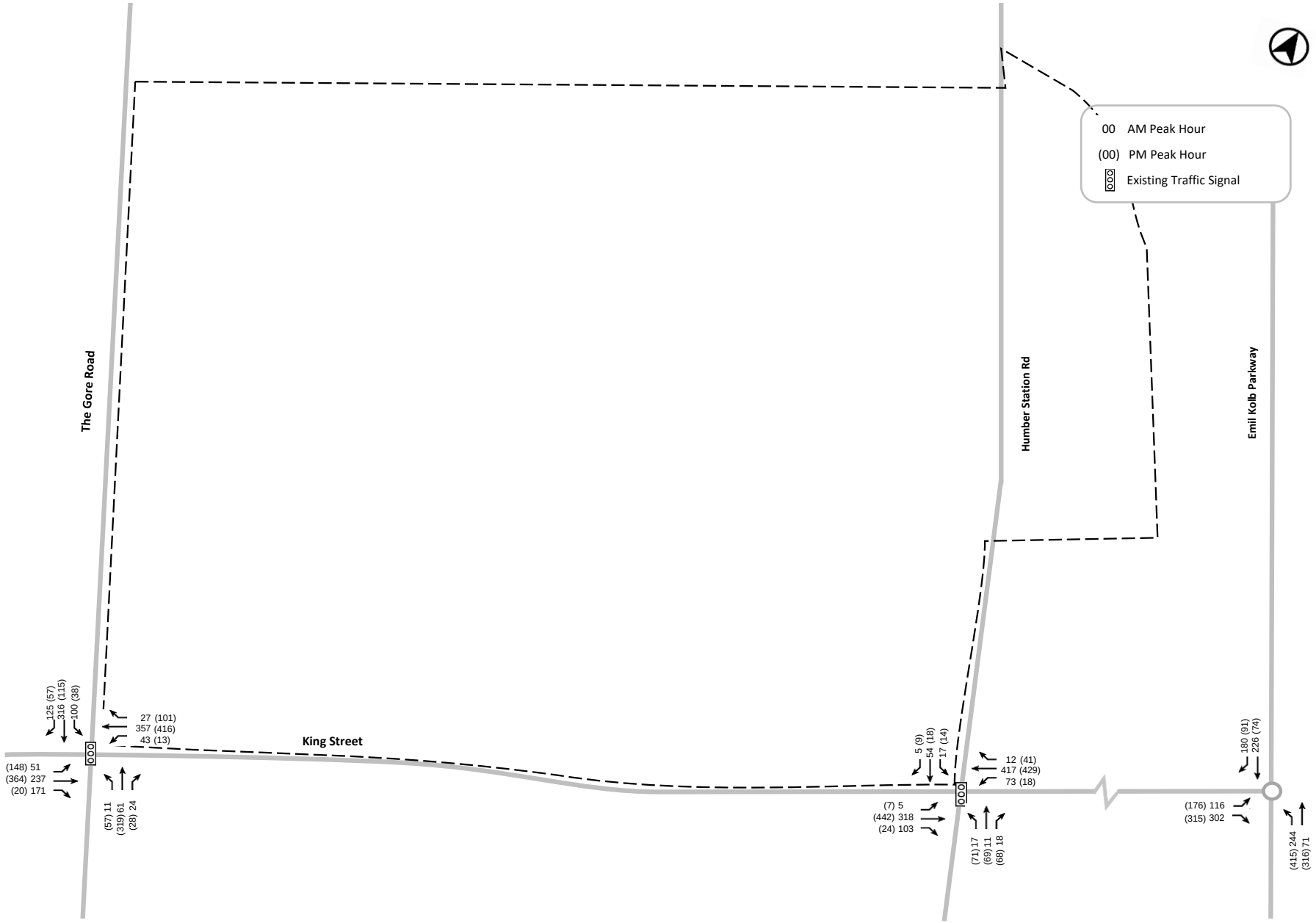

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FIGURE 5 EXISTING TRAFFIC VOLUMES

CALEDON STATION SECONDARY PLAN

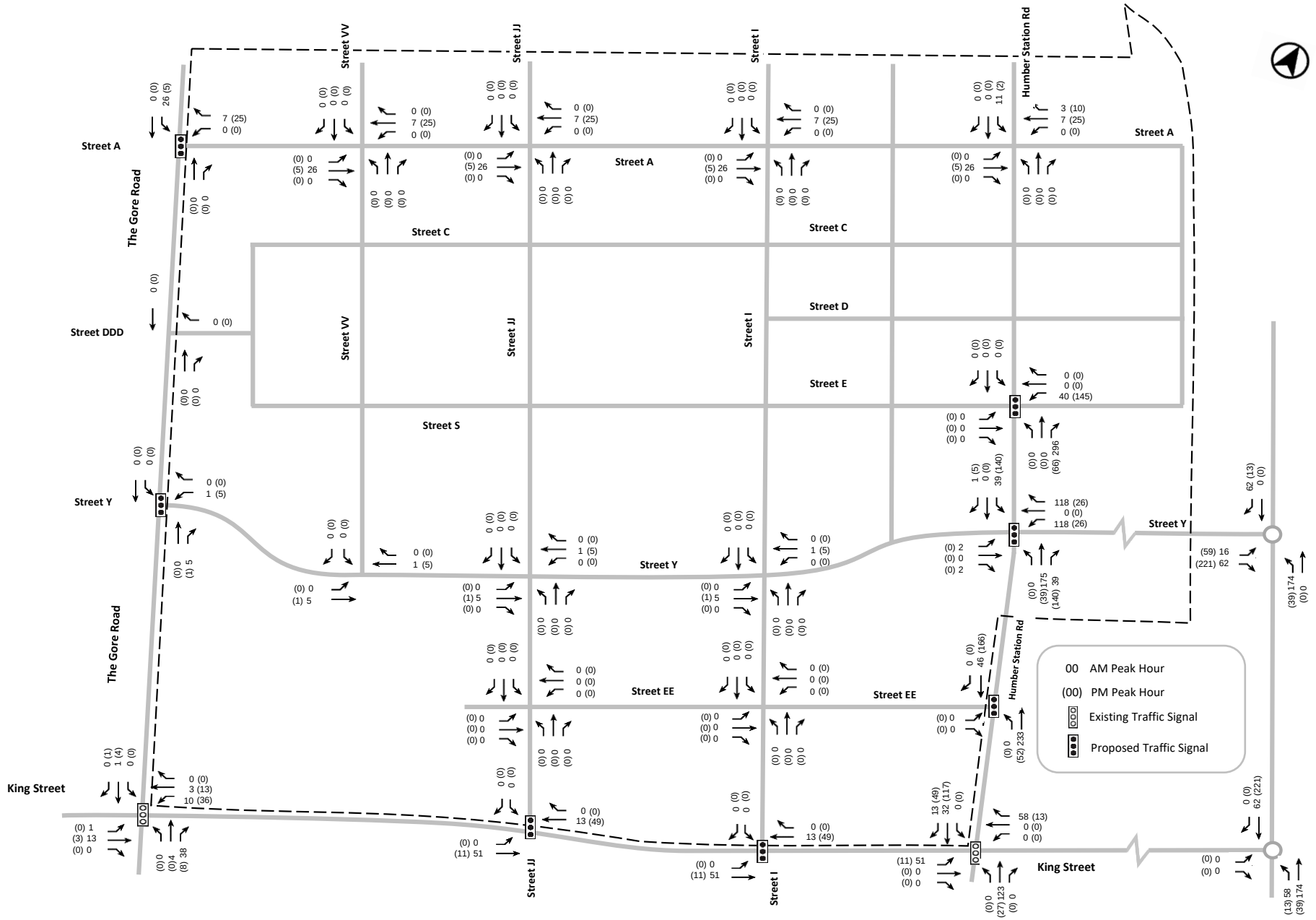

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FIGURE 6 GO STATION TRAFFIC VOLUMES 2041 (EXCLUDING SITE-RELATED GO TRIPS)

CALEDON STATION SECONDARY PLAN

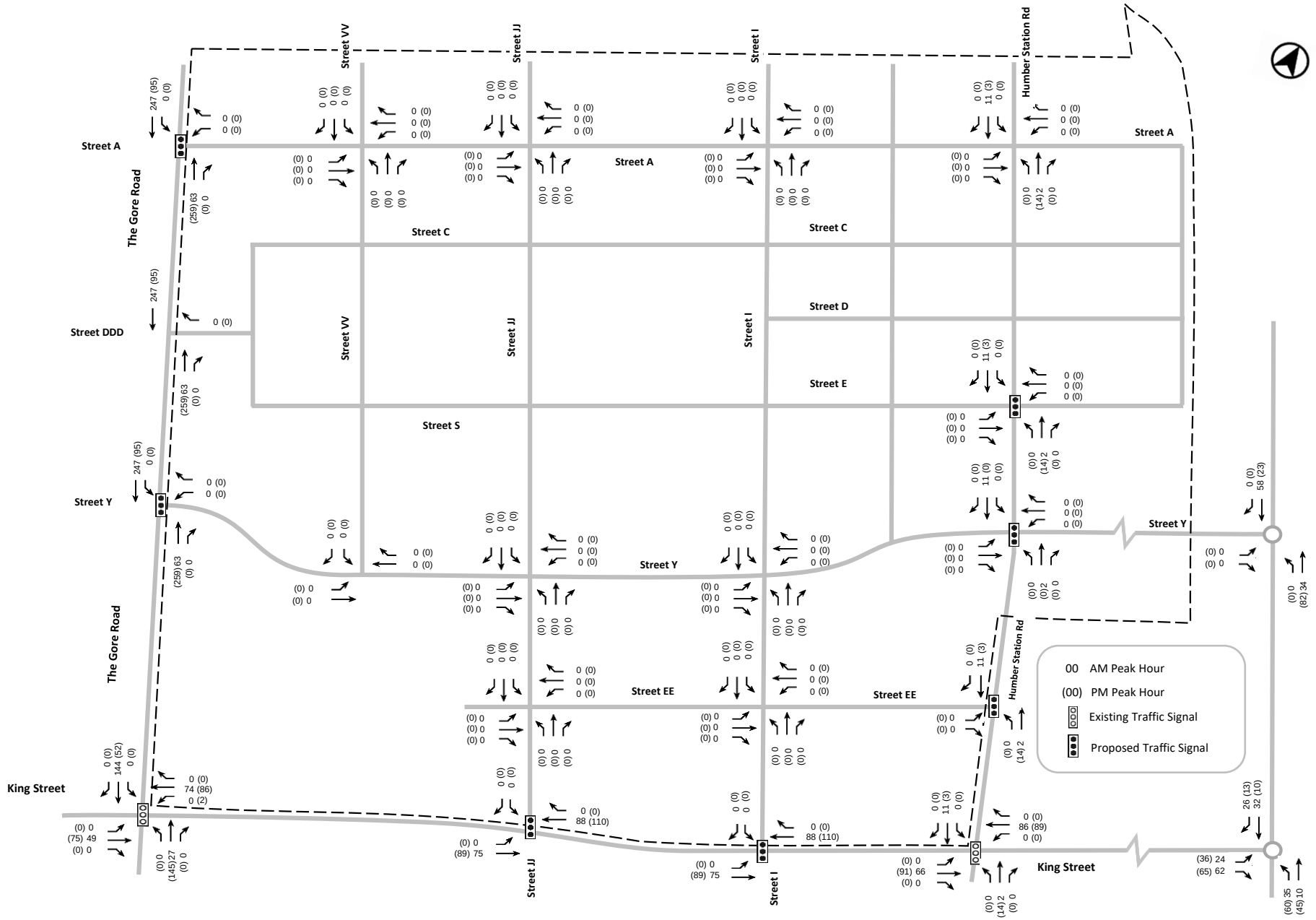

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FIGURE 7 CORRIDOR GROWTH TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

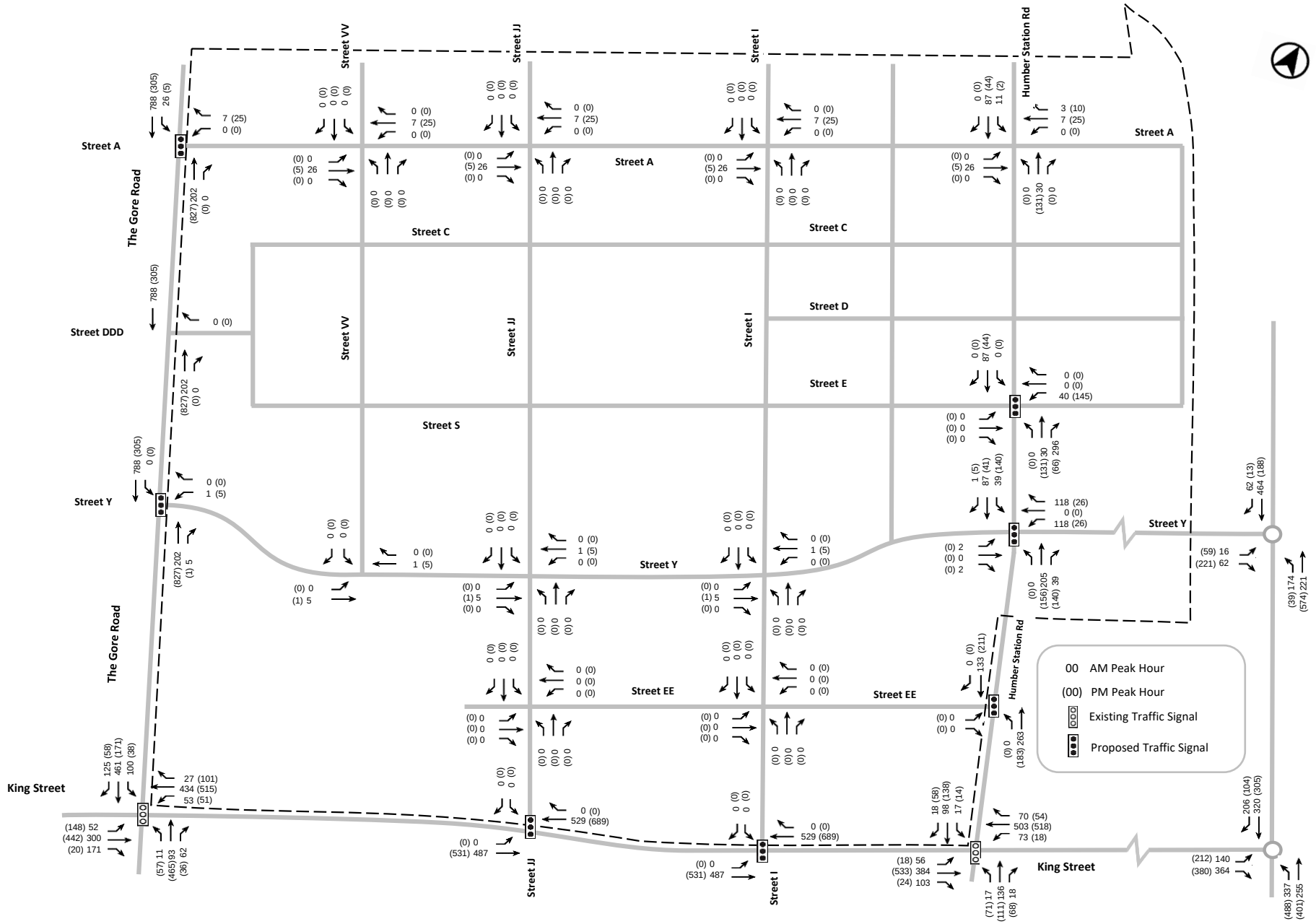

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FIGURE 8 FUTURE BACKGROUND TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

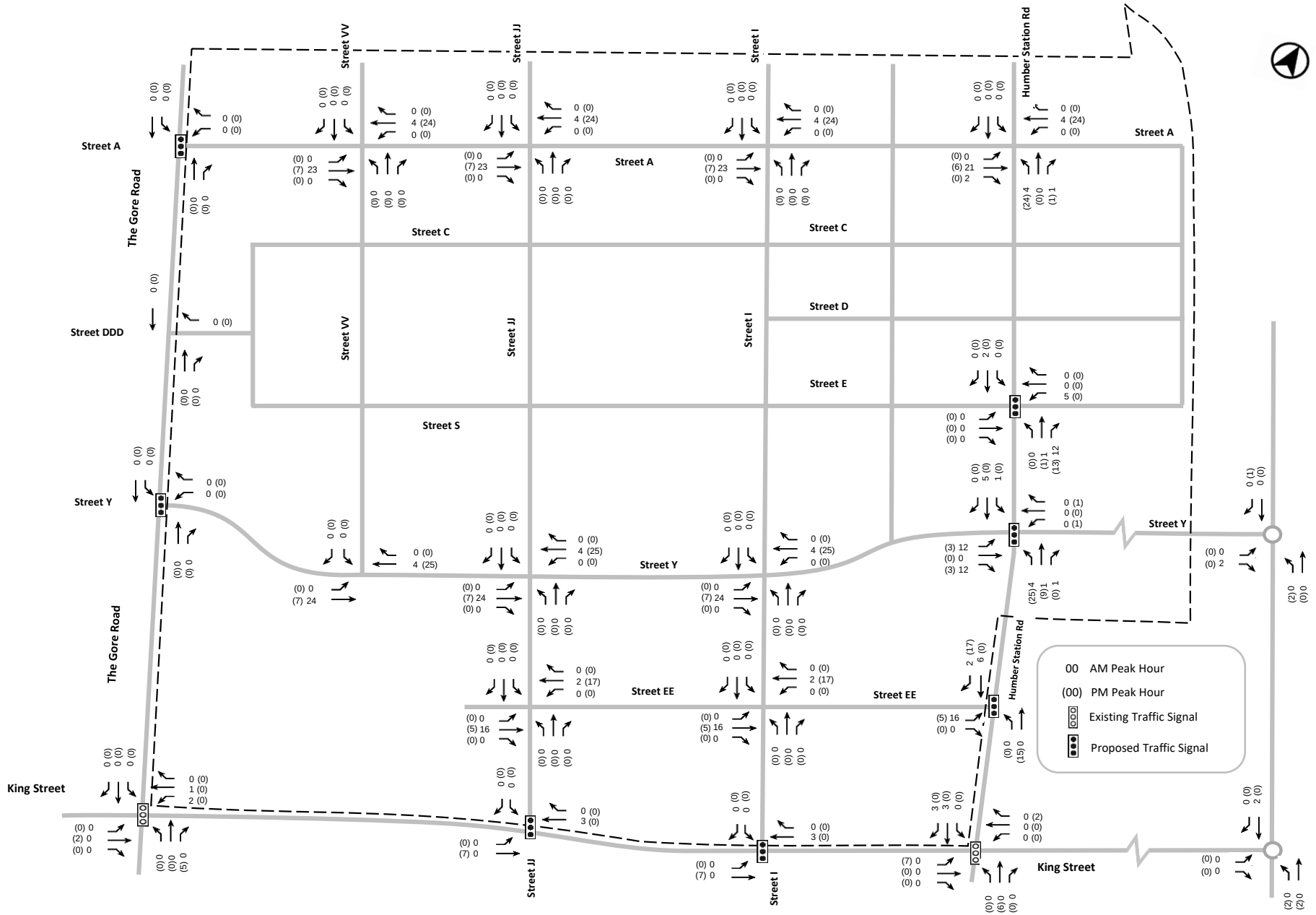

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FIGURE 9 SITE-RELATED GO STATION TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

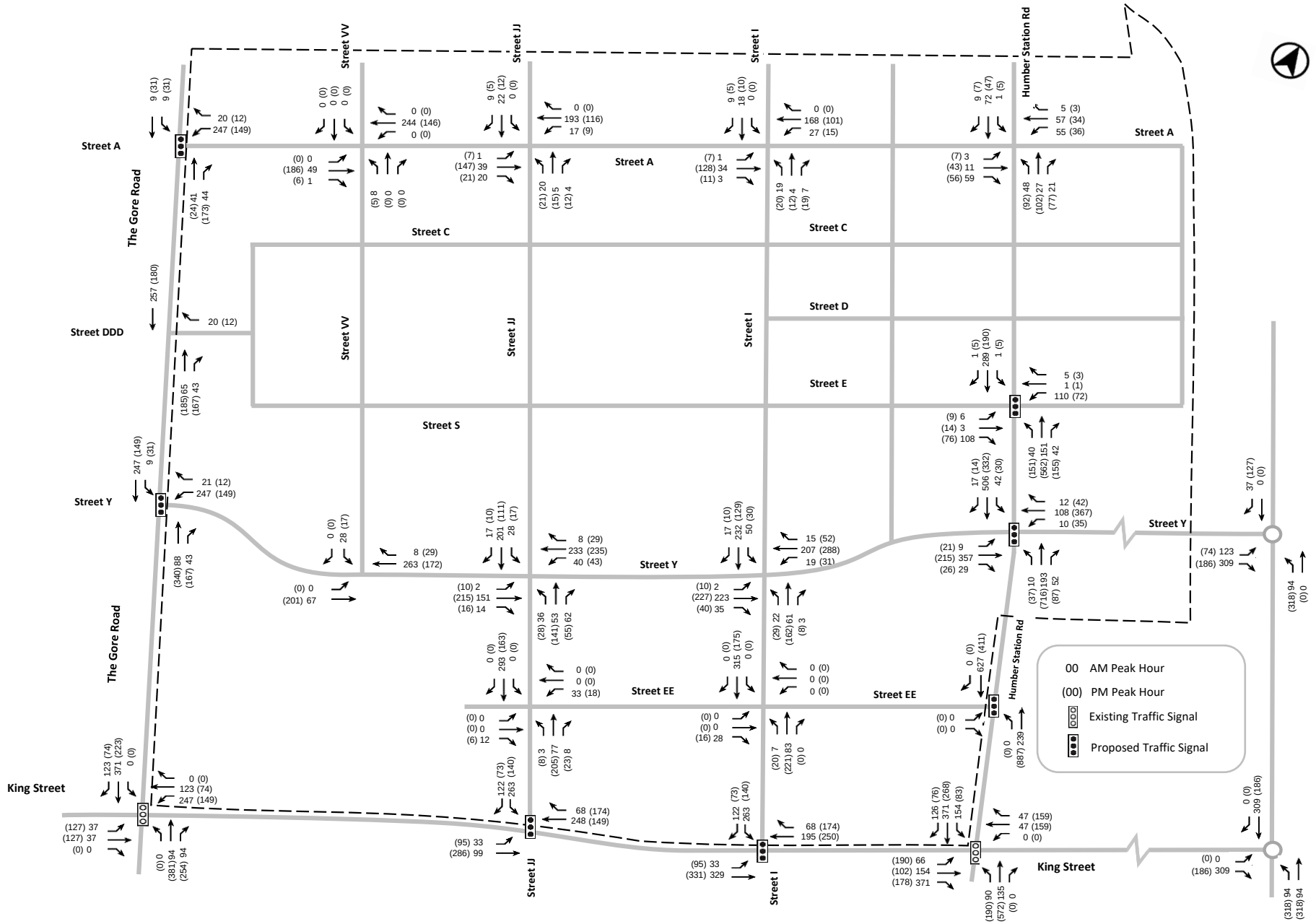

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FIGURE 10 RESIDENTIAL SITE TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

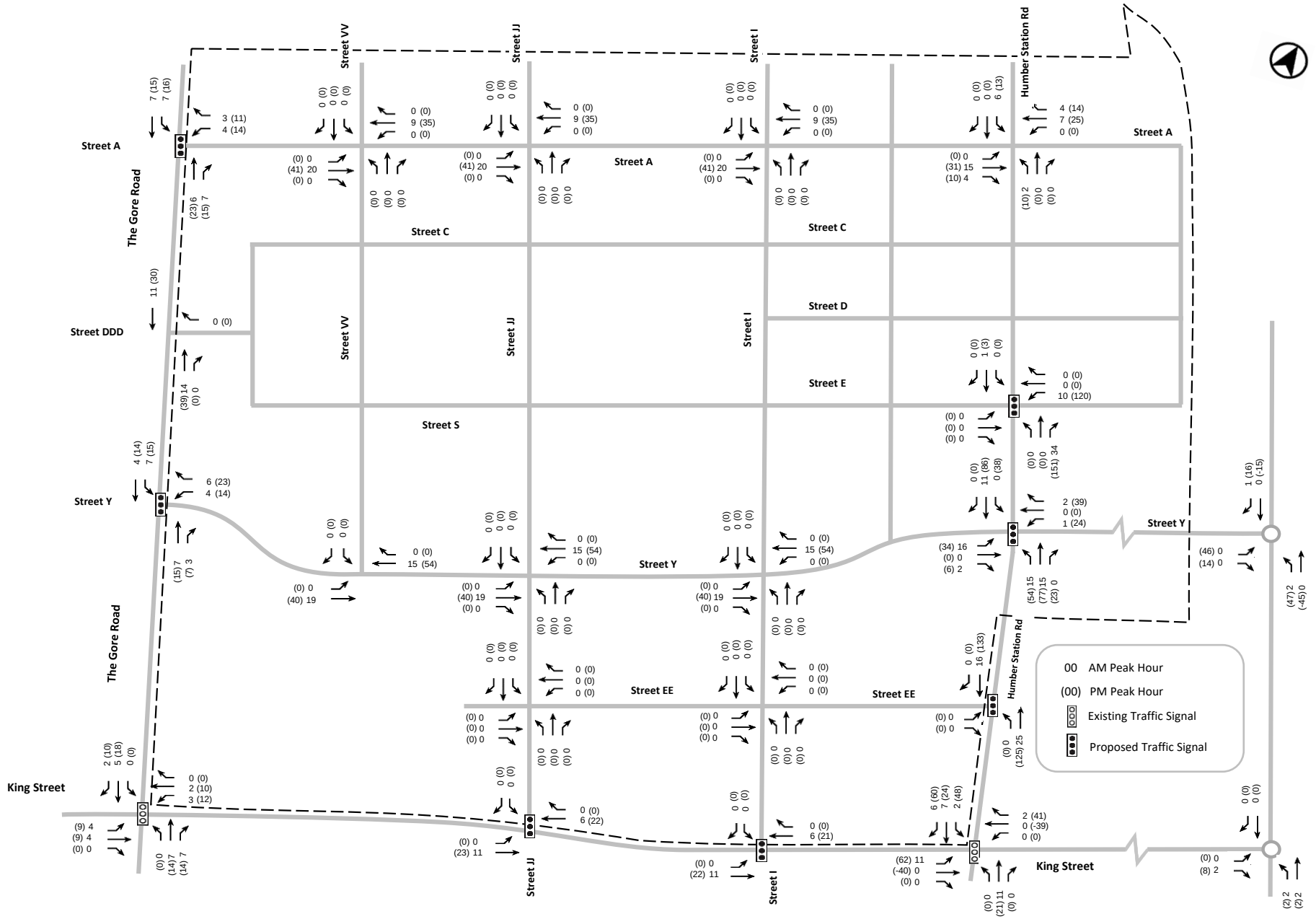

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FIGURE 11 RETAIL SITE TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

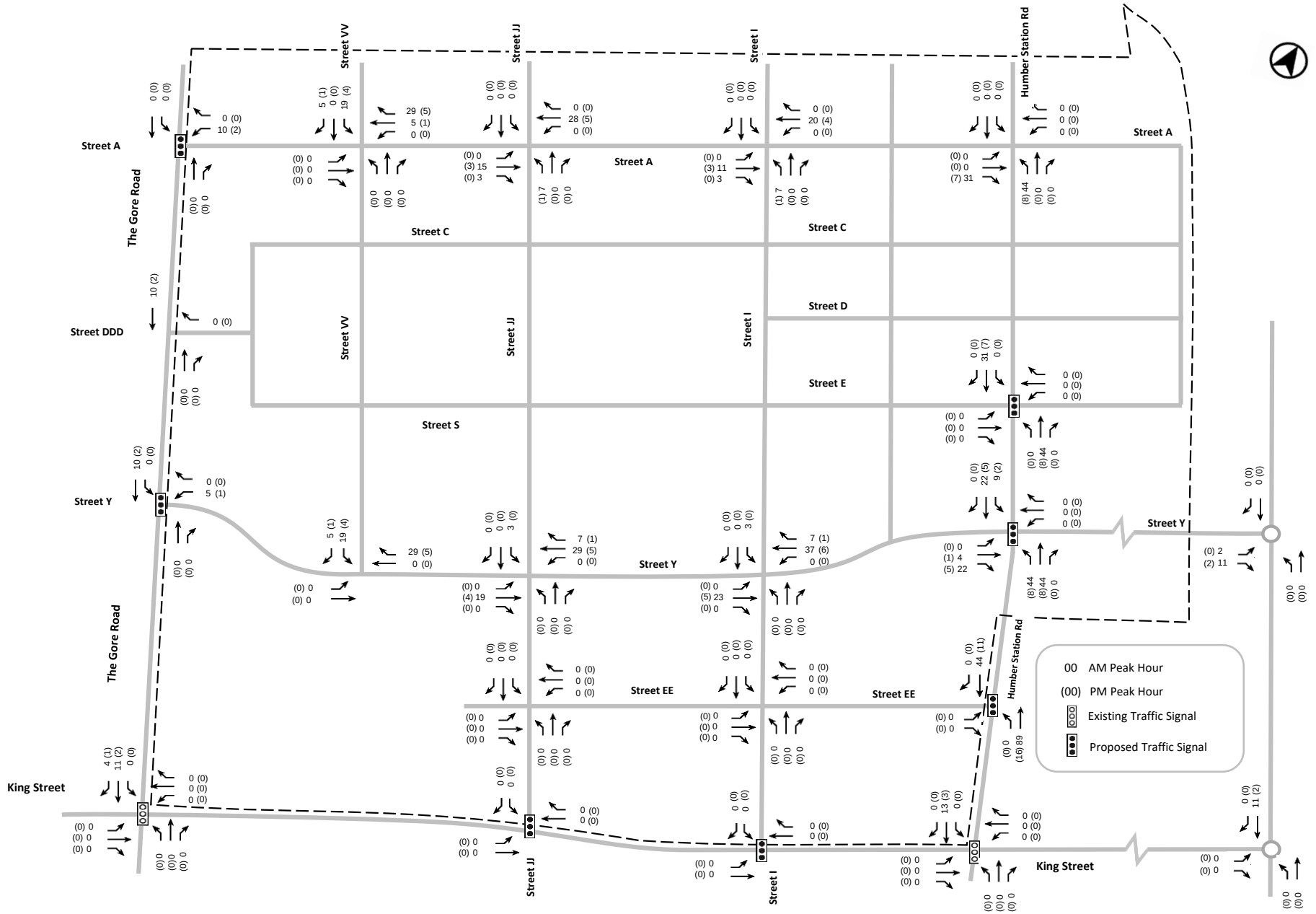

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FIGURE 12 SCHOOL SITE TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

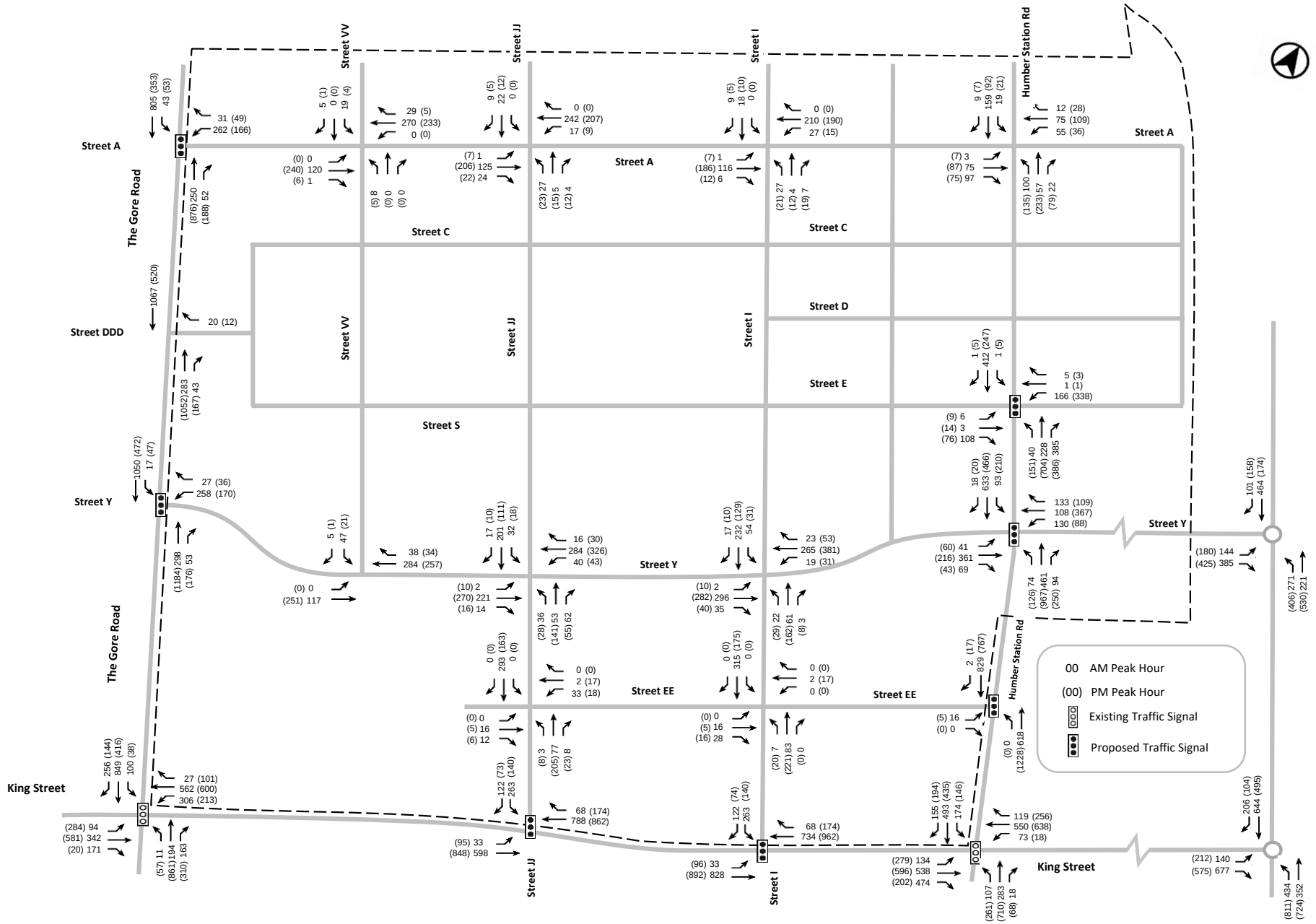

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FIGURE 13 FUTURE TOTAL TRAFFIC VOLUMES (2041)

CALEDON STATION SECONDARY PLAN

6.0 OPERATION ANALYSIS

6.1 ANALYSIS METHODOLOGY

Synchro Version 11 and the Highway Capacity Manual (HCM) methodology were used to analyze the study area signalized and unsignalized stop-controlled intersections and site access points. In order to assess the unsignalized roundabout intersections, Arcady was used.

For signalized intersections, the volume-to-capacity ratio (v/c) is an indicator of the capacity utilization for the key movements in the intersection. A v/c of 1.00 indicates that a traffic movement through an intersection is operating at or near maximum capacity.

For unsignalized intersections, level of service (LOS) characterizes operational conditions for key movements in terms of average delay experienced by vehicles attempting to complete a manoeuvre through the intersection. LOS 'A' represents a good level of service with short delays, while LOS 'F' represents a poor level of service with extended delays.

Analysis summary tables are provided in **Appendix E** and detailed analysis worksheets are attached in **Appendix F**.

6.2 ANALYSIS ASSUMPTIONS AND PARAMETERS

Synchro analyses performed conform to the requirements of the Region of Peel's Guidelines for Using Synchro, December 2010. A base saturation flow of 1,900 vehicles per hour per lane and peak hour factor of 1.00 was assumed as per the Region's Synchro guidelines. Heavy vehicle percentages were calculated based on existing traffic volume data extracted from the traffic counts utilized in this study.

Existing traffic signal timing plans for the signalized intersections within the study area were obtained from the Region of Peel and are attached in **Appendix D**. Analyses were undertaken using these signal timing plans.

A summary of Existing Operations, Future Background Operations and Future Total Operations are illustrated in **Figure 14** to **Figure 16**.

A summary of Recommended Road Improvements are described in **Section 6.3**.

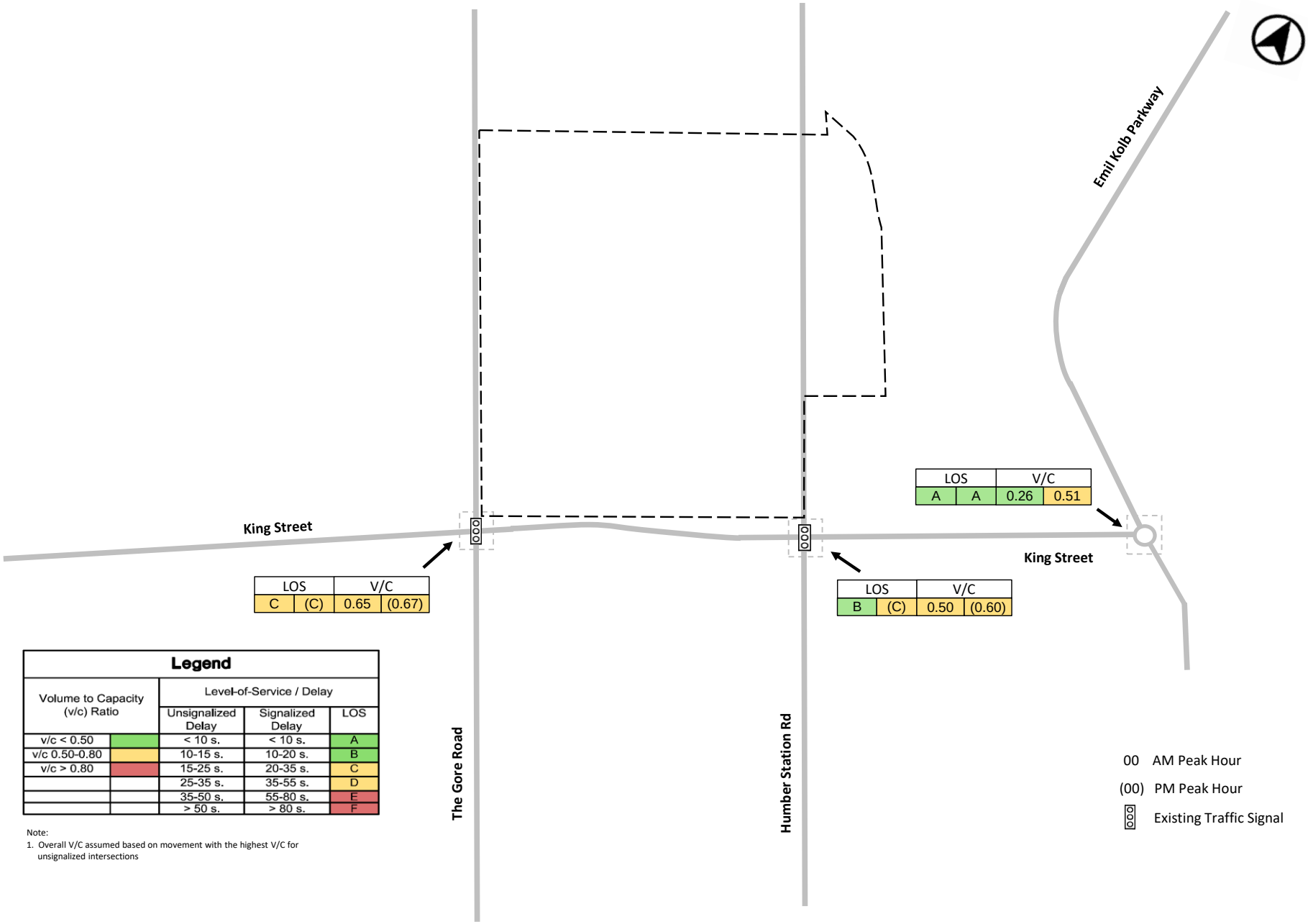

FIGURE 14 EXISTING INTERSECTION OPERATIONS

CALEDON STATION SECONDARY PLAN

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FIGURE 15A FUTURE BACKGROUND INTERSECTION OPERATIONS (2041) - INTERNAL (No Improvements)

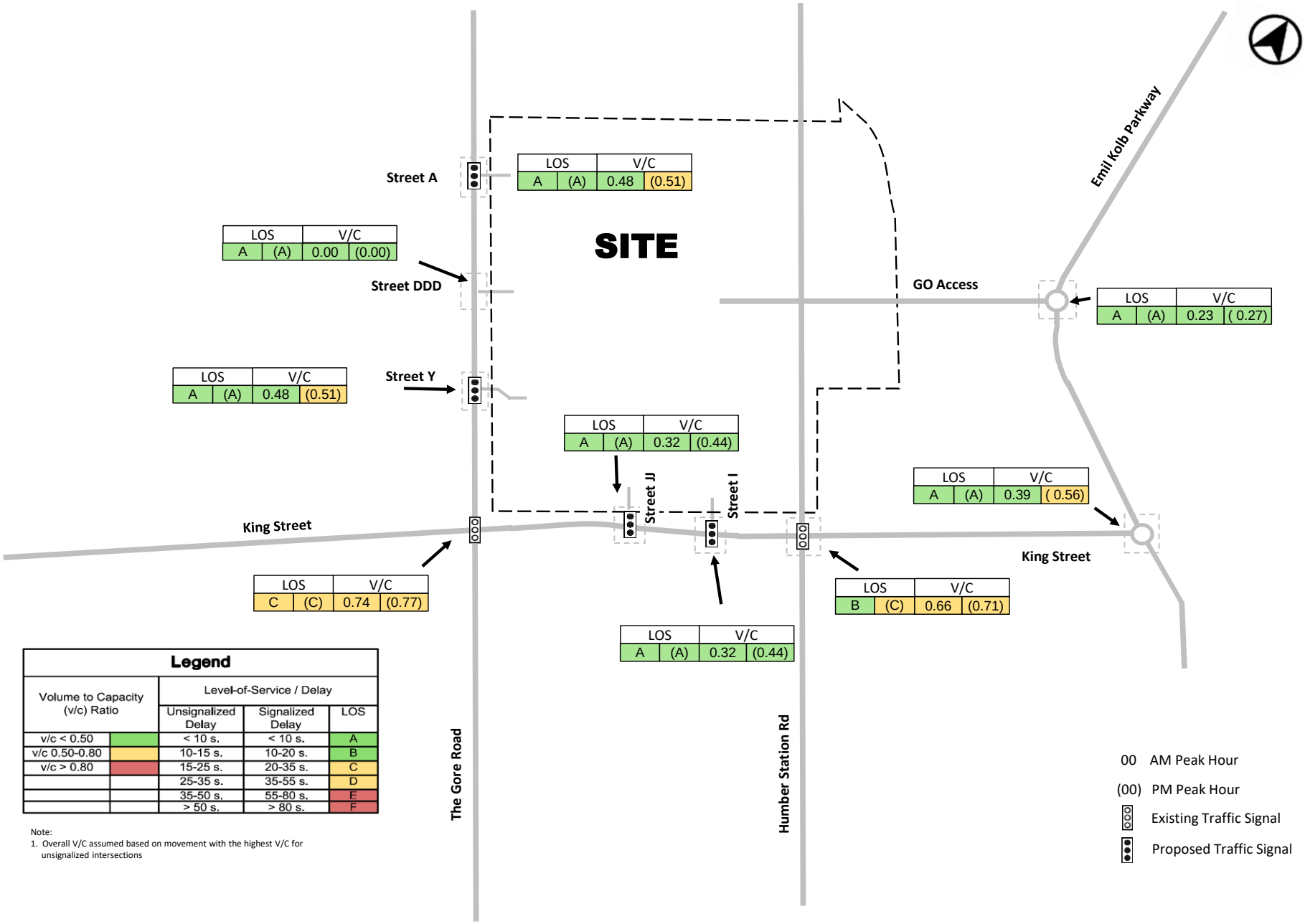

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FIGURE 15B FUTURE BACKGROUND INTERSECTION OPERATIONS (2041) - EXTERNAL (No Improvements)

CALEDON STATION SECONDARY PLAN

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FIGURE 15C FUTURE BACKGROUND INTERSECTION OPERATIONS (2041) - INTERNAL (With Improvements)

CALEDON STATION SECONDARY PLAN

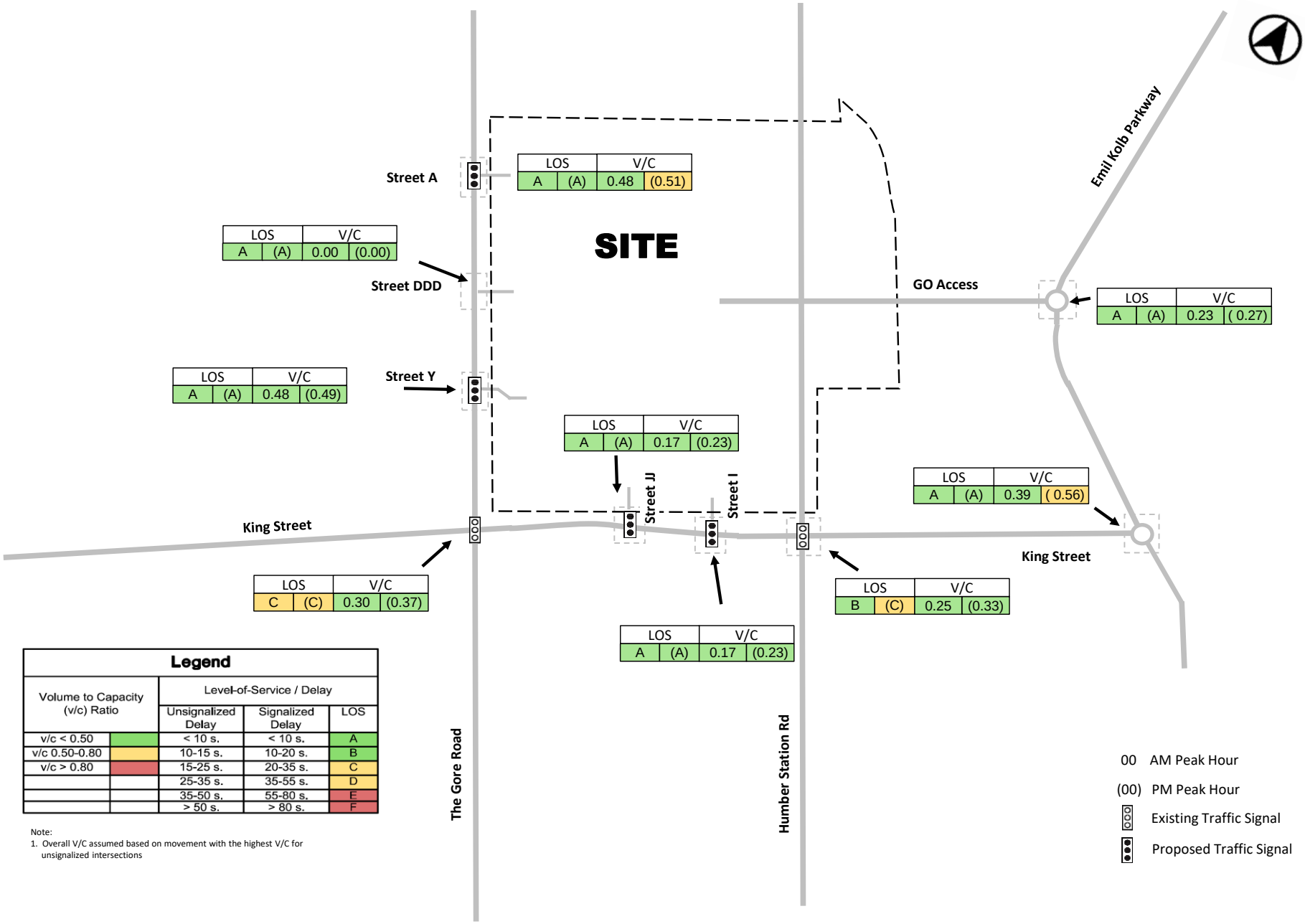

FIGURE 15D FUTURE BACKGROUND INTERSECTION OPERATIONS (2041) - EXTERNAL (With Improvements)

CALEDON STATION SECONDARY PLAN

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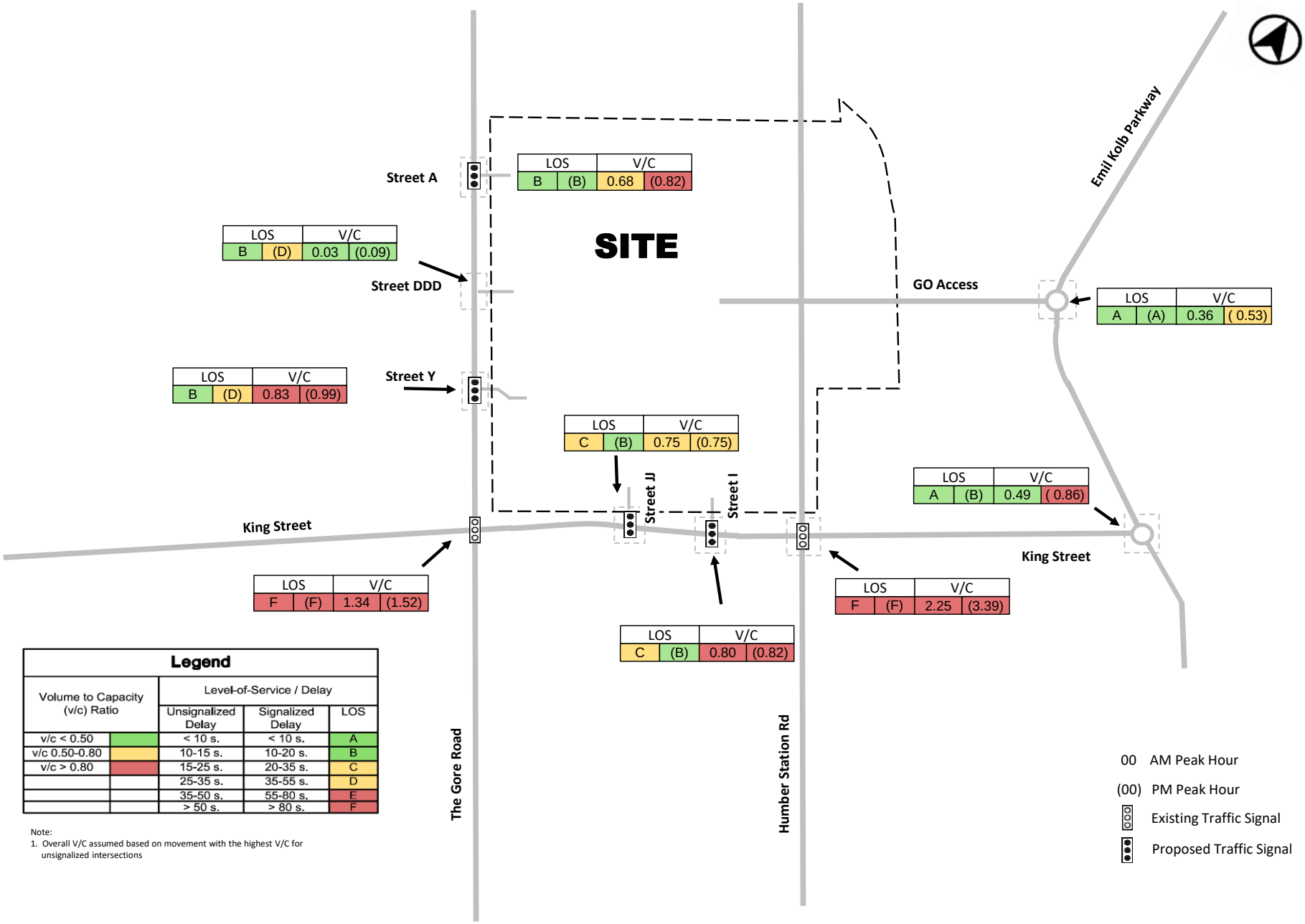
FIGURE 16A FUTURE TOTAL INTERSECTION OPERATIONS (2041) - INTERNAL (No Improvements)



Legend

Volume to Capacity (v/c) Ratio		Level-of-Service / Delay		
		Unsignalized Delay	Signalized Delay	LOS
v/c < 0.50		< 10 s.	< 10 s.	A
v/c 0.50-0.80		10-15 s.	10-20 s.	B
v/c > 0.80		15-25 s.	20-35 s.	C
		25-35 s.	35-55 s.	D
		35-50 s.	55-80 s.	E
		> 50 s.	> 80 s.	F

Note:
1. Overall V/C assumed based on movement with the highest V/C for unsignalized intersections

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FIGURE 16B FUTURE TOTAL INTERSECTION OPERATIONS - EXTERNAL (No Improvements)

CALEDON STATION SECONDARY PLAN

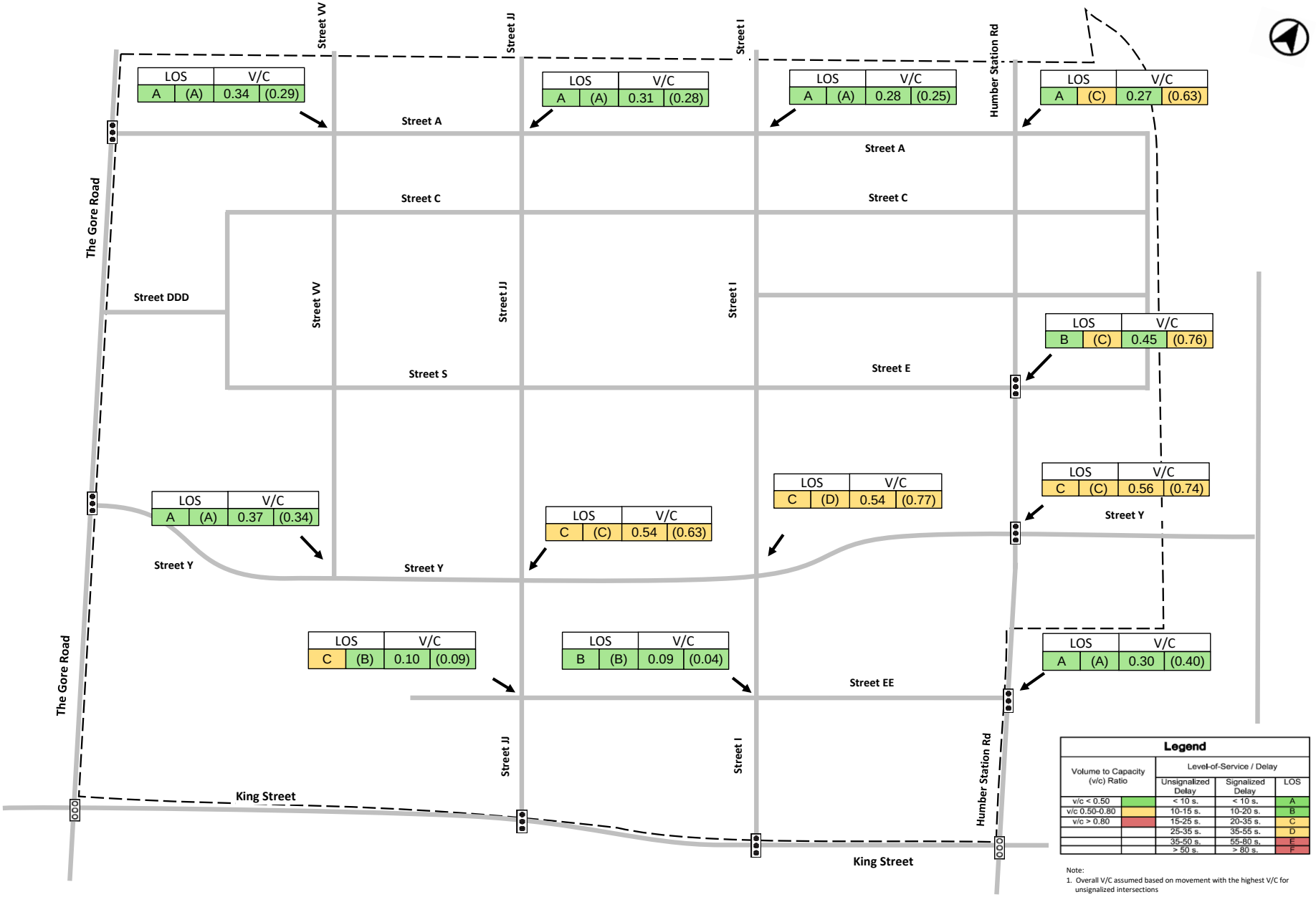

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FIGURE 16C FUTURE TOTAL INTERSECTION OPERATIONS (2041) - INTERNAL (With Improvements)

CALEDON STATION SECONDARY PLAN

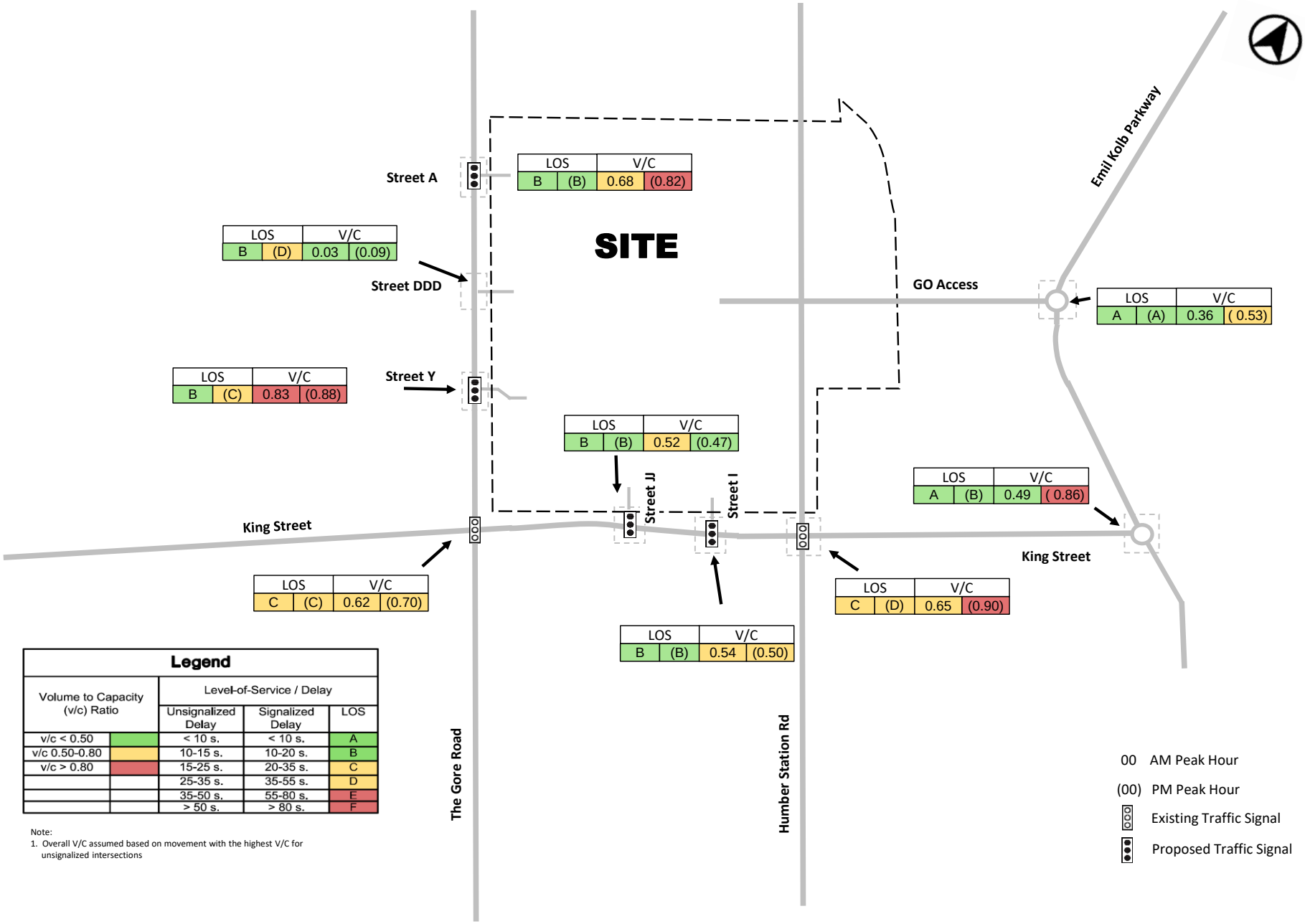


FIGURE 16D FUTURE TOTAL INTERSECTION OPERATIONS - EXTERNAL (With Improvements)

CALEDON STATION SECONDARY PLAN

6.3 RECOMMENDED ROAD IMPROVEMENTS

Recommended area road improvements are summarized in **Table 19** – Intersection Improvements and **Table 20** – Road Widenings for the road network surrounding the Caledon Station Community based on background growth and community traffic projections. Intersection configuration improvements are also summarized in Error! Reference source not found..

TABLE 19 RECOMMENDED ROAD NETWORK IMPROVEMENTS - INTERSECTIONS

Road	Recommended Intersection Improvements
Humber Station Road	• Widen intersection approaches at King Street / Humber Station Road to include exclusive turning lanes. • Provide continuous cycling facilities along Humber Station through entirety of the Caledon Station community.
King Street	• Signals at arterial/collector road intersections • Widen intersection approaches at King Street / Humber Station Road to include exclusive turning lanes. • Widen intersection approaches at King Street / The Gore Road to include exclusive turning lanes. • Monitor roundabout intersection operations at King Street / Emil Kolb Parkway as community grows • Introduce Grade-separated crossing of rail line[1]
Gore Road	• Provide exclusive left turn lanes at site accesses • Widen intersection approaches at King Street / The Gore Road to include exclusive turning lanes. • Minimum of two signals along Gore Road, to be located at arterial/collector road intersections
Go Access / Emil Kolb Parkway	• New Collector Road Connection between GO station and Emil Kolb Parkway • Introduce Grade-separated crossing of rail line • New roundabout or signal at GO Access Road and Emil Kolb Parkway

Notes:

1. Peel Region is currently planning to grade separate King Street at the CP rail line (south and east of Caledon Station. The need for this grade separation has been determined (by the Region of Peel) on the basis of existing and future traffic growth in the King Street corridor. This project would be necessary whether or not the Caledon Station Community is built. Policy directives drafted for the Secondary Plan also allow for fire or ambulance/EMS facilities in any land use designation within the Secondary Plan.

Corridor Road widenings along the boundary road network (arterials) are more closely tied to the broader area growth projection currently under review in the Region's RTMP and Town's MMTMP. We have included the corridor widenings anticipated under future total conditions for the Secondary Plan and area road network based on current findings in Table 20.

Roads within the Secondary Plan that are subject to future area growth related findings of the RTMP and MMTMP studies, will require coordination with the municipality once findings are made available.

TABLE 20 RECOMMENDED ROAD NETWORK IMPROVEMENTS – CORRIDOR WIDENINGS

Road	Recommended Corridor Improvement	Segment
Humber Station Road	• Widen from 2 to 4 lanes (up to the GO Station) • Maintain 2 lanes north of GO Station through "Hub" main Street environment. • Provide separated cycling facilities along the entire length of Humber Station Road.	King Street to GO Station entrance.
King Street	• Widen from 2 to 4 lanes • Provide separated cycling facilities along the entire length of King Street. • Design rail/road bridge crossing to accommodate 4 lanes and active transportation.	Gore Road to Emil Kolb Parkway
Gore Road	• Maintain 2 lanes to 2041 under current growth rates analysis. Localized widening to 4 lanes at The Gore Road and King Street. • Provide separated cycling facilities along the entire length of King Street.	North Site limits to King Street
E-W Collector	• Provide 2 lanes. • Design rail/road bridge crossing to accommodate 4 lanes and active transportation.	Emil Kolb to West of The Gore Road

Coordination with area growth related findings of the RTMP and MMTMP studies that are currently underway will be required. Bridge facilities are recommended to be designed to accommodate the ultimate width of the Region and Town's forecasting needs for number of lanes and active transportation to best allow for future widenings to occur (if/when needed) without rebuilding or re-designing key crossings.

Alternative design standards are proposed for the arterial (Humber Station) and collector road cross-sections within Caledon Station. The transit hub is further envisioned to have parking facilities at the north and south ends of the Hub, to further encourage active transportation in the core of the MTSA and discourage most of the GO train commuter parkers from entering the hub area with their personal vehicles.

North of the site, at the urban boundary limits - Humber Station is proposed to continue in its current condition. Collector connections have been identified to the east, northwest, west, and south where other urban expansion lands (and future GO ridership catchment areas) are identified within the ROP and draft OP. This also plans for minimal disruption on either side of Humber Station where it traverses the Greenbelt lands.

7.0 SIGNAL WARRANTS

Signal warrant analyses were undertaken for the proposed and potential signalized intersections along The Gore Road, King Street and Humber Station Road according to the Ontario Traffic Manual Book 12, and are attached in **Appendix G**. A signal warrant analysis was also undertaken for the proposed Emil Kolb Parkway / Street Y roundabout intersection as a high level assessment of the appropriateness of a roundabout at this location. A summary of the signal warrant analyses is provided in **Table 21**.

TABLE 21 SUMMARY OF SIGNAL WARRANT ANALYSES

Intersection	Justified?	Justification
King St / Street JJ	Yes	Justification 4 (4-hour)
King St / Street I	Yes	Justification 4 (4-hour)
The Gore Road / Street Y	Yes	Justification 4 (4-hour)
The Gore Road / Street A	Yes	Justification 4 (4-hour)
Humber Station Road / Street E	Yes	Justification 3 (Combination) and Justification 4 (4-hour)
Humber Station Road / Street Y	Yes	Justification 1 (Min. Volume), Justification 3 (Combination), and Justification 4 (4-hour)
Humber Station Road / Street EE	No	Not justified. Recommended to protect for potential future signal or signalized pedestrian crossing.
Emil Kolb Parkway / Street Y (roundabout)	Yes	Justification 3 (Combination) and Justification 4 (4-hour)

All collector/arterial intersections within the Caledon Station Secondary Plan are justified for signalization by either Justification 1, 3, or 4. Justification 3 is typically considered only after remedial measures designed to reduce delay have failed and Justification 4 is focussed on (among other characteristics) commuter-dominated roadways – with heavy demands for two or more hours in the AM/PM peaks, but considerably reduced demand for the remainder of the day. The arterial roadways in this study area are representative of commuter dominated activity during the peak periods. Given this study has a number of long term traffic estimates, and is subject to coordination with ongoing RTMP and MMTMP analysis – signal warrants are also recommended to be conducted for each stage of phasing to determine timing of signal implementation relative to development and area growth.

8.0 FUTURE STUDIES

Based on the work done to date before and during this traffic study in support of the Caledon Station Local Official Plan Amendment, the following future transportation studies have been identified as being necessary or potentially needed as they relate to transportation facilities within or in the vicinity of the Caledon Station Community:

- Studies necessary for approval of developments in Caledon Station:
    - This TIS update provides the capacity analysis for the Secondary Plan Collector Road Network that may relied upon as background information for Environmental Assessment (EA) requirements for the collector road network (including the East-West Link) and plan of subdivision applications.
    - Site specific traffic studies for non-residential uses, including schools.

- Studies potentially necessary before full build out of Caledon Station:
    - Environmental Study Report (ESR) for the grade separation of the East-West road and the CP rail line.
    - Traffic study for development of the GO station transit hub.
    - Transit Strategy Study (as identified and anticipated to be conducted by the Town of Caledon)

- Studies related to but not relevant to timing of Caledon Station approval or development:
    - ESR for the King Street Grade Separation. This will presumably be undertaken by the Region of Peel. As noted above, it is not necessary that this work commence or be completed prior to the commencement of development of Caledon Station. There is sufficient traffic capacity on the existing area road network to allow for residential occupancy to commence prior to the grade separation of King Street.
    - ESR's for the widening of King Street and The Gore Road. While not yet planned, the fact that these roads are boundary roads means that there may be some shared concerns with the Region of Peel with respect to the future rights-of-way, and the handling of storm water and adjacent to the rights-of-way. Future coordination with area growth related findings of the RTMP and MMTMP studies that are currently underway is recommended.

APPENDIX A:

Caledon Station Preliminary Land Use Plan, Framework Plan, Road Hierarchy Plan, and Active Transportation Network Plan

As Provided by GSAI, Gerrard Design, and NAK Design Strategies

TOWN OF CALEDON

Schedule C-8

(A Subschedule to Schedule "C")

CALEDON STATION SECONDARY PLAN: LAND USE PLAN

- Low Density Residential
- Medium Density Residential
- Mixed-Use
- GO Transit Hub
- Institutional
- Open Space Policy Area
- Environmental Policy Area
- Boundary of Greenbelt Plan Area
- Stormwater Pond Facility
- Settlement Boundary
- Elementary School
- Collector Road
- Railway

Base Data Source: Teranet, 2013

0 0.125 0.25 0.5 km

HUMBER STATION RD.

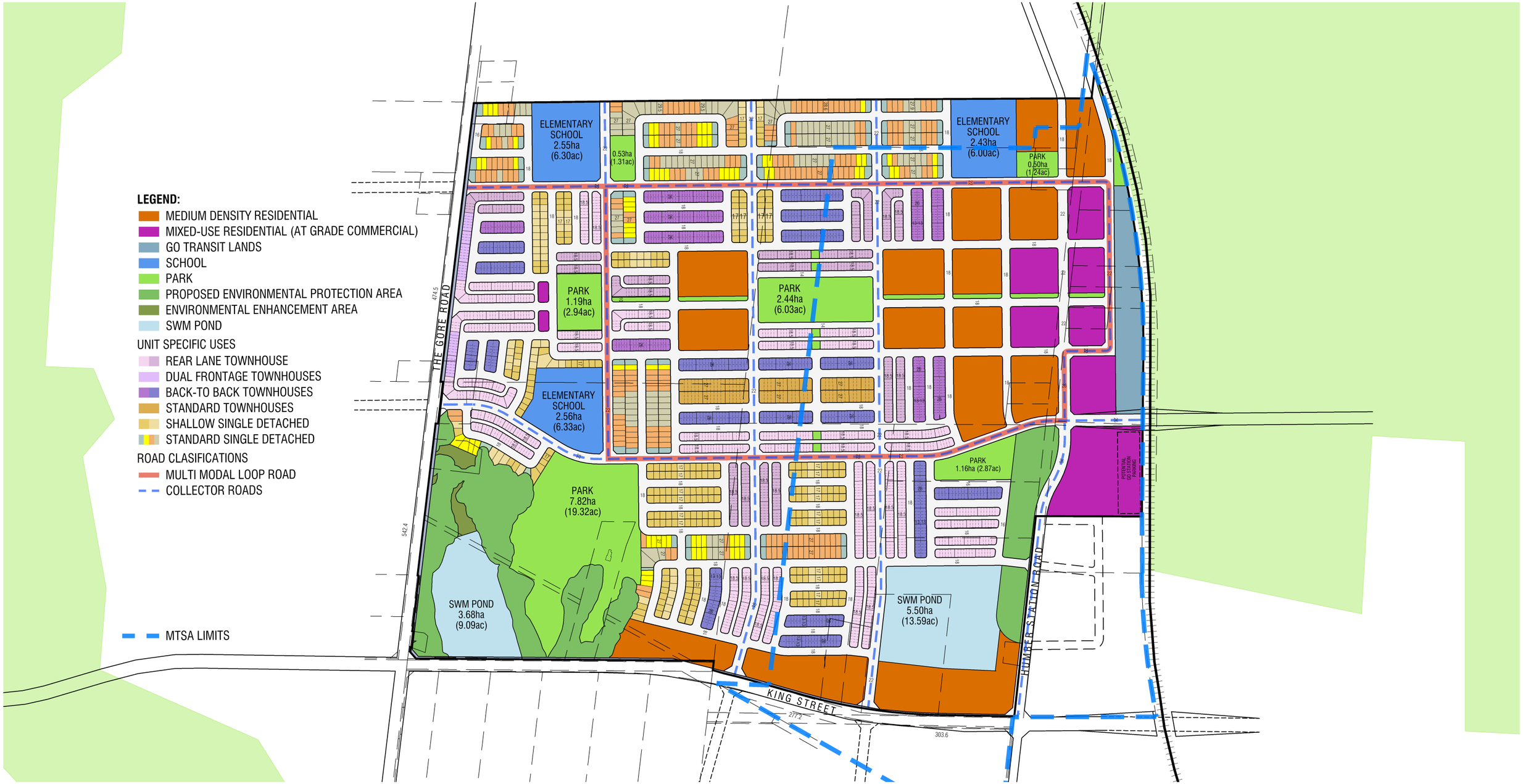
THE GORE ROAD

KING STREET

CP RAILWAY

HUMBER STATION RD.

KING STREET



DRAFT

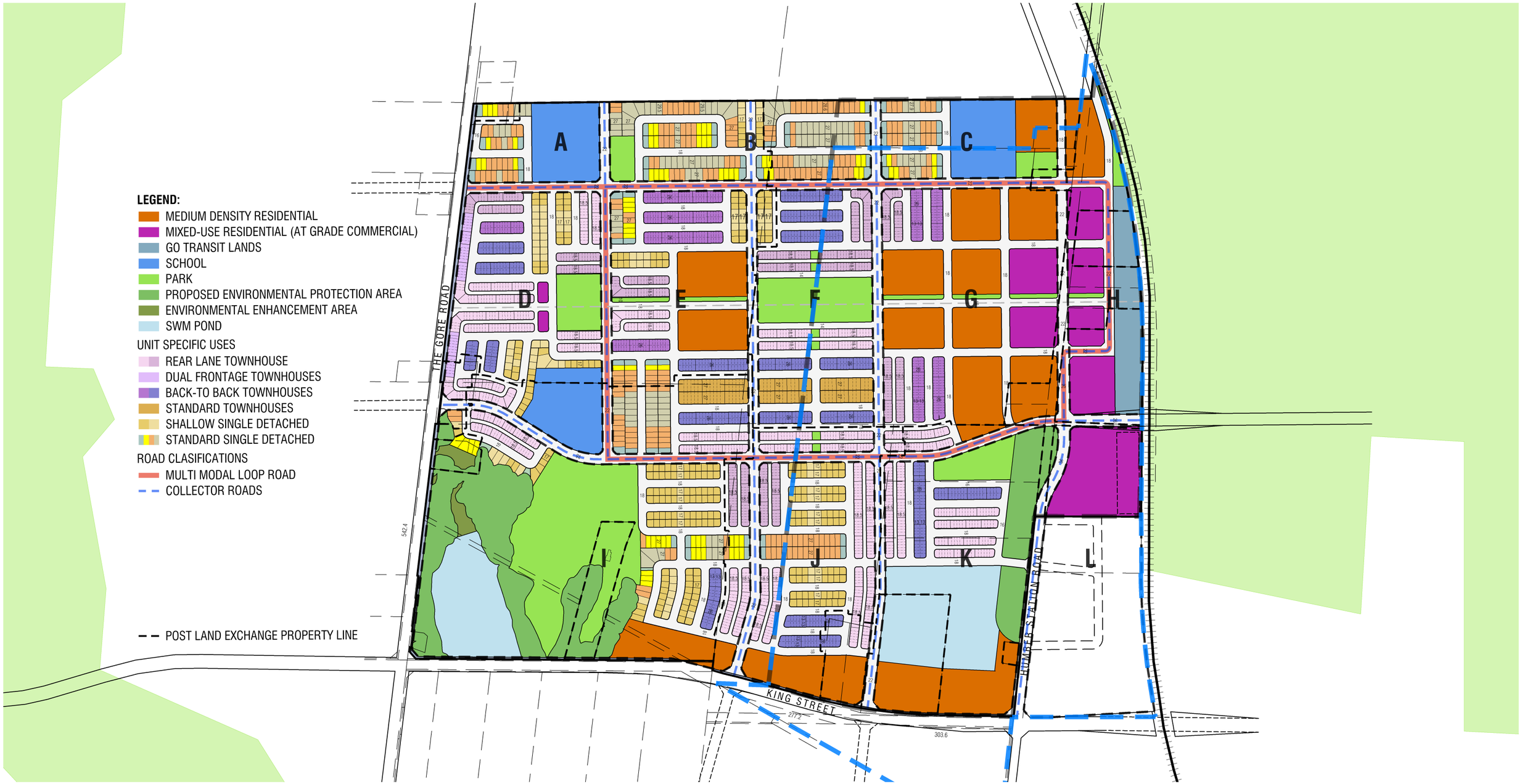
- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.

GERRARD DESIGN

CALEDON STATION FRAMEWORK PLAN

MAY 5, 2023
PROJECT 1420
SCALE 1:8000

CP-37



- All Units In Metric Unless Otherwise Noted.
- Base Information Obtained From Various Sources And Is Approximate.
- Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.

DRAFT

GERRARD DESIGN

MACVILLE | Caledon, Ontario

BLOCK PLAN CONCEPT

MAY 1, 2023

PROJECT 1420

SCALE 1:8000

CP-37

ELEMENTARY SCHOOL

PARK

ELEMENTARY SCHOOL

PARK

THE GORE ROAD

PARK

PARK

ELEMENTARY SCHOOL

PARK

PARK

SWM POND

SWM POND

KING STREET

HUMBER STATION ROAD

Proposed Community Bus Route / Shuttle

TRANSIT HUB

EMIL KOLB PARKWAY

Proposed Local Bus Route Connecting Bolton to GO Transit

LEGEND

- SITE BOUNDARY
- REGIONAL ARTERIAL (30.0m)**
- TOWN ARTERIAL (26.0m)**
- TOWN COLLECTOR (22.0m)**
- TRANSIT ROUTING
- TRANSIT STREET (22.0m)
- LOCAL ROADS (18.0m, 16.0m, 14.0m, 8.0m)
- GO TRANSIT RAIL LINE

** All Arterial and Collector Roads to be designed to provide separated cycling facilities, bus service, and two-sided sidewalks.

ELEMENTARY SCHOOL

PARK

ELEMENTARY SCHOOL

PARK

PARK

PARK

ELEMENTARY SCHOOL

PARK

PARK

SWM POND

SWM POND

THE GORE ROAD

KING STREET

HUMBER STATION ROAD

TRANSIT HUB

EMIL KOLB PARKWAY

LEGEND

- SITE BOUNDARY
- REGIONAL ARTERIAL
- BIKE LANE / CYCLE TRACK
- MULTI-USE PATH
- MULTI-USE PATH CONNECTION
- PROPOSED TRAIL NETWORK
- PARK / PARKETTE
- SWM POND
- VISTA BLOCK
- ENVIRONMENTAL POLICY AREA (EPA)
- EPA ENHANCEMENT
- GO TRANSIT RAIL LINE

APPENDIX B:
LOPA Transportation Study Terms of Reference

LOPA Transportation Study
TERMS OF REFERENCE

In support of the
Macville Community
Local Official Plan Amendment

December 2020

Town of Caledon

1.0 INTRODUCTION

1.1 Planning Background

BA Consulting Group represents the Bolton Option 3 Landowners Group in connection with seeking the necessary approvals required to permit the development of the Macville Community lands for urban development including residential, commercial, mixed uses, community uses and related servicing and infrastructure. The lands subject to this proposal consist of approximately 182 hectares (450 acres) of land and are generally located north of King Street, east of The Gore Road and west of the CP Railway tracks. The subject lands are municipally known as 14396 Humber Station Road; 14384 Humber Station Road; 14226 Humber Station Road; 14206 Humber Station Road; 14196 Humber Station Road; 14166 Humber Station Road; 14100 Humber Station Road; 14042 Humber Station Road; 14155 The Gore Road; 0 The Gore Road; 0 The Gore Road; 14211 The Gore Road; 14275 The Gore Road; 0 Humber Station Road; 14389 The Gore Road; 0 King Street; 0 King Street; 7844 King Street; 7816 King Street; 0 King Street; 7640 King Street (herein referred to as the "Subject Lands").

The eastern portion of the Macville Community lands, consisting of lands on both sides of Humber Station Road, north of King Street, have been the subject of Regional Official Plan Amendment 30 (ROPA 30) which was recently approved by LPAT and succeeds in bringing these lands into the Bolton Rural Service Centre Settlement Area Boundary. Accordingly, the eastern portion of these lands are designated "Urban Area" in the Region of Peel Official Plan. The western portion of the Macville Community lands, consisting of lands north of King Street and east of The Gore Road are currently designated "Rural Area" within the Region of Peel's Rural System in the Region of Peel Official Plan and "Prime Agricultural Area" in the Town of Caledon's Official Plan. It is recognized that the western portion of the Macville Community lands are currently located outside of the Settlement Area Boundary of the Bolton Rural Service Centre and accordingly, in order to permit development of these lands for urban-related land uses, these lands will need to brought into the Bolton Rural Service Centre Settlement Area Boundary. This review is currently underway at the Region of Peel through the Region's 2051 Municipal Comprehensive Review of the Region's Official Plan and it expected that final Regional adoption of the new Regional Official Plan will occur before the end of 2021. Further, a local Official Plan Amendment is required to assign urban land use designations to all of the Macville Community lands.

This Terms of Reference for a Transportation Study represents one of several component studies to be undertaken as input to the Local Official Plan Amendment process to establish a Secondary Plan for the Macville Community in Bolton. This Secondary Plan will facilitate the development of these lands for residential and mixed-use development with related complimentary uses, such as open spaces, parks, trails, commercial uses, the Bolton GO Station, the Natural Heritage System (NHS), and stormwater management facilities.

This Terms of Reference sets out the tasks to be addressed and the expected deliverables of the study. The results of the study will contribute to the approval of the LOPA.

1.2 STUDY AREA

The Macville community lands are bounded to the west by The Gore Road, to the east by Humber Station Road and the Canadian Pacific (CP) MacTier subdivision rail line, and to the south by King Street, as shown in the figure on the following page.

The LOPA Transportation Study will focus on the impacts of the proposed community on the existing adjacent road network, namely King Street, The Gore Road, Humber Station Road, and Emil Kolb Parkway. There is a proposed new road link connecting the community to Emil Kolb Parkway to the north of King Street which will also be assessed.

Planning and design of the internal community road network is still underway, and as such will not be analyzed in this report. A subsequent and more comprehensive transportation study will be prepared in coordination with later submissions.

2.0 STUDY PURPOSE

The purpose of the Transportation Background Study is to assess and recommend the transportation infrastructure required to support the development of the Macville community.

The transportation analysis will be undertaken at a relatively high level to assess the road network impacts of the traffic generated and attracted by the development. The study will be of sufficient detail to assess arterial road network performance.

The determination of the transportation impacts will be undertaken in conjunction with an evaluation of through traffic growth on the existing arterial road corridors.

In addition, the report will speak in a qualitative way to the proposed character of the internal road network and cross sections, the significant role of integrating high order and community transit into the planning and design of Macville right from the start of development, the role of the community in supporting both Caledon and Peel active transportation and sustainability objectives, and the need for infrastructure such as grade separated access across the adjacent CP rail line.

The transportation issues to be examined in this study are set out below.

- Arterial road network requirements.
- Traffic controls at major road intersections.
- Roles of the arterial, community and neighbourhood streets within the community.
- External arterial road and internal community road patterns.
- Traffic distribution.
- Transit and active transportation strategy to reduce single-occupant auto use during the peak periods and to optimize/minimize transportation infrastructure.
- Integration with GO rail transit and the resulting impacts on trip generation rates.
- Mode split assumptions for auto, transit, walk, and cycling.
- Bicycle routes and pedestrian trail network, and integration with the rest of Caledon.
- Traffic calming on internal roads.

- On street and off street parking strategy and parking standards to support TDM and to encourage transit usage.

3.0 LOPA TRANSPORTATION STUDY

The transportation study will include principles, goals, and objectives with respect to transportation, consistent with the community vision.

Review of Past and Current Studies

The consultant will review past and current studies related to Macville with regards to their relevant policies, conclusions, and recommendations. Relevant data will be extracted from previous studies and applied to this study, if appropriate.

Transportation Network

Information on the existing and planned transportation system, including all surface transportation modes –highways, arterial roads, collector roads, pedestrian, trail, and bicycle networks and surface transit routes will be reviewed. Existing rights-of-way, designated rights-of-way, and roadway classifications will also be reviewed. The study will also discuss the manner in which innovative and alternative right-of-way solutions are being contemplated for the Macville community, in support of the Town of Caledon and Region of Peel's objectives with respect to sustainability and reduced environmental burdens.

Traffic Counts

All relevant traffic counts currently available from Peel Region, and the Town of Caledon will be collected. Any missing traffic data that is not available through these sources will require additional counts to be undertaken. This information will be used to assess existing conditions and to provide input into forecasting future travel demand.

Existing Transportation Network Constraints and Opportunities

The existing road transportation network will be analyzed (as measured using level of service/volume to capacity ratios) during the weekday AM and PM peak hours to identify existing capacity deficiencies. This will be conducted at the intersection level. This analysis will identify existing capacity problems and the magnitude of these problems.

Study Horizon

Forecasting and analysis of the future road network traffic patterns in the study area will be undertaken for an ultimate build-out horizon of 2031. The weekday AM and weekday PM peak hour travel demand will be evaluated.

Traffic Generation and Mode Split

Forecasts of future traffic generated by the Secondary Plan Area will be based on vehicle trip generation rates for each type of land use and will reflect expected transit modal splits, adjustments for live/work targets, adjustments for TDM strategies, proportion of walking/cycling trips, and auto occupancy.

Sources for trip generation rates will include TTS, ITE Trip Generation publication.

The expected transit mode splits for this development and for background traffic growth will be rationalized based on consideration of several factors. The factors that will be reviewed, but not limited to, include:

- proposed transit network;
- expected service frequencies/headways;
- land use densities;
- average walking distances to bus stops and stations, and;
- built-form.

Traffic Distribution

The distribution of traffic generated by the Secondary Plan Area will rely on TTS data. The distribution will be documented and expressed as percentages via cardinal direction and routes used for review.

Land Use Scenarios

Background traffic growth in the study area will be accounted for by determining appropriate corridor growth percentage based on historic traffic count data for King Street, The Gore Road, and Humber Station Road.

Forecast traffic growth will be determined from the most current residential and commercial development estimates developed for the community.

Network Scenarios

The planned 2031 arterial road network will be utilized as the base future transportation network and will reflect current municipal and regional capital programs, and other studies as appropriate.

Future Transportation Network Problems and Needs

Selected intersection analysis will also be performed as required to assess the operation of major road intersections and identify any deficiencies. Intersection analysis will be conducted through use of Trafficware's Synchro Capacity Analysis software, version 9.0 and the Arcady software for Roundabouts. Mitigation measures and timing of improvements to the transportation network will be recommended to alleviate impacts to the adjacent

neighbourhoods and road network. The analyses will follow the Region of Peel Synchro Guidelines.

Future Studies
The need for and scope of specific future Environmental Assessment and/or Secondary Plan studies will be identified and summarized. Where possible the desired timing of these studies will be identified.

4.0 COMMUNITY TRANSPORTATION REQUIREMENTS

Internal Transportation Network Requirements

The Macville community planning team have developed a preliminary transportation network and community plan, including a set of proposed road cross sections. These will be discussed with respect to:

- adherence to the principles, goals and objectives established;
- compliance to Town and Region standards and bylaws;
- sustainability;
- support for the development, through transportation accessibility and service;
- network connectivity and continuity;
- community impacts;
- impacts on the natural environment; and
- feasibility of the improvements.

Sustainability and Support for Transit and Active Transportation

The integration of a high order transit hub into the community is of great significance in determining the location and structure of Macville. The:

- early integration of high order and community transit into the planning and design of Macville right from the beginning,
- role of the community in supporting both Caledon and Peel active transportation and sustainability objectives, and
- the need for investment to provide grade separated access across the adjacent CP rail line will be addressed.

5.0 TRANSPORTATION STUDY REPORT

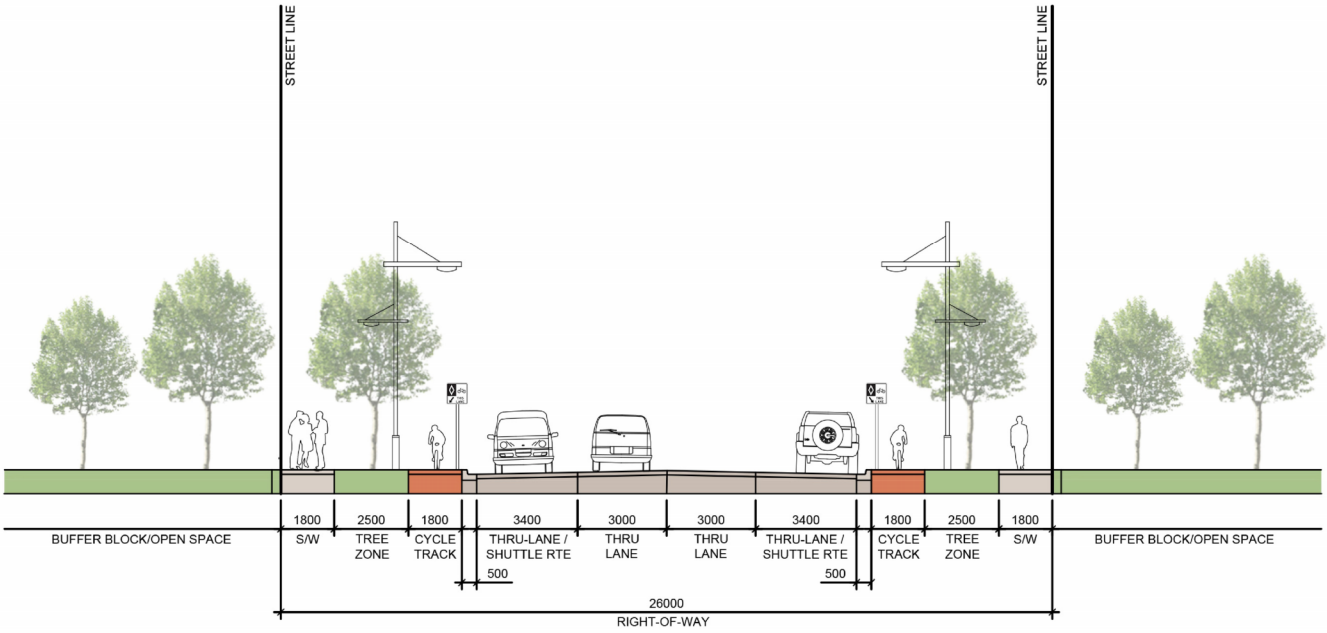
The findings, conclusions, and recommendations of the Transportation study will be documented in a draft summary report that will be prepared for review and approval by the Town of Caledon. Once all comments from interested parties have been reviewed and resolved the summary report will be finalized and submitted to the Town of Caledon.

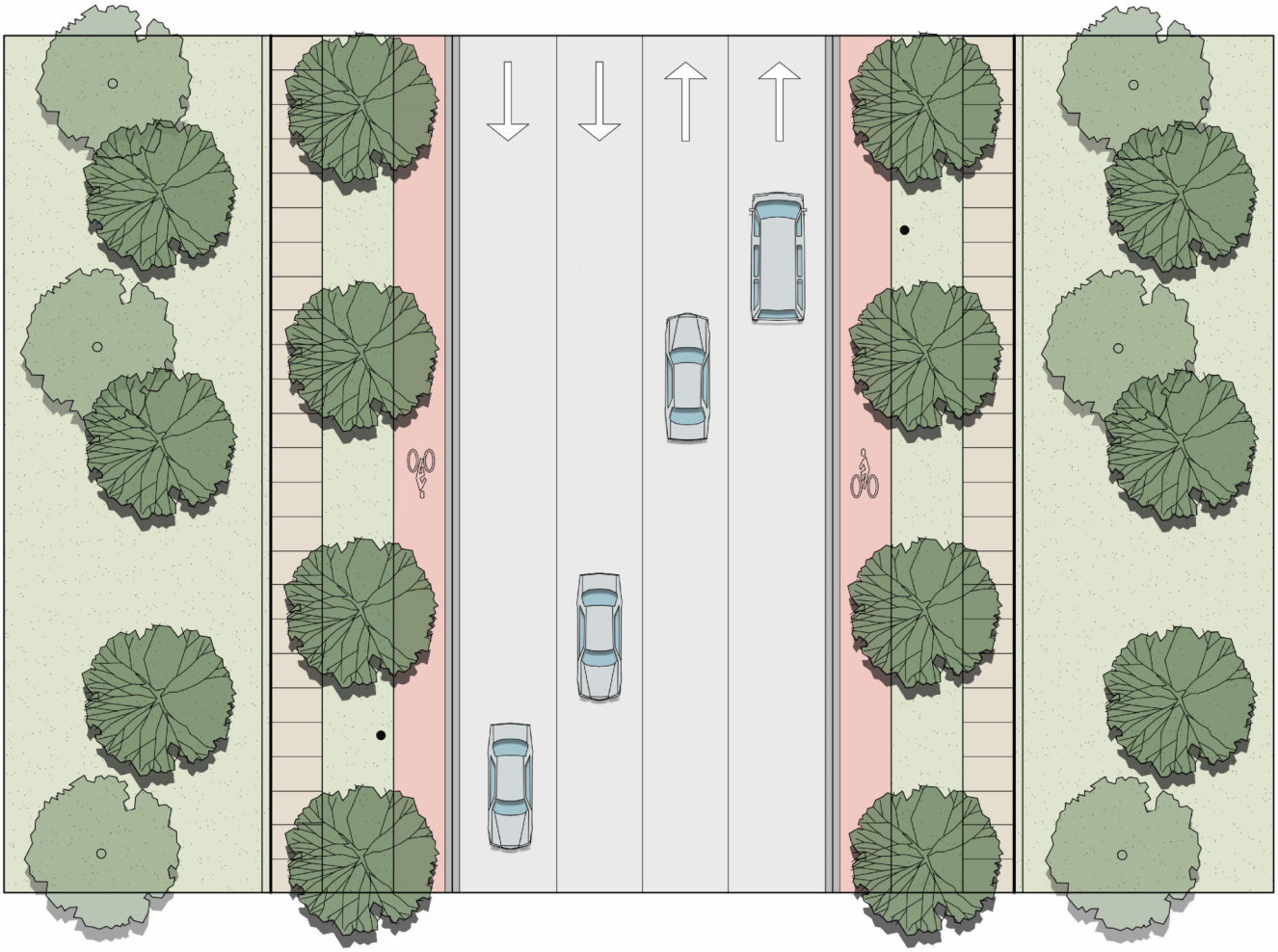
The draft and final reports will consist of the following:

- an executive summary;
- a description of the report methodology;
- an explanation of the various assumptions, considerations, evaluation criteria and overall assessment that lead to the conclusions and recommendations of the study;
- all relevant maps and tables as required to illustrate data, analytical findings, and recommendations respecting all the key issues identified in the Terms of Reference.

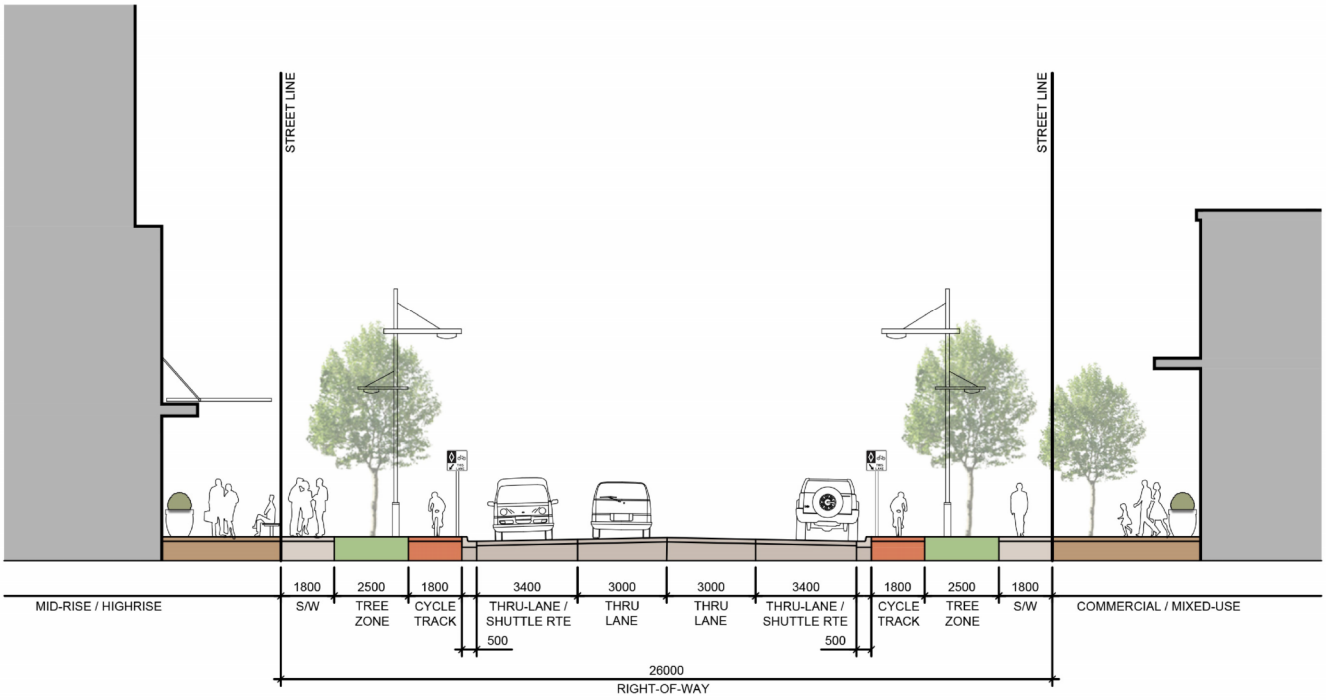
APPENDIX C:
Concept Road Cross-Sections

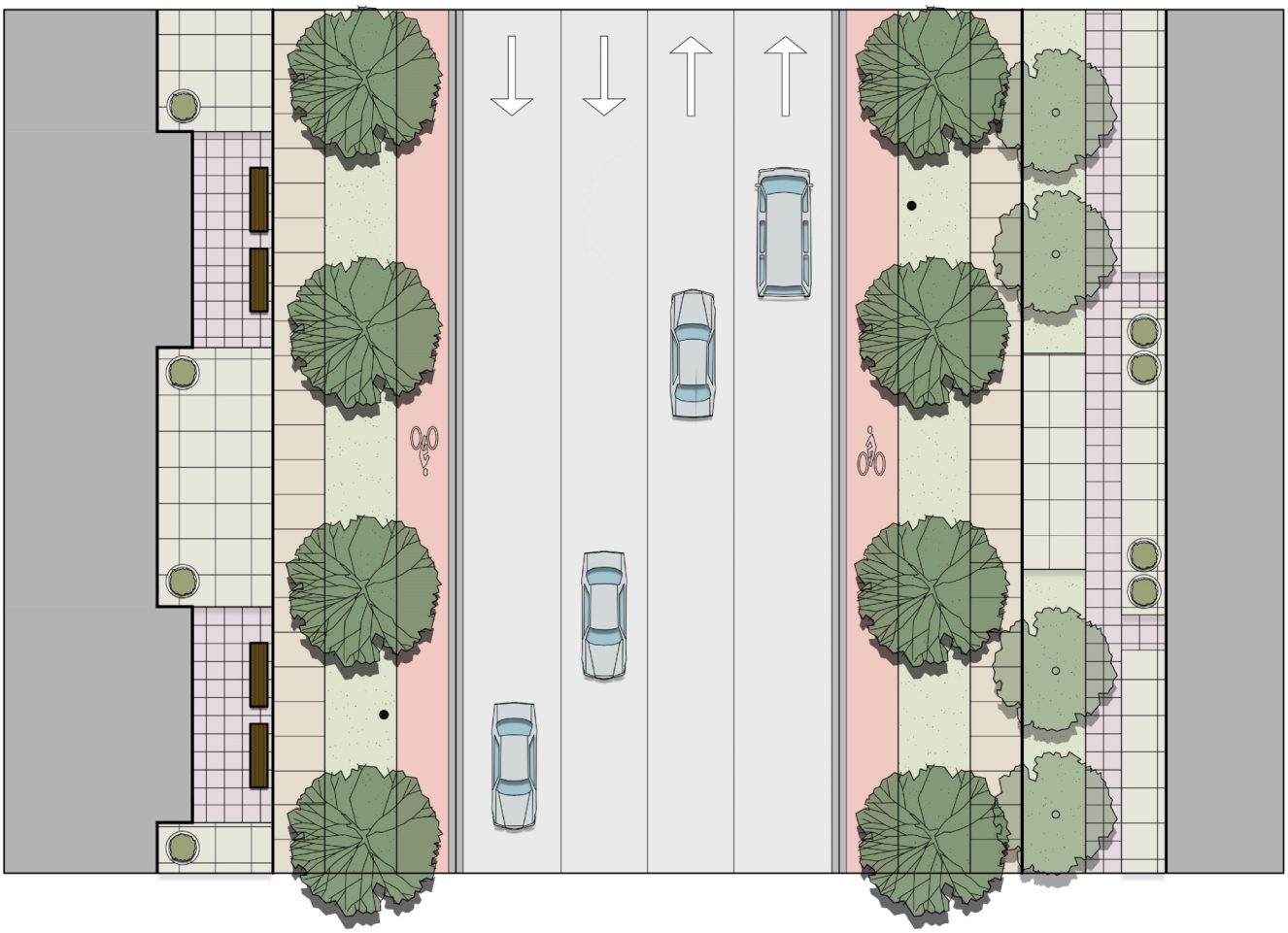
As Provided by NAK Design Strategies



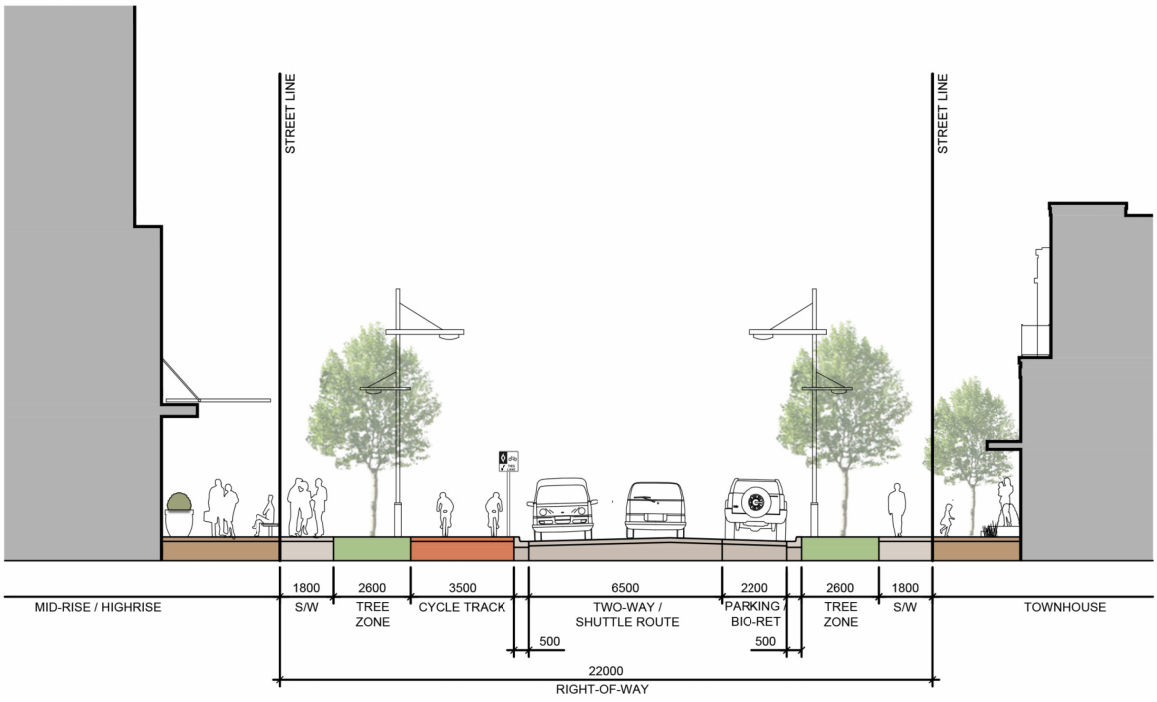


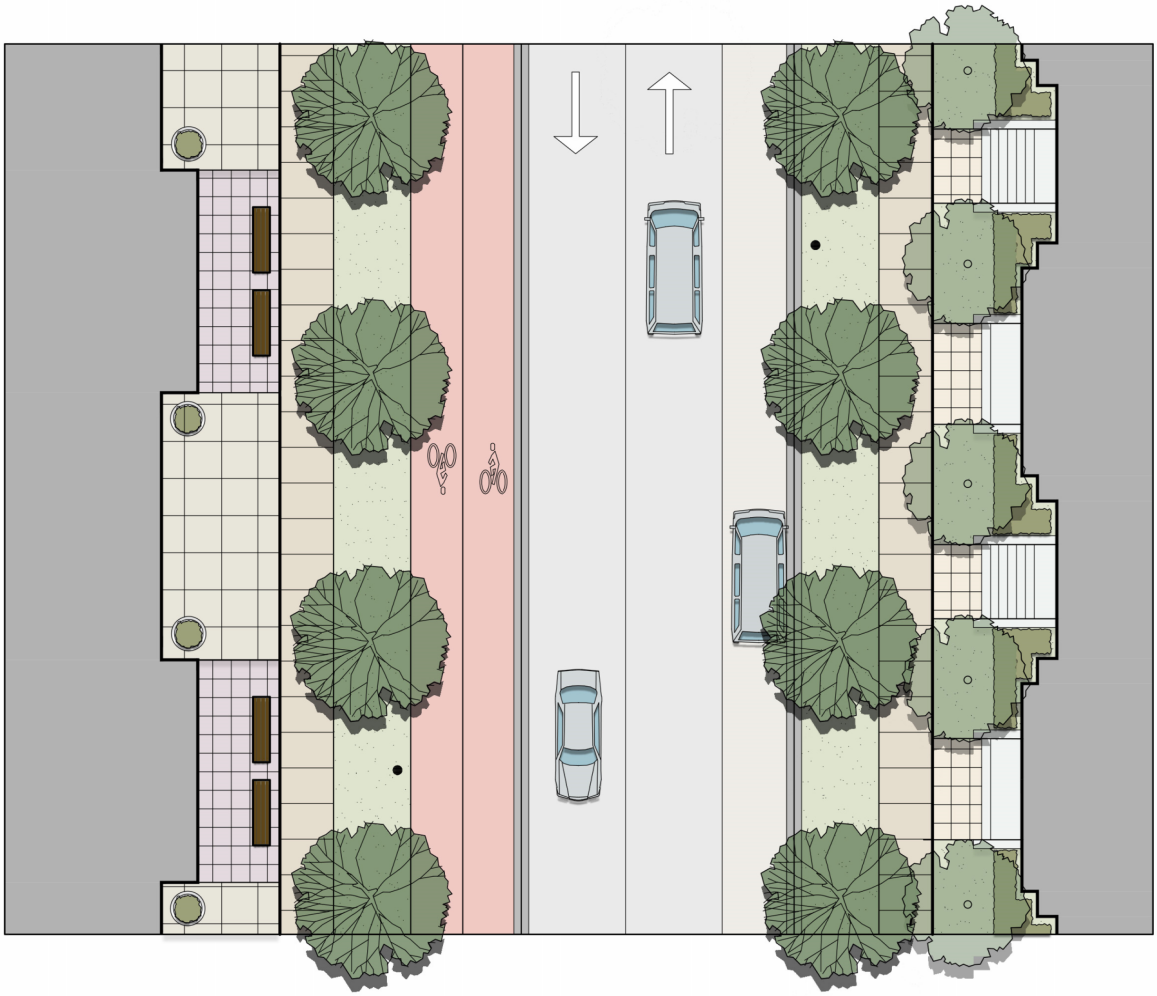
MAJOR COLLECTOR - 26.0m R.O.W.





MAJOR COLLECTOR (HUMBER STATION) - 26.0m R.O.W.





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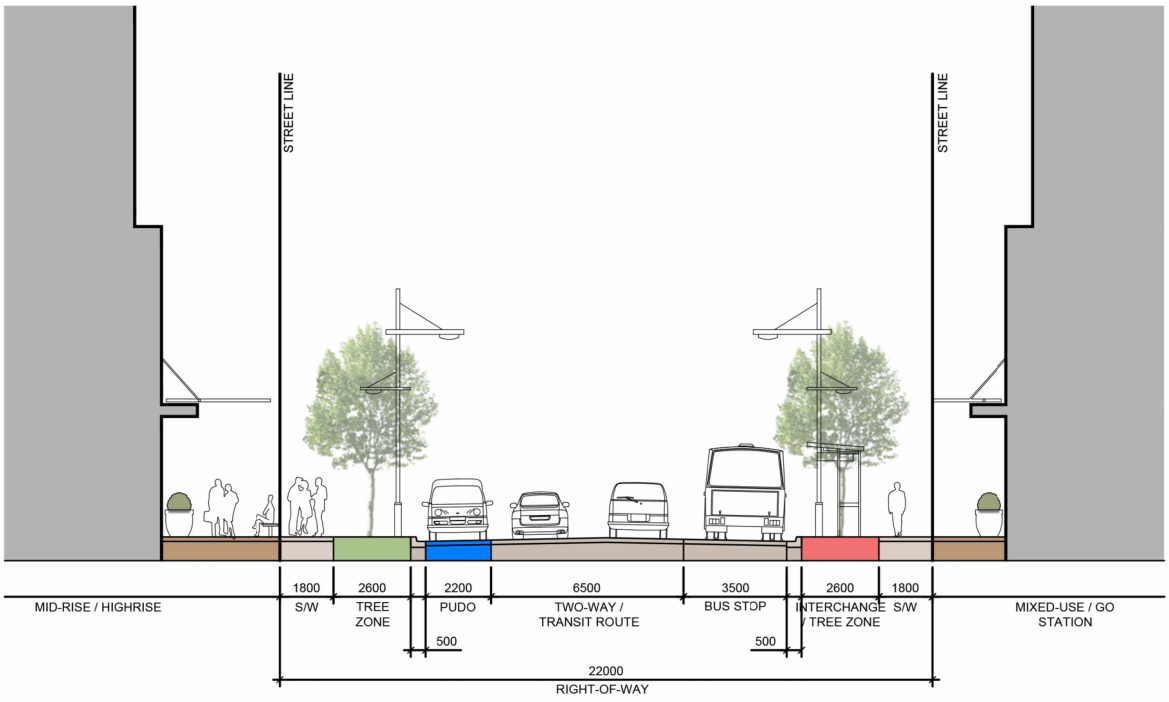
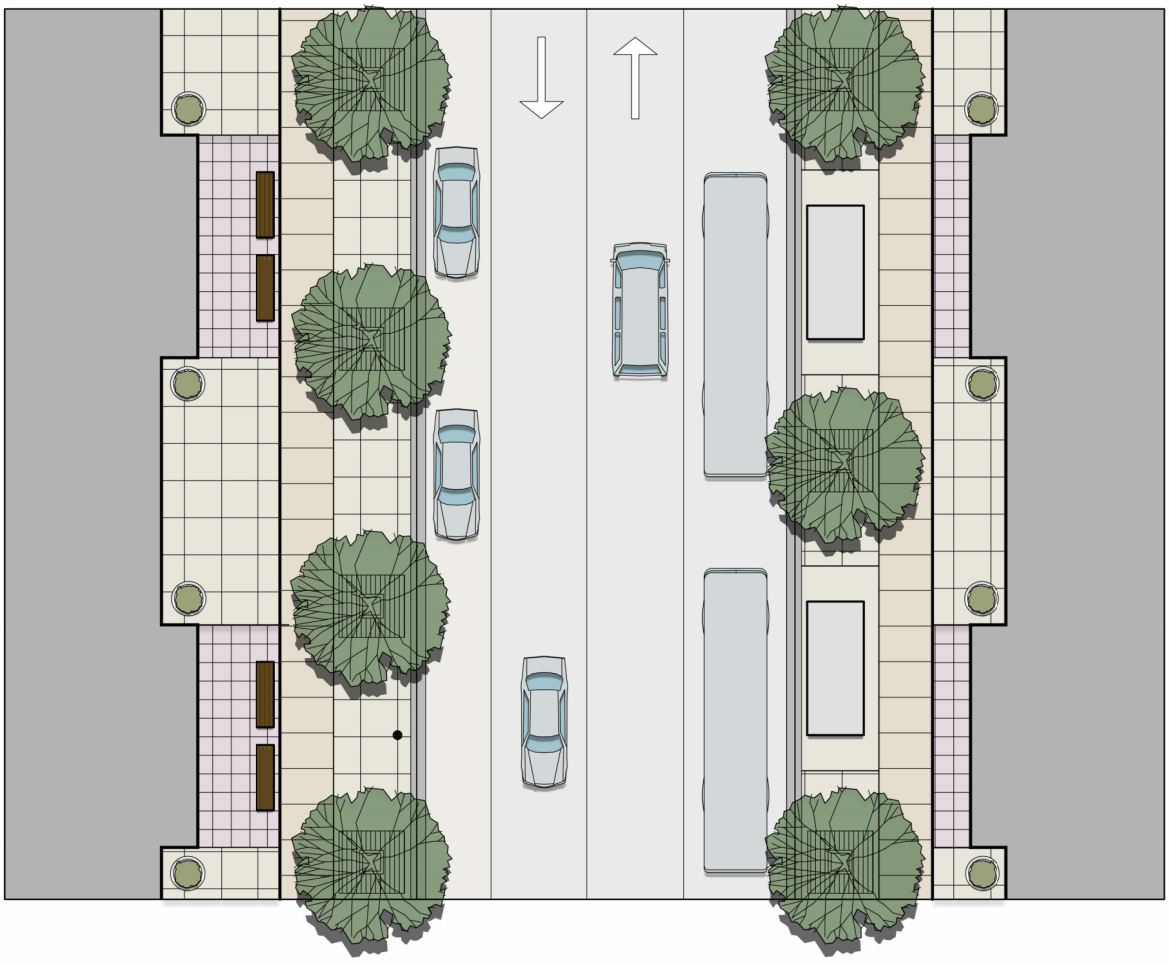
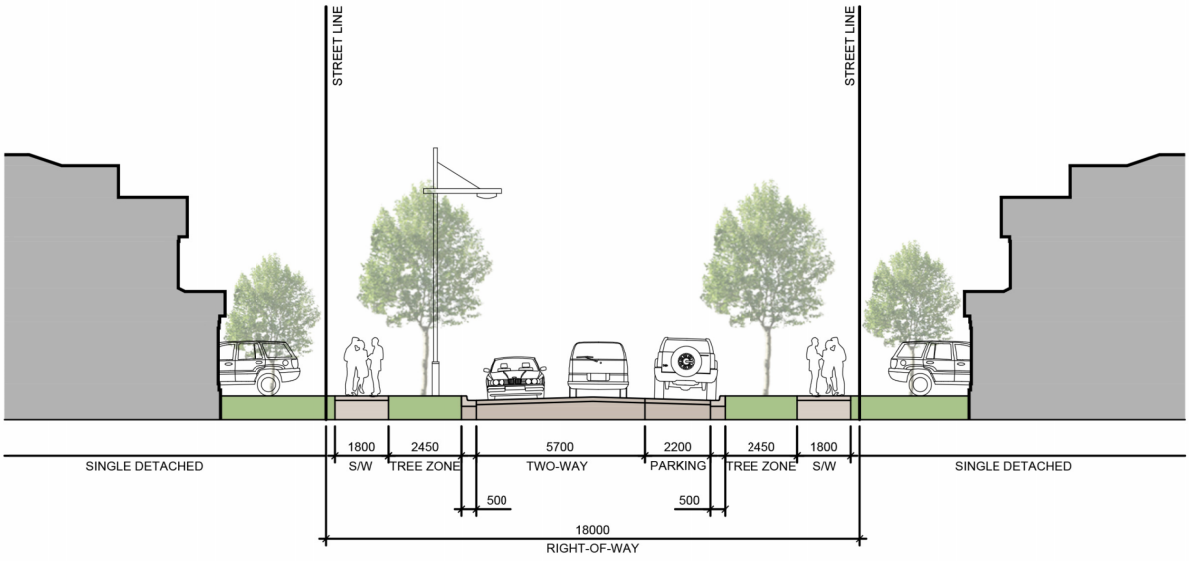
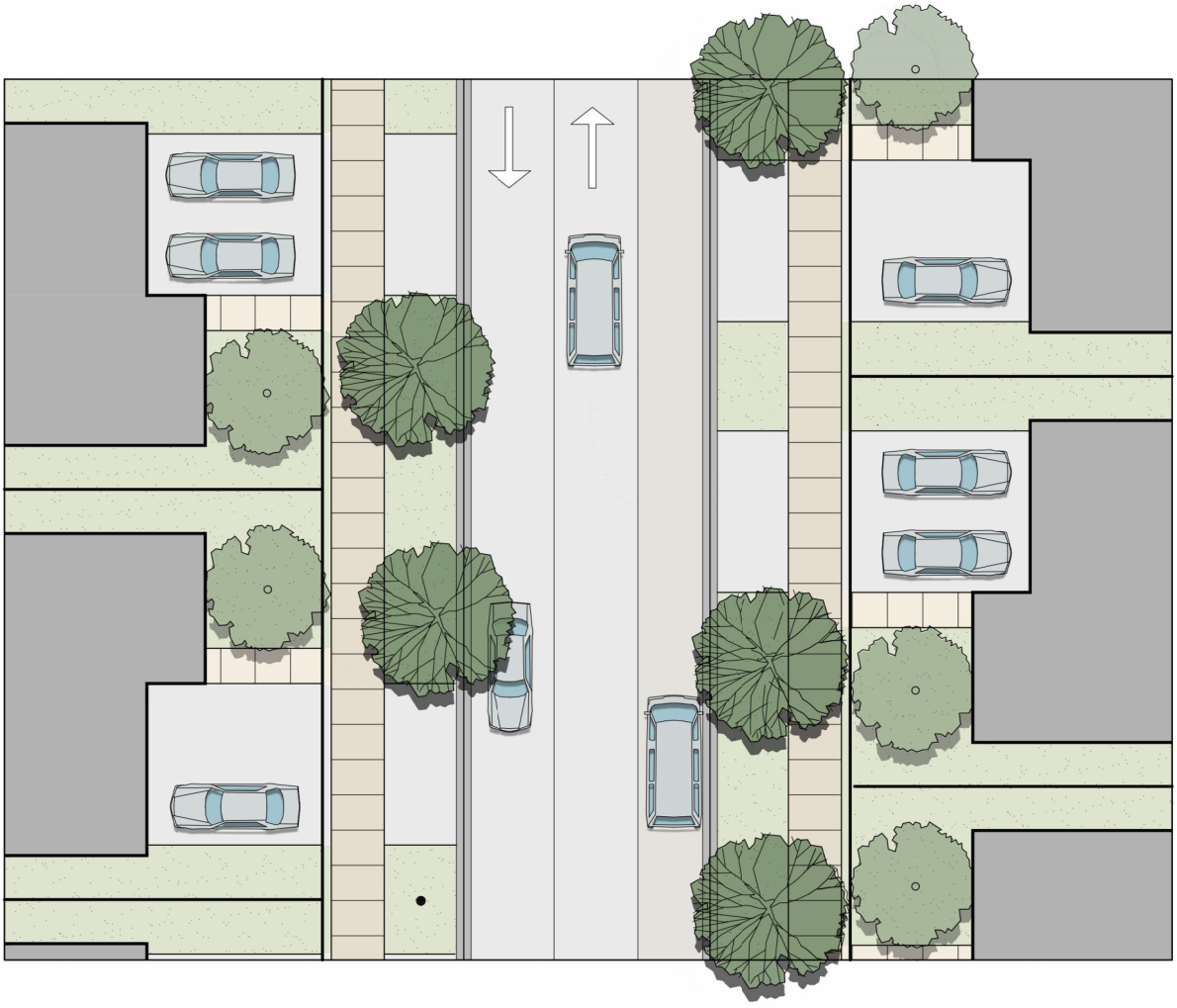


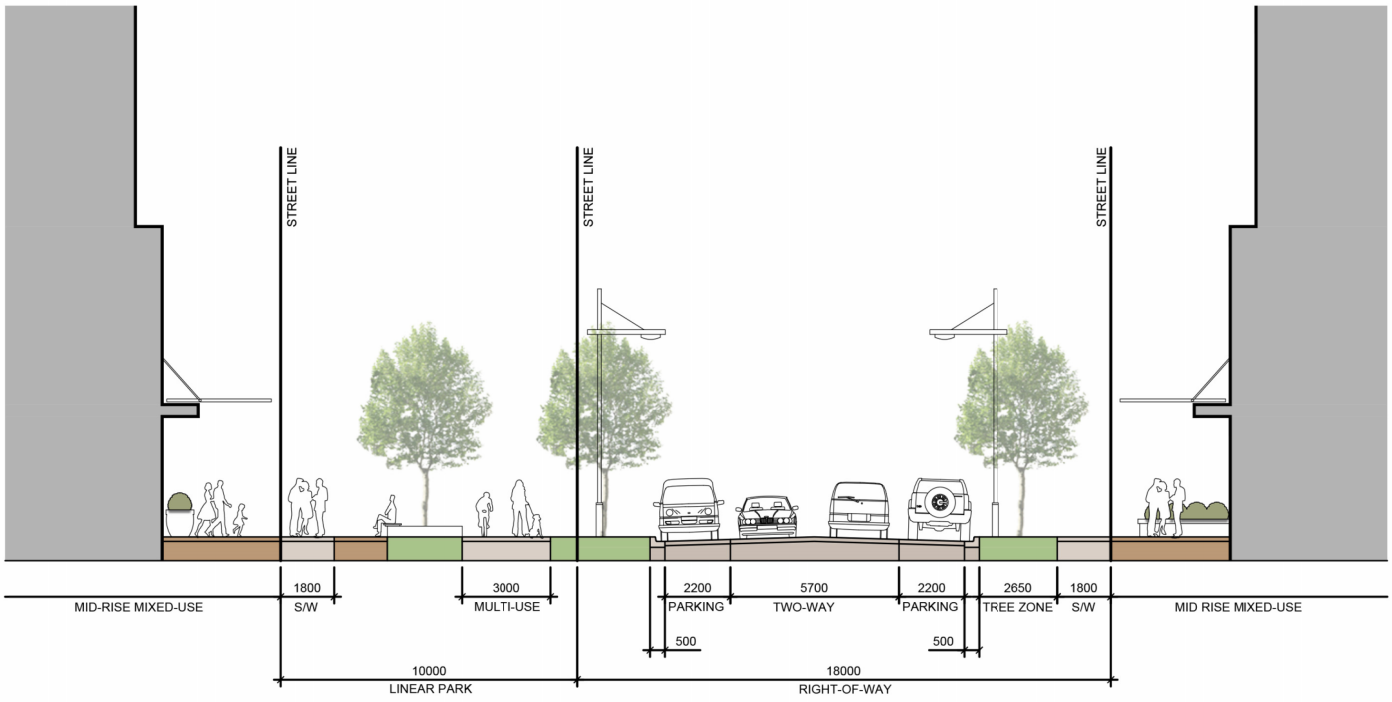


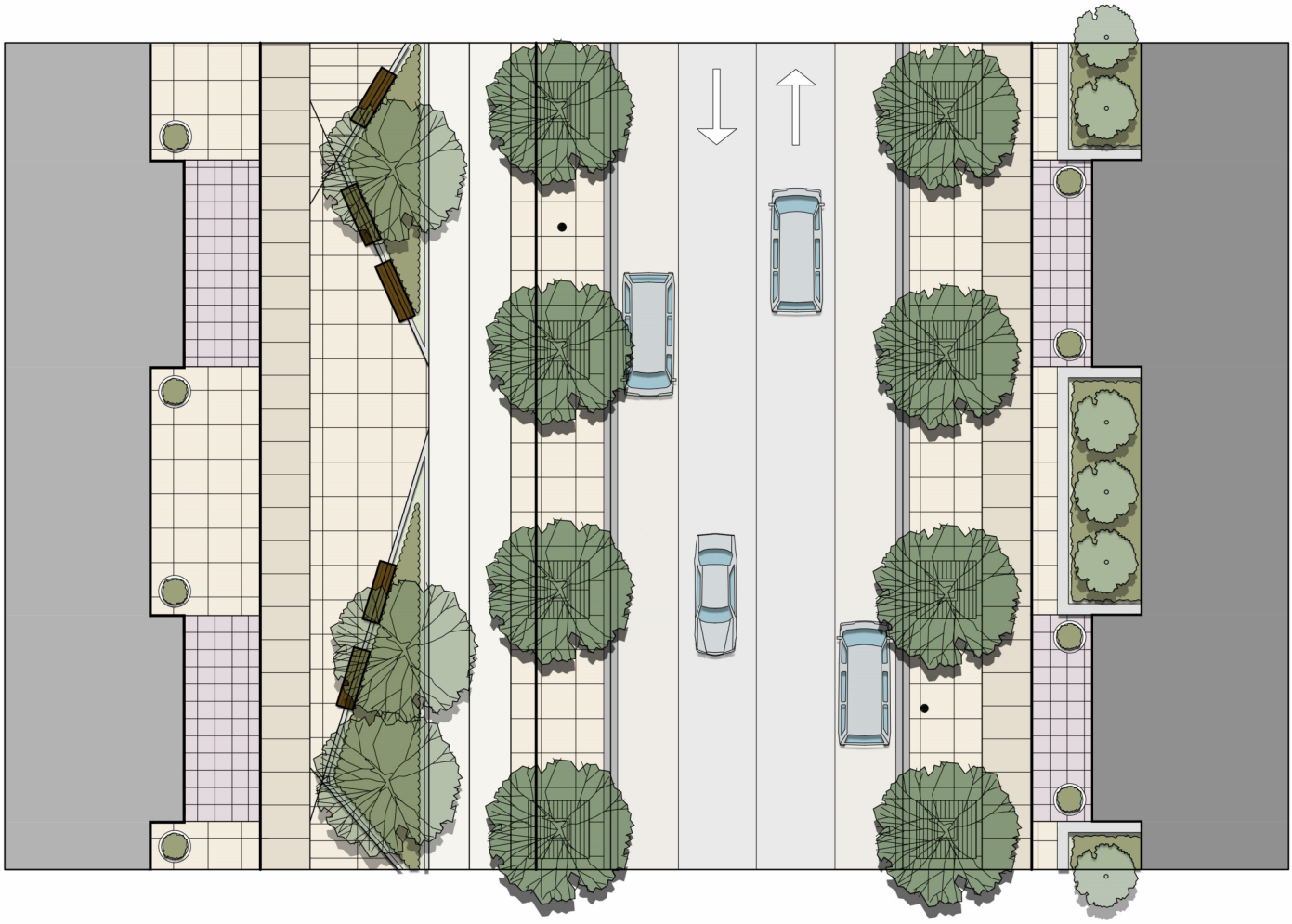
TRANSIT STREET - 22.0m R.O.W.



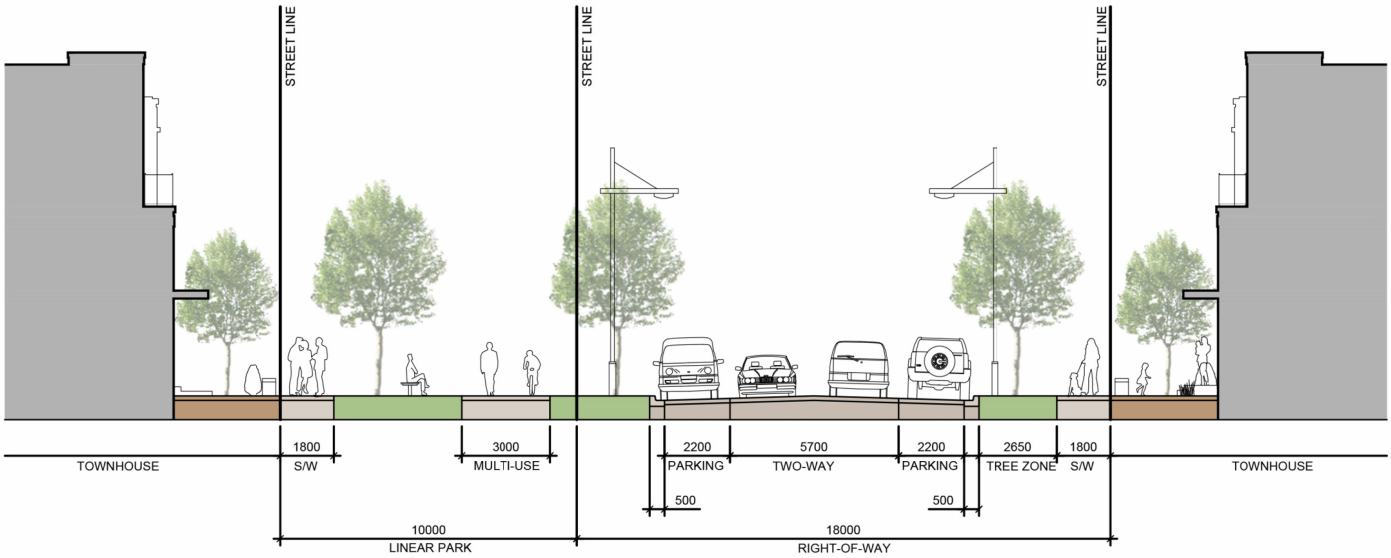


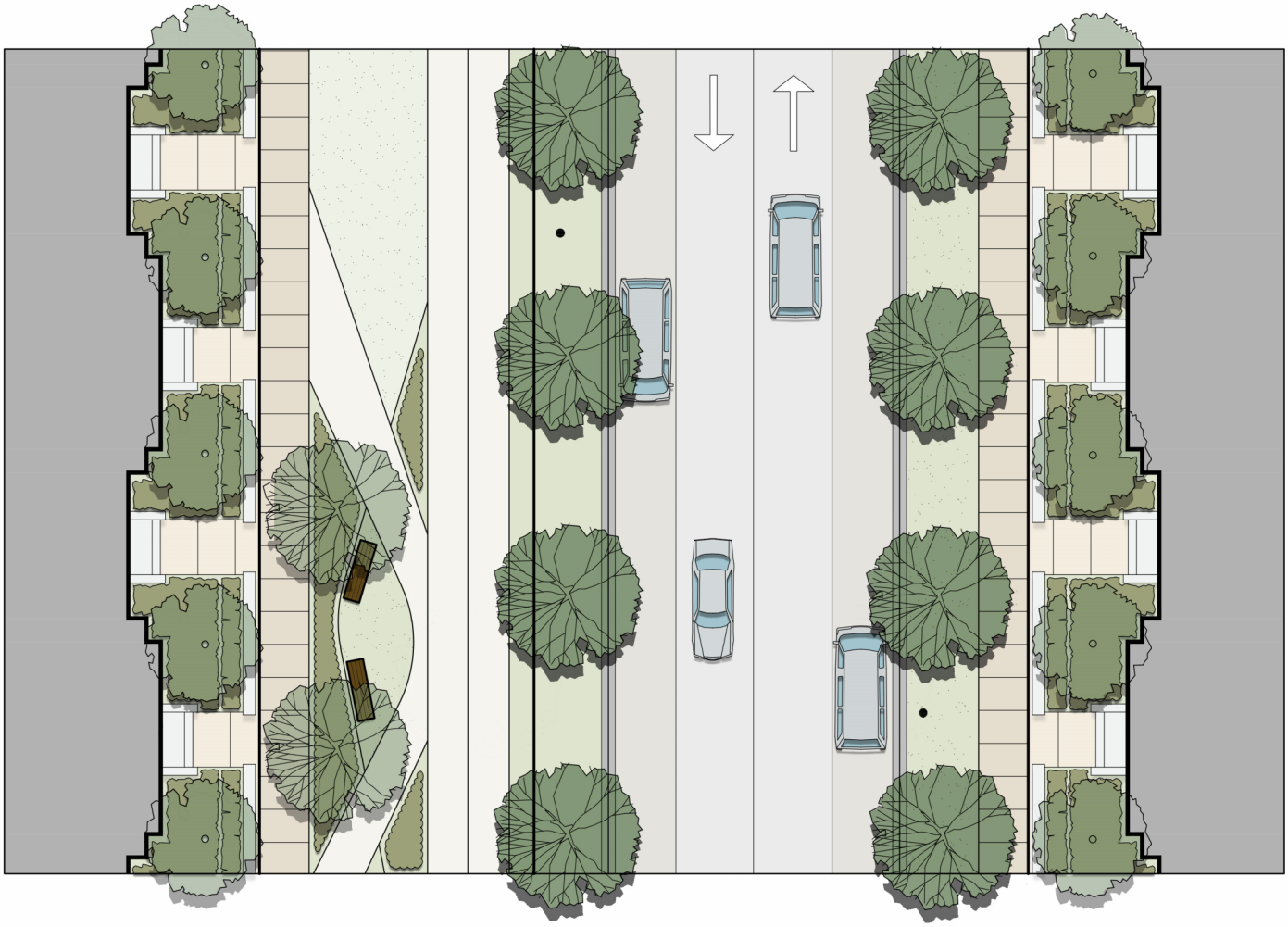
LOCAL ROAD - 18.0m R.O.W. (OPTION A - RESIDENTIAL CONTEXT)





LOCAL ROAD - 18.0m R.O.W. WITH 10.0m LINEAR PARK (TYPICAL MIXED USE BLOCK WITH INTEGRATED LINEAR PARK)





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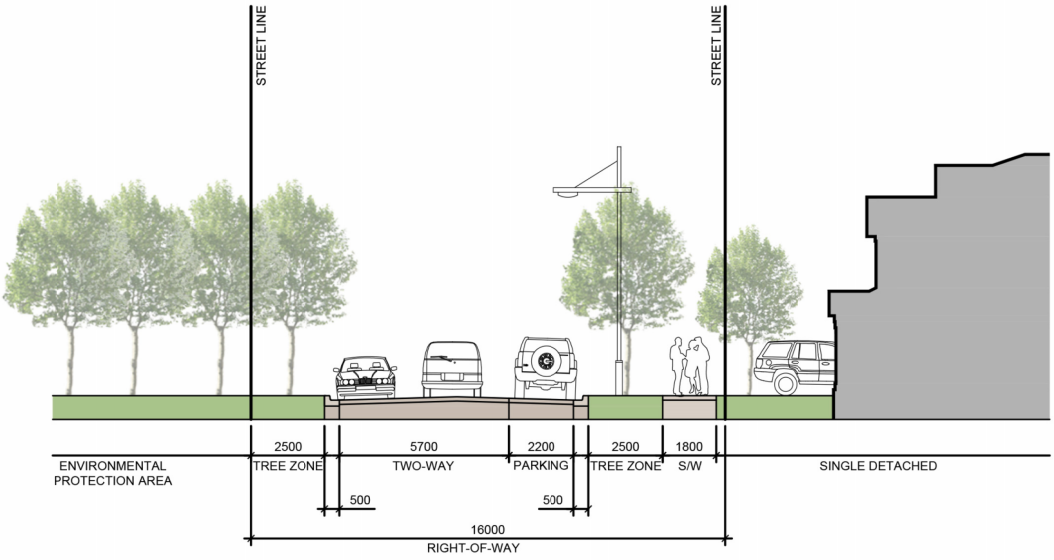
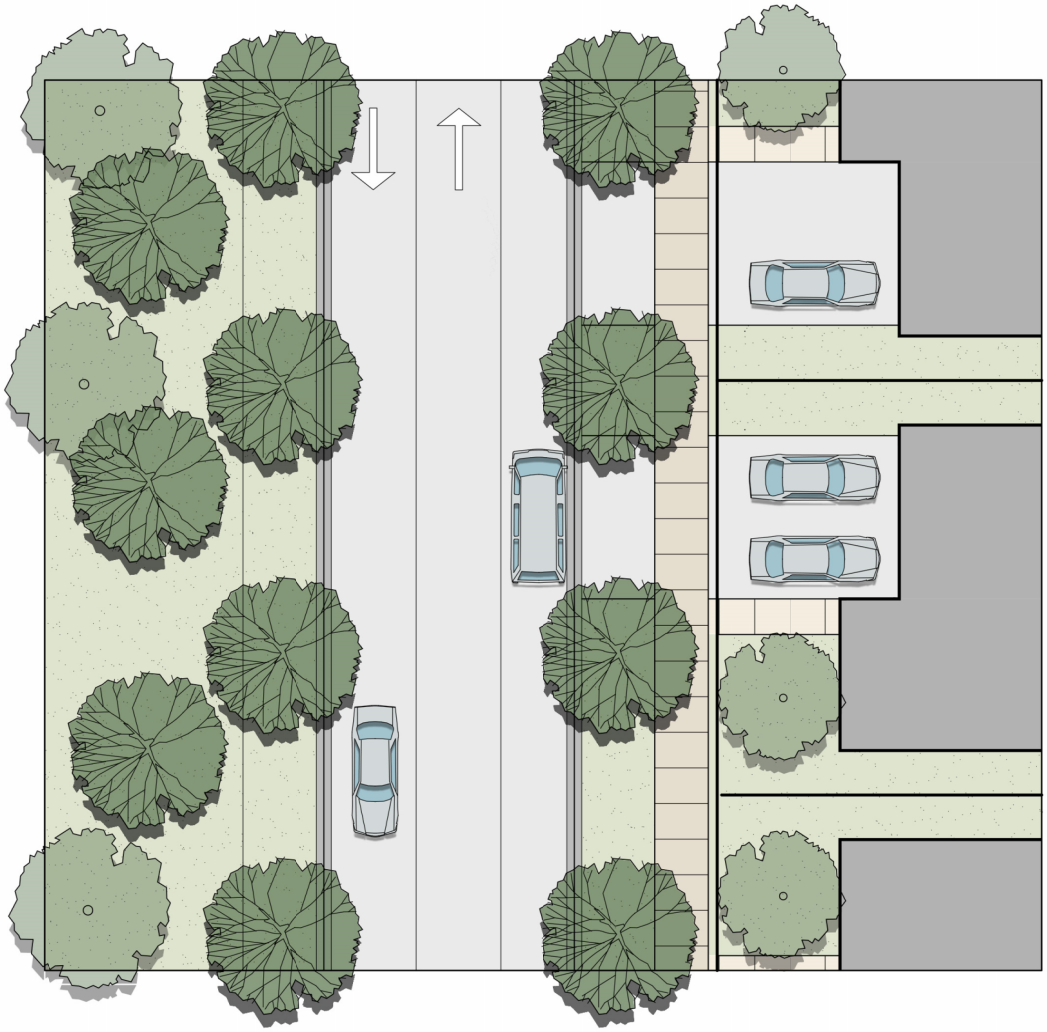
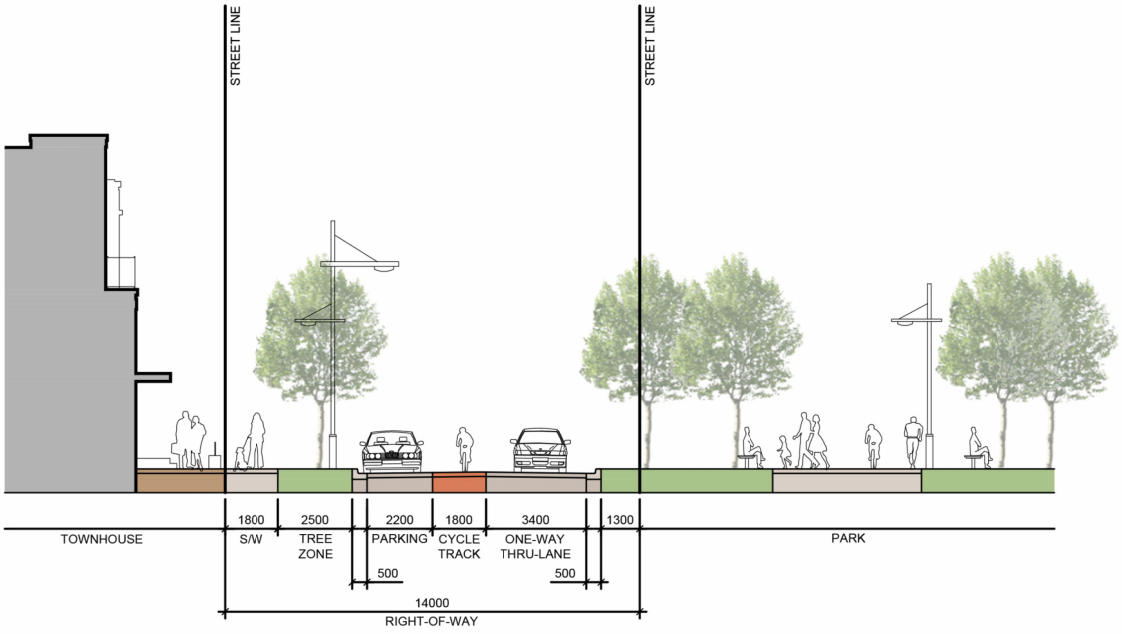
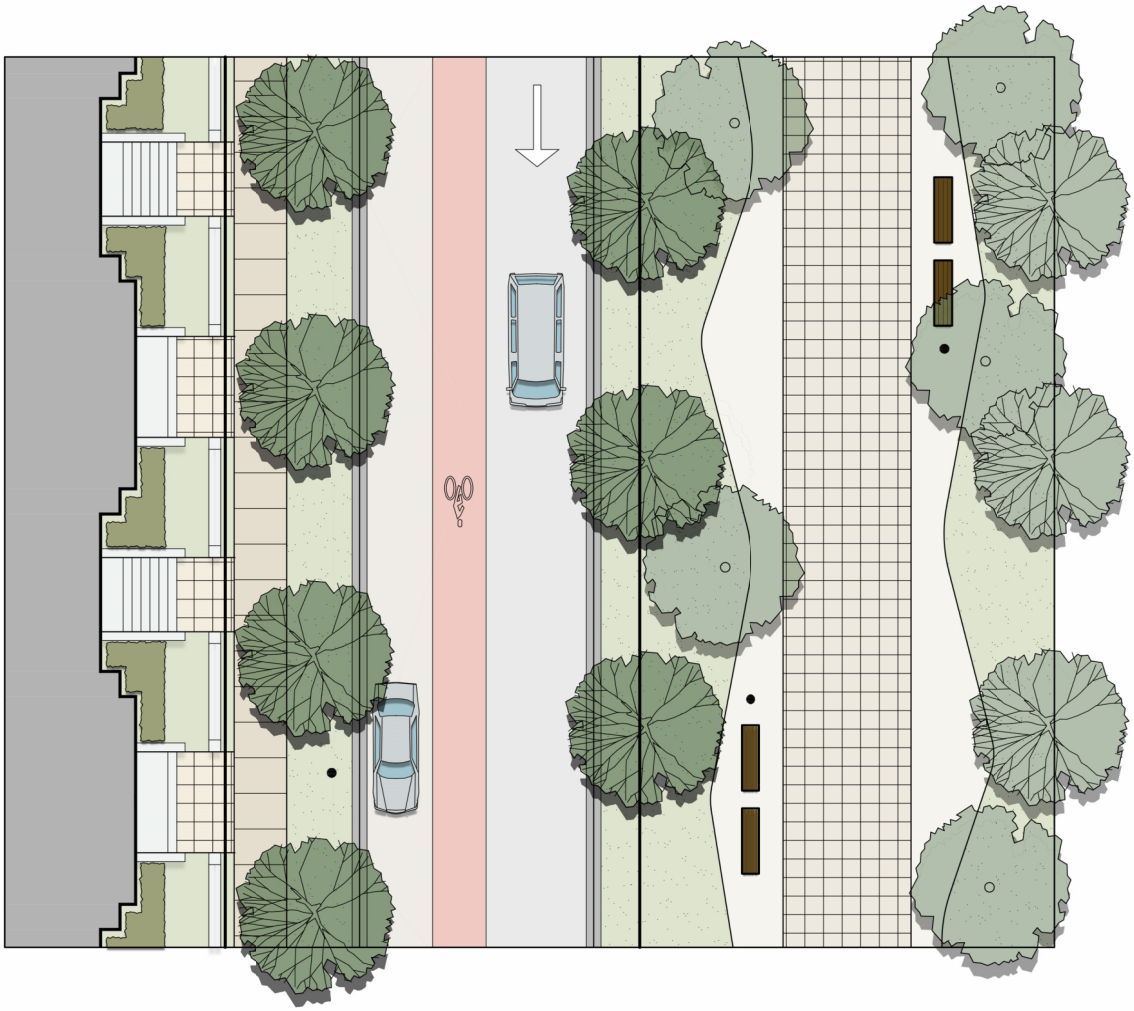


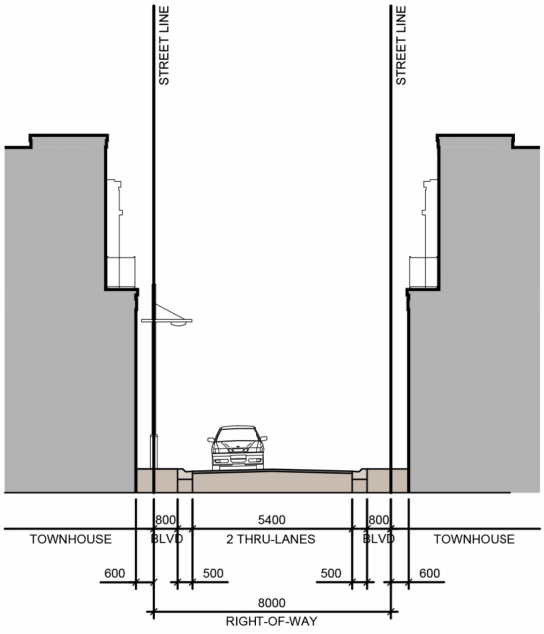


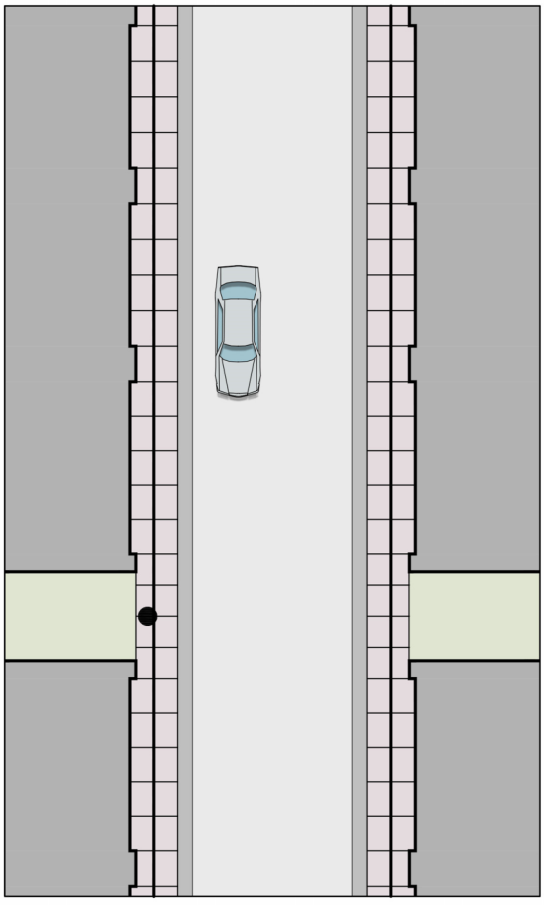
WINDOW STREET - 16.0m R.O.W.





CENTRAL PROMENADE GREEN LINK STREET (ONE WAY - 14.0m R.O.W.)





LANEWAY - 8.0m R.O.W.

APPENDIX D:
Turning Movement Counts and Signal Timing Plans

Spectrum

Turning Movement Count
Location Name: KING ST & THE GORE RD
Date: Tue, Apr 12, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (1 . KING ST & THE GORE RD) CustID: 00815910 MioID:

Start Time	N Approach GORE RD						E Approach KING ST						S Approach GORE RD						W Approach KING ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	30	56	23	0	0	109	10	84	3	0	0	97	1	8	1	0	0	10	6	69	5	0	0	80	296	
07:15:00	31	74	29	0	0	134	4	78	3	0	0	85	1	11	3	0	0	15	9	79	19	0	0	107	341	
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Grand Total	312	783	284	0	0	1379	277	1303	162	0	0	1742	108	721	156	1	2	986	253	1098	342	1	2	1694	**5801**	-
Approach%	22.6%	56.8%	20.6%	0%		-	15.9%	74.8%	9.3%	0%		-	11%	73.1%	15.8%	0.1%		-	14.9%	64.8%	20.2%	0.1%		-	-	-
Totals %	5.4%	13.5%	4.9%	0%		23.8%	4.8%	22.5%	2.8%	0%		30%	1.9%	12.4%	2.7%	0%		17%	4.4%	18.9%	5.9%	0%		29.2%	-	-
Heavy	7	11	6	0		-	13	112	27	0		-	13	19	2	0		-	11	91	12	0		-	-	-
Heavy %	2.2%	1.4%	2.1%	0%		-	4.7%	8.6%	16.7%	0%		-	12%	2.6%	1.3%	0%		-	4.3%	8.3%	3.5%	0%		-	-	-
Bicycles	0	0	0	0		-	0	7	0	0		-	0	0	0	0		-	0	0	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0.5%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: KING ST & THE GORE RD
Date: Tue, Apr 12, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

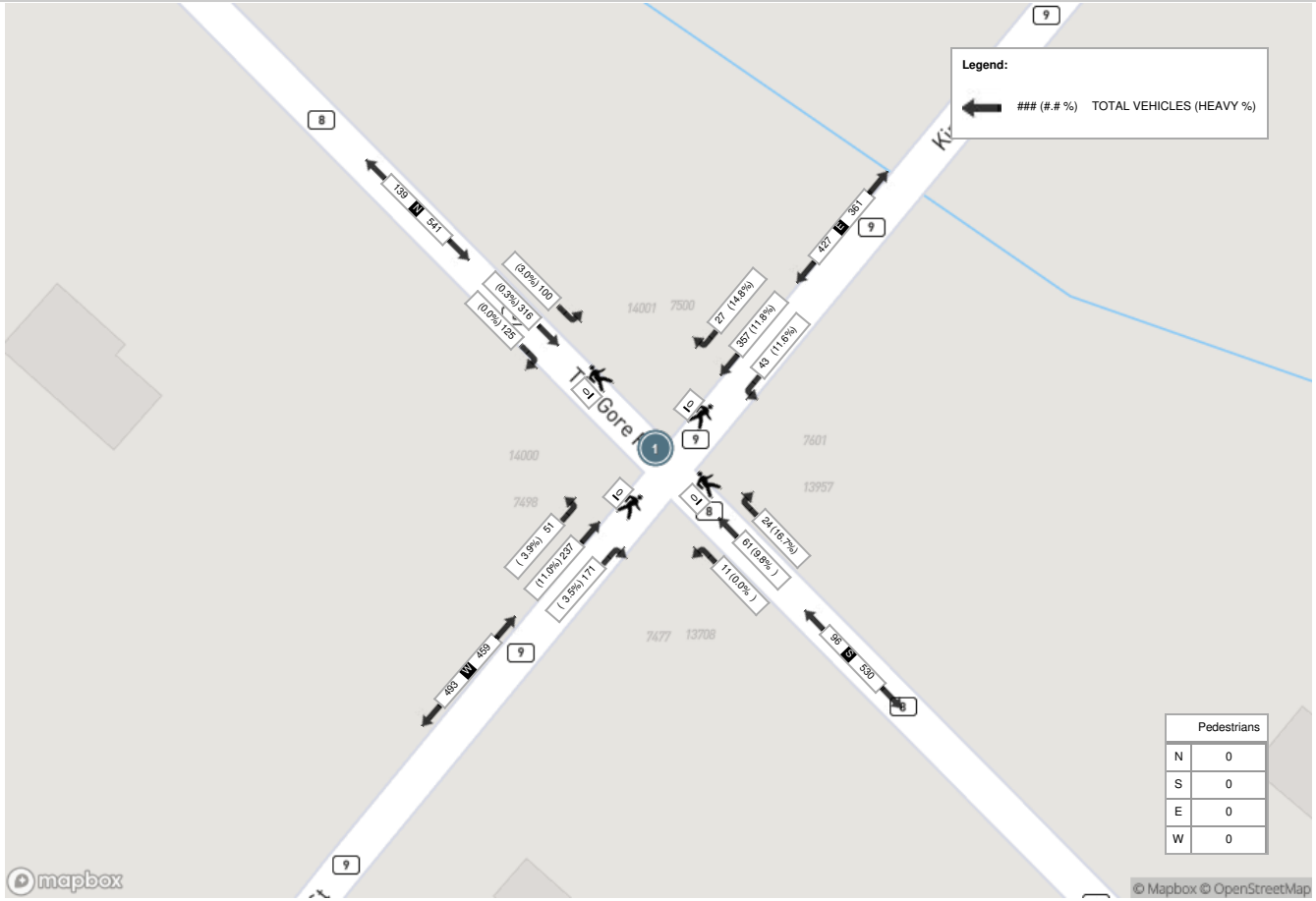
Peak Hour: 07:30 AM - 08:30 AM Weather: Broken Clouds (5.22 °C)

Start Time	N Approach GORE RD						E Approach KING ST						S Approach GORE RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00	44	83	25	0	0	152	2	103	10	0	0	115	0	13	2	0	0	15	12	78	9	0	0	99	381
07:45:00	41	83	24	0	0	148	7	98	7	0	0	112	4	14	4	0	0	22	21	114	13	0	0	148	430
08:00:00	18	77	21	0	0	116	7	93	6	0	0	106	4	20	3	0	0	27	64	38	12	0	0	114	363
08:15:00	22	73	30	0	0	125	11	63	20	0	0	94	16	14	2	0	0	32	74	7	17	0	0	98	349
Grand Total	125	316	100	0	0	541	27	357	43	0	0	427	24	61	11	0	0	96	171	237	51	0	0	459	**1523**
Approach%	23.1%	58.4%	18.5%	0%		-	6.3%	83.6%	10.1%	0%		-	25%	63.5%	11.5%	0%		-	37.3%	51.6%	11.1%	0%		-	**-**
Totals %	8.2%	20.7%	6.6%	0%		35.5%	1.8%	23.4%	2.8%	0%		28%	1.6%	4%	0.7%	0%		6.3%	11.2%	15.6%	3.3%	0%		30.1%	**-**
PHF	0.71	0.95	0.83	0		0.89	0.61	0.87	0.54	0		0.93	0.38	0.76	0.69	0		0.75	0.58	0.52	0.75	0		0.78	**-**
Heavy	0	1	3	0		4	4	42	5	0		51	4	6	0	0		10	6	26	2	0		34	**-**
Heavy %	0%	0.3%	3%	0%		0.7%	14.8%	11.8%	11.6%	0%		11.9%	16.7%	9.8%	0%	0%		10.4%	3.5%	11%	3.9%	0%		7.4%	**-**
Lights	125	315	97	0		537	23	315	38	0		376	20	55	11	0		86	165	211	49	0		425	**-**
Lights %	100%	99.7%	97%	0%		99.3%	85.2%	88.2%	88.4%	0%		88.1%	83.3%	90.2%	100%	0%		89.6%	96.5%	89%	96.1%	0%		92.6%	**-**
Single-Unit Trucks	0	0	0	0		0	1	21	1	0		23	2	4	0	0		6	4	4	2	0		10	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	3.7%	5.9%	2.3%	0%		5.4%	8.3%	6.6%	0%	0%		6.3%	2.3%	1.7%	3.9%	0%		2.2%	**-**
Buses	0	0	3	0		3	1	6	1	0		8	1	1	0	0		2	2	10	0	0		12	**-**
Buses %	0%	0%	3%	0%		0.6%	3.7%	1.7%	2.3%	0%		1.9%	4.2%	1.6%	0%	0%		2.1%	1.2%	4.2%	0%	0%		2.6%	**-**
Articulated Trucks	0	1	0	0		1	2	15	3	0		20	1	1	0	0		2	0	12	0	0		12	**-**
Articulated Trucks %	0%	0.3%	0%	0%		0.2%	7.4%	4.2%	7%	0%		4.7%	4.2%	1.6%	0%	0%		2.1%	0%	5.1%	0%	0%		2.6%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

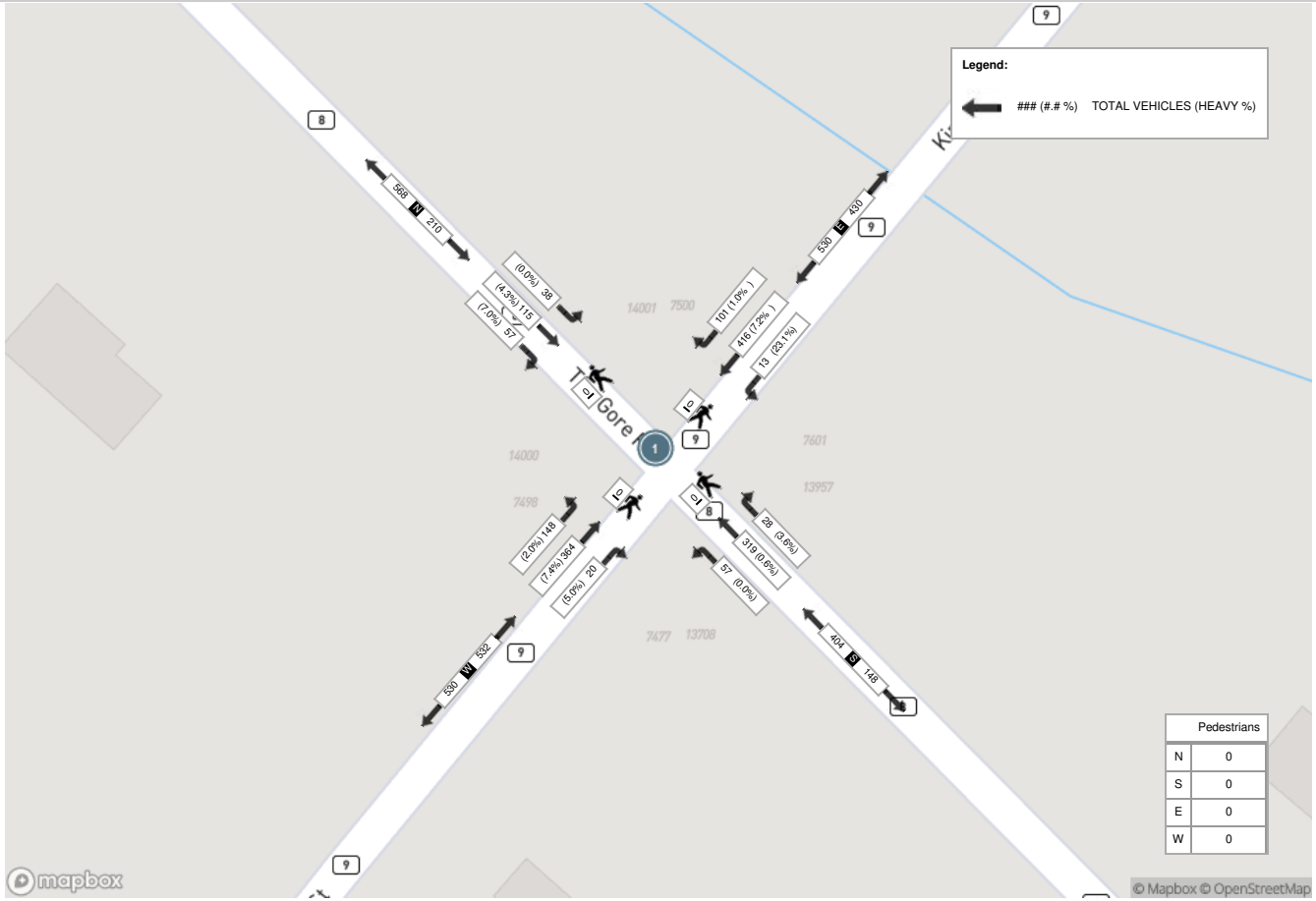
Peak Hour: 04:30 PM - 05:30 PM Weather: Overcast Clouds (16.43 °C)

Start Time	N Approach GORE RD						E Approach KING ST						S Approach GORE RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	14	28	7	0	0	49	26	100	5	0	0	131	7	85	12	0	0	104	7	101	44	0	0	152	436
16:45:00	13	32	12	0	0	57	16	91	2	0	0	109	7	78	17	0	0	102	1	102	38	0	0	141	409
17:00:00	12	26	10	0	0	48	31	107	2	0	0	140	9	70	16	0	0	95	6	87	36	0	0	129	412
17:15:00	18	29	9	0	0	56	28	118	4	0	0	150	5	86	12	0	0	103	6	74	30	0	0	110	419
Grand Total	57	115	38	0	0	210	101	416	13	0	0	530	28	319	57	0	0	404	20	364	148	0	0	532	**1676**
Approach%	27.1%	54.8%	18.1%	0%		-	19.1%	78.5%	2.5%	0%		-	6.9%	79%	14.1%	0%		-	3.8%	68.4%	27.8%	0%		-	**-**
Totals %	3.4%	6.9%	2.3%	0%		12.5%	6%	24.8%	0.8%	0%		31.6%	1.7%	19%	3.4%	0%		24.1%	1.2%	21.7%	8.8%	0%		31.7%	**-**
PHF	0.79	0.9	0.79	0		0.92	0.81	0.88	0.65	0		0.88	0.78	0.93	0.84	0		0.97	0.71	0.89	0.84	0		0.88	**-**
Heavy	4	5	0	0		9	1	30	3	0		34	1	2	0	0		3	1	27	3	0		31	**-**
Heavy %	7%	4.3%	0%	0%		4.3%	1%	7.2%	23.1%	0%		6.4%	3.6%	0.6%	0%	0%		0.7%	5%	7.4%	2%	0%		5.8%	**-**
Lights	53	110	38	0		201	100	386	10	0		496	27	317	57	0		401	19	337	145	0		501	**-**
Lights %	93%	95.7%	100%	0%		95.7%	99%	92.8%	76.9%	0%		93.6%	96.4%	99.4%	100%	0%		99.3%	95%	92.6%	98%	0%		94.2%	**-**
Single-Unit Trucks	2	5	0	0		7	1	14	3	0		18	0	1	0	0		1	0	6	3	0		9	**-**
Single-Unit Trucks %	3.5%	4.3%	0%	0%		3.3%	1%	3.4%	23.1%	0%		3.4%	0%	0.3%	0%	0%		0.2%	0%	1.6%	2%	0%		1.7%	**-**
Buses	1	0	0	0		1	0	3	0	0		3	0	0	0	0		0	1	1	0	0		2	**-**
Buses %	1.8%	0%	0%	0%		0.5%	0%	0.7%	0%	0%		0.6%	0%	0%	0%	0%		0%	5%	0.3%	0%	0%		0.4%	**-**
Articulated Trucks	1	0	0	0		1	0	13	0	0		13	1	1	0	0		2	0	20	0	0		20	**-**
Articulated Trucks %	1.8%	0%	0%	0%		0.5%	0%	3.1%	0%	0%		2.5%	3.6%	0.3%	0%	0%		0.5%	0%	5.5%	0%	0%		3.8%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:30 AM - 08:30 AM **Weather: Broken Clouds (5.22 °C)**



Peak Hour: 04:30 PM - 05:30 PM **Weather: Overcast Clouds (16.43 °C)**



Spectrum

Turning Movement Count
Location Name: KING ST & EMIL KOLB PARKWAY
Date: Tue, Apr 12, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (3 . KING ST & EMIL KOLB PARKWAY) CustID: 00904510 MioID:

Start Time	E Approach EMIL KOLB PKWY					S Approach KING ST					W Approach EMIL KOLB PKWY					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	UTurn W:W	Peds W:	Approach Total		
07:00:00	15	56	0	0	71	64	25	0	0	89	36	61	0	0	97	257	
07:15:00	12	56	0	0	68	64	17	0	0	81	40	47	0	0	87	236	
07:30:00	21	60	0	0	81	80	20	0	0	100	46	54	0	0	100	281	
07:45:00	15	59	1	0	75	97	45	0	0	142	41	69	0	0	110	327	1101
08:00:00	23	69	0	0	92	61	34	1	0	96	53	56	0	0	109	297	1141
08:15:00	20	51	0	0	71	46	13	0	0	59	35	44	0	0	79	209	1114
08:30:00	12	61	1	0	74	35	17	0	0	52	34	37	0	0	71	197	1030
08:45:00	16	42	1	0	59	39	8	0	0	47	28	46	0	0	74	180	883
BREAK																	
16:00:00	78	86	0	0	164	57	38	0	0	95	28	21	0	0	49	308	
16:15:00	75	115	0	0	190	87	45	1	0	133	16	24	0	0	40	363	
16:30:00	82	101	0	0	183	70	44	0	0	114	23	17	0	0	40	337	
16:45:00	73	84	0	0	157	81	41	0	0	122	24	15	0	0	39	318	1326
17:00:00	86	115	0	2	201	77	46	0	1	123	28	18	0	0	46	370	1388
17:15:00	69	108	0	0	177	44	43	0	0	87	38	19	0	0	57	321	1346
17:30:00	48	97	1	0	146	54	33	0	0	87	26	16	0	0	42	275	1284
17:45:00	61	74	0	0	135	68	29	0	1	97	32	15	0	1	47	279	1245
Grand Total	706	1234	4	2	1944	1024	498	2	2	1524	528	559	0	1	1087	**4555**	-
Approach%	36.3%	63.5%	0.2%		-	67.2%	32.7%	0.1%		-	48.6%	51.4%	0%		-	**-**	-
Totals %	15.5%	27.1%	0.1%		42.7%	22.5%	10.9%	0%		33.5%	11.6%	12.3%	0%		23.9%	**-**	-
Heavy	74	127	2		-	93	34	0		-	48	70	0		-	**-**	-
Heavy %	10.5%	10.3%	50%		-	9.1%	6.8%	0%		-	9.1%	12.5%	0%		-	**-**	-
Bicycles	1	2	0		-	0	0	0		-	0	0	0		-	**-**	-
Bicycle %	0.1%	0.2%	0%		-	0%	0%	0%		-	0%	0%	0%		-	**-**	-

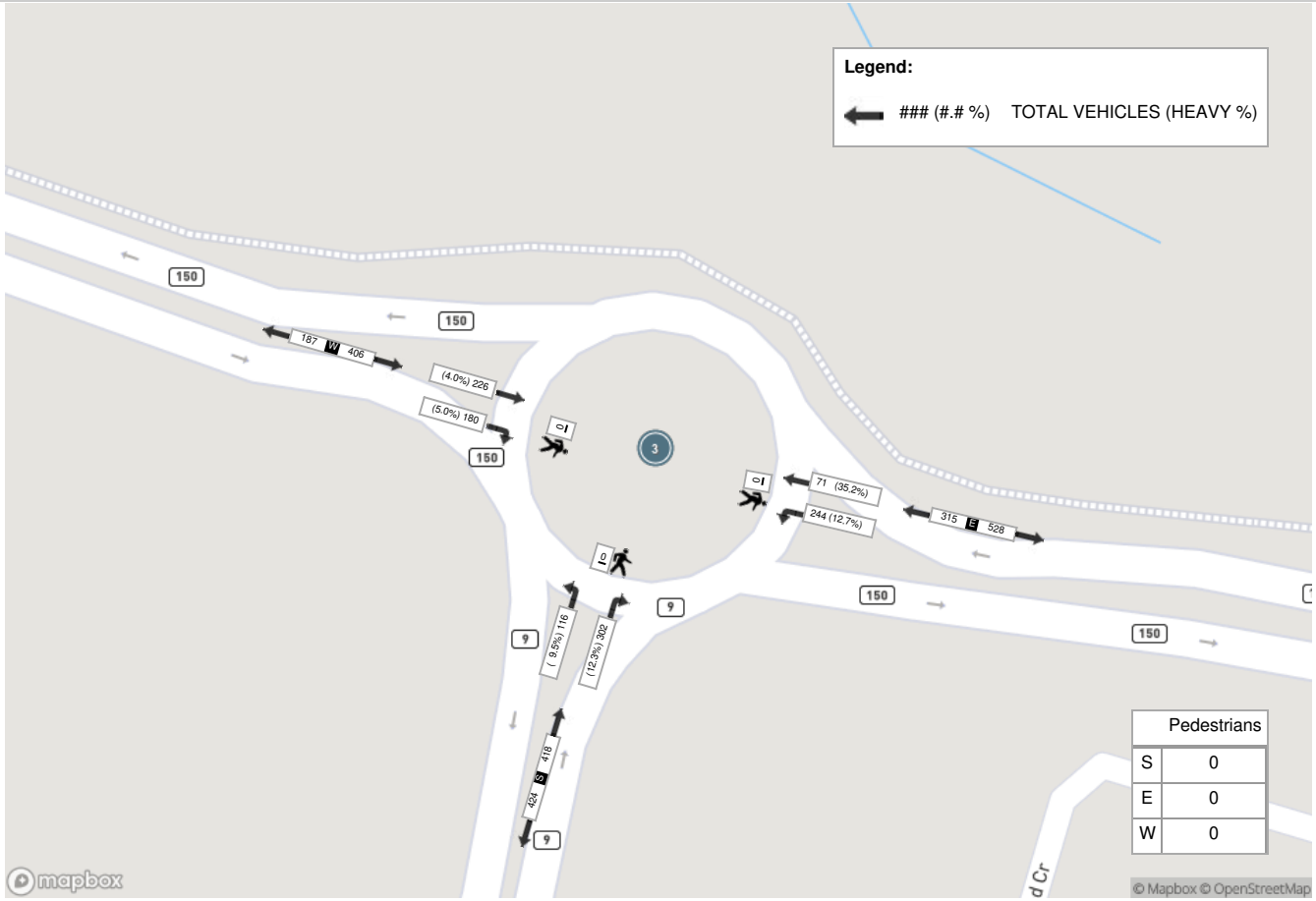
Peak Hour: 07:15 AM - 08:15 AM Weather: Broken Clouds (5.22 °C)

Start Time	E Approach EMIL KOLB PKWY					S Approach KING ST					W Approach EMIL KOLB PKWY					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
07:15:00	12	56	0	0	68	64	17	0	0	81	40	47	0	0	87	236
07:30:00	21	60	0	0	81	80	20	0	0	100	46	54	0	0	100	281
07:45:00	15	59	1	0	75	97	45	0	0	142	41	69	0	0	110	327
08:00:00	23	69	0	0	92	61	34	1	0	96	53	56	0	0	109	297
Grand Total	71	244	1	0	316	302	116	1	0	419	180	226	0	0	406	**1141**
Approach%	22.5%	77.2%	0.3%		-	72.1%	27.7%	0.2%		-	44.3%	55.7%	0%		-	**-**
Totals %	6.2%	21.4%	0.1%		27.7%	26.5%	10.2%	0.1%		36.7%	15.8%	19.8%	0%		35.6%	**-**
PHF	0.77	0.88	0.25		0.86	0.78	0.64	0.25		0.74	0.85	0.82	0		0.92	**-**
Heavy	25	31	0		56	37	11	0		48	9	9	0		18	**-**
Heavy %	35.2%	12.7%	0%		17.7%	12.3%	9.5%	0%		11.5%	5%	4%	0%		4.4%	**-**
Lights	46	213	1		260	265	105	1		371	171	217	0		388	**-**
Lights %	64.8%	87.3%	100%		82.3%	87.7%	90.5%	100%		88.5%	95%	96%	0%		95.6%	**-**
Single-Unit Trucks	8	15	0		23	18	3	0		21	1	4	0		5	**-**
Single-Unit Trucks %	11.3%	6.1%	0%		7.3%	6%	2.6%	0%		5%	0.6%	1.8%	0%		1.2%	**-**
Buses	2	8	0		10	9	5	0		14	3	1	0		4	**-**
Buses %	2.8%	3.3%	0%		3.2%	3%	4.3%	0%		3.3%	1.7%	0.4%	0%		1%	**-**
Articulated Trucks	15	8	0		23	10	3	0		13	5	4	0		9	**-**
Articulated Trucks %	21.1%	3.3%	0%		7.3%	3.3%	2.6%	0%		3.1%	2.8%	1.8%	0%		2.2%	**-**
Pedestrians	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

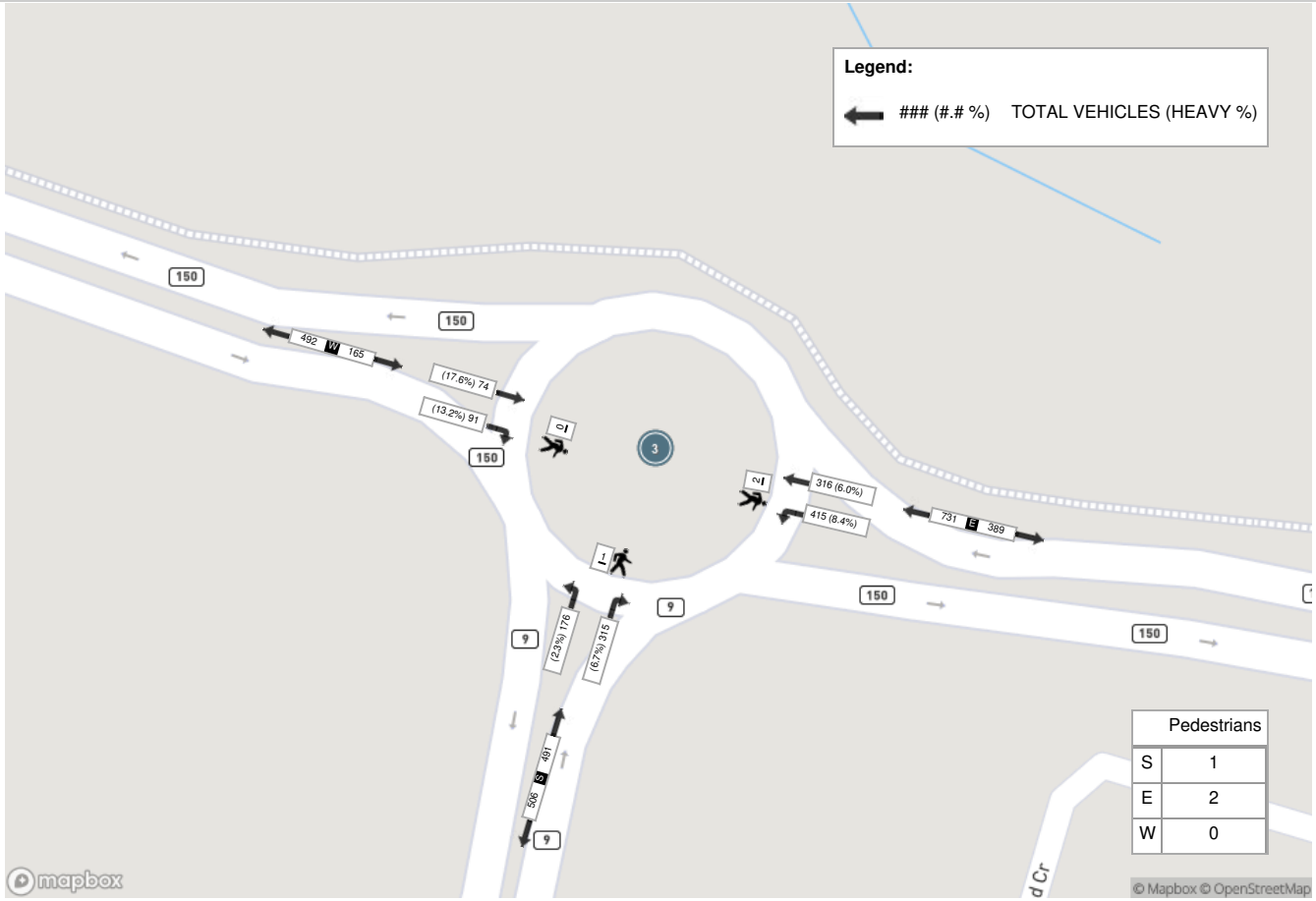
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)

Start Time	E Approach EMIL KOLB PKWY					S Approach KING ST					W Approach EMIL KOLB PKWY					Int. Total (15 min)
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	
16:15:00	75	115	0	0	190	87	45	1	0	133	16	24	0	0	40	363
16:30:00	82	101	0	0	183	70	44	0	0	114	23	17	0	0	40	337
16:45:00	73	84	0	0	157	81	41	0	0	122	24	15	0	0	39	318
17:00:00	86	115	0	2	201	77	46	0	1	123	28	18	0	0	46	370
Grand Total	316	415	0	2	731	315	176	1	1	492	91	74	0	0	165	**1388**
Approach%	43.2%	56.8%	0%		-	64%	35.8%	0.2%		-	55.2%	44.8%	0%		-	**-**
Totals %	22.8%	29.9%	0%		52.7%	22.7%	12.7%	0.1%		35.4%	6.6%	5.3%	0%		11.9%	**-**
PHF	0.92	0.9	0		0.91	0.91	0.96	0.25		0.92	0.81	0.77	0		0.9	**-**
Heavy	19	35	0		54	21	4	0		25	12	13	0		25	**-**
Heavy %	6%	8.4%	0%		7.4%	6.7%	2.3%	0%		5.1%	13.2%	17.6%	0%		15.2%	**-**
Lights	297	380	0		677	294	172	1		467	79	61	0		140	**-**
Lights %	94%	91.6%	0%		92.6%	93.3%	97.7%	100%		94.9%	86.8%	82.4%	0%		84.8%	**-**
Single-Unit Trucks	14	20	0		34	8	2	0		10	5	6	0		11	**-**
Single-Unit Trucks %	4.4%	4.8%	0%		4.7%	2.5%	1.1%	0%		2%	5.5%	8.1%	0%		6.7%	**-**
Buses	0	5	0		5	1	0	0		1	1	0	0		1	**-**
Buses %	0%	1.2%	0%		0.7%	0.3%	0%	0%		0.2%	1.1%	0%	0%		0.6%	**-**
Articulated Trucks	5	10	0		15	12	2	0		14	6	7	0		13	**-**
Articulated Trucks %	1.6%	2.4%	0%		2.1%	3.8%	1.1%	0%		2.8%	6.6%	9.5%	0%		7.9%	**-**
Pedestrians	-	-	-	2	-	-	-	-	1	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	66.7%		-	-	-	33.3%		-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		**-**

Peak Hour: 07:15 AM - 08:15 AM Weather: Broken Clouds (5.22 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)



Spectrum

Turning Movement Count
Location Name: KING ST & HUMBER STATION RD
Date: Tue, Apr 12, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (2 . KING ST & HUMBER STATION RD) CustID: 00905322 MioID:

Start Time	N Approach HUMBER STATION RD						E Approach KING ST						S Approach HUMBER STATION RD						W Approach KING ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	9	10	0	0	19	4	92	10	0	0	106	7	2	7	0	0	16	26	67	1	0	0	94	235	
07:15:00	2	6	5	0	0	13	2	91	23	0	0	116	1	1	3	0	0	5	34	69	0	0	0	103	237	
07:30:00	1	12	4	0	0	17	1	115	17	0	0	133	3	3	3	0	0	9	21	81	2	0	0	104	263	
07:45:00	0	21	7	0	0	28	5	95	18	0	0	118	7	5	7	0	0	19	30	110	3	0	0	143	308	1043
08:00:00	2	15	1	0	0	18	4	116	15	0	0	135	7	2	4	0	0	13	18	58	0	0	0	76	242	1050
08:15:00	3	9	4	0	0	16	0	79	9	0	0	88	5	5	8	0	1	18	11	39	2	0	0	52	174	987
08:30:00	6	6	3	0	0	15	2	79	13	0	0	94	11	3	9	0	0	23	11	30	0	0	0	41	173	897
08:45:00	3	8	4	0	0	15	1	60	10	0	0	71	13	4	6	0	0	23	14	34	1	0	0	49	158	747
BREAK																										
16:00:00	1	6	3	0	0	10	9	96	7	0	0	112	16	22	12	0	0	50	13	96	5	0	0	114	286	
16:15:00	1	3	3	0	0	7	18	97	3	0	0	118	21	18	17	0	0	56	6	123	0	0	0	129	310	
16:30:00	2	9	4	0	0	15	7	112	7	0	0	126	19	20	16	0	0	55	6	106	3	0	0	115	311	
16:45:00	2	1	3	0	0	6	8	93	4	0	0	105	18	15	12	0	0	45	6	101	2	0	0	109	265	1172
17:00:00	4	5	4	0	0	13	8	127	4	0	0	139	10	16	26	0	0	52	6	112	2	0	0	120	324	1210
17:15:00	3	8	5	0	0	16	11	105	8	0	0	124	13	17	21	0	0	51	8	73	2	0	0	83	274	1174
17:30:00	3	9	0	0	0	12	13	119	10	0	0	142	6	15	16	0	0	37	8	89	2	0	0	99	290	1153
17:45:00	2	2	3	0	0	7	11	72	6	0	0	89	8	7	7	0	0	22	6	81	2	0	0	89	207	1095
Grand Total	35	129	63	0	0	227	104	1548	164	0	0	1816	165	155	174	0	1	494	224	1269	27	0	0	1520	**4057**	-
Approach%	15.4%	56.8%	27.8%	0%		-	5.7%	85.2%	9%	0%		-	33.4%	31.4%	35.2%	0%		-	14.7%	83.5%	1.8%	0%		-	**-**	-
Totals %	0.9%	3.2%	1.6%	0%		5.6%	2.6%	38.2%	4%	0%		44.8%	4.1%	3.8%	4.3%	0%		12.2%	5.5%	31.3%	0.7%	0%		37.5%	**-**	-
Heavy	8	1	17	0		-	36	104	30	0		-	31	2	38	0		-	24	82	3	0		-	**-**	-
Heavy %	22.9%	0.8%	27%	0%		-	34.6%	6.7%	18.3%	0%		-	18.8%	1.3%	21.8%	0%		-	10.7%	6.5%	11.1%	0%		-	**-**	-
Bicycles	0	1	0	0		-	0	2	0	0		-	0	1	5	0		-	0	0	0	0		-	**-**	-
Bicycle %	0%	0.8%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0.6%	2.9%	0%		-	0%	0%	0%	0%		-	**-**	-

Spectrum

Turning Movement Count
Location Name: KING ST & HUMBER STATION RD
Date: Tue, Apr 12, 2022 Deployment Lead: Tasos Issaaakidis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

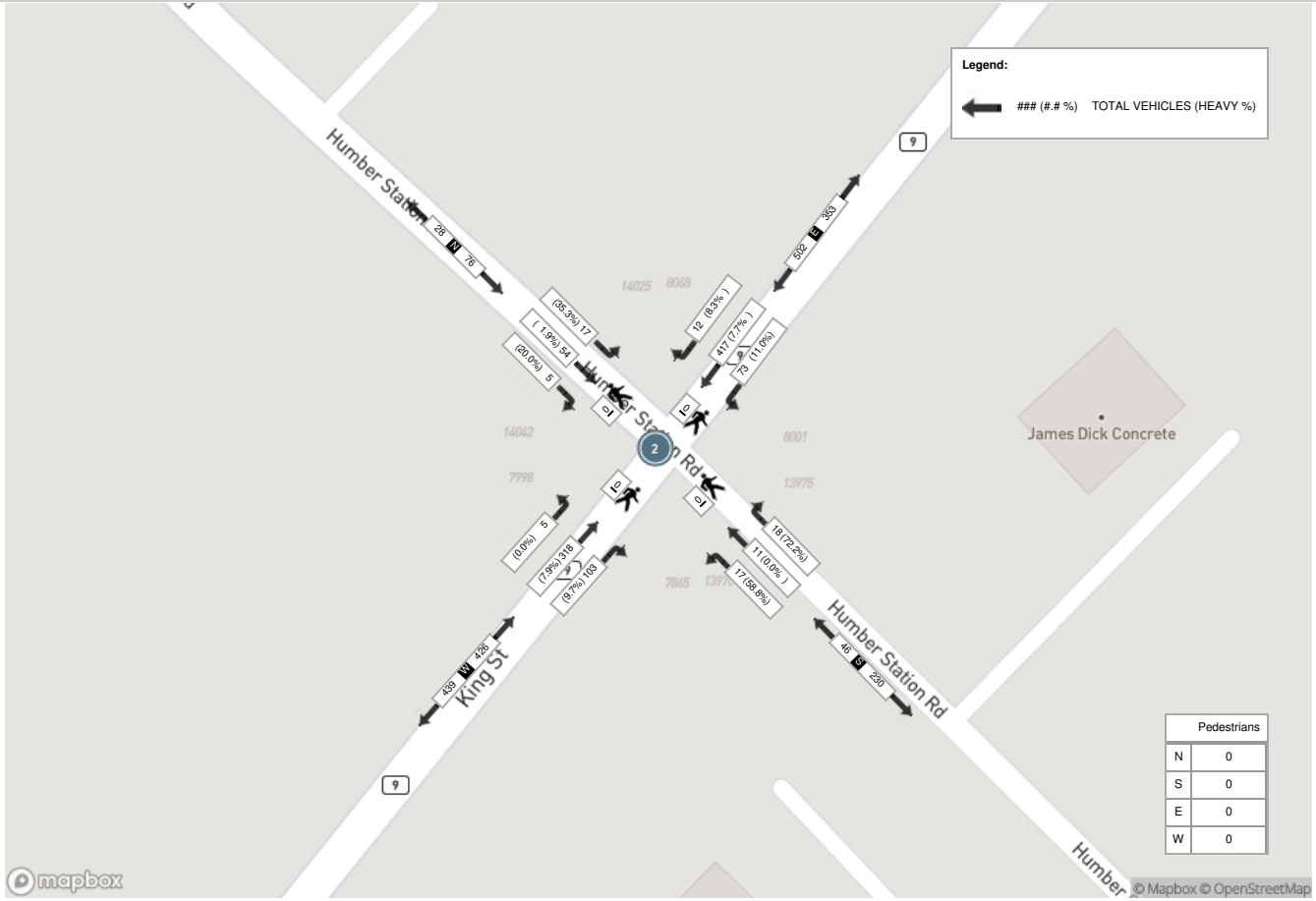
Peak Hour: 07:15 AM - 08:15 AM Weather: Broken Clouds (5.22 °C)

Start Time	N Approach HUMBER STATION RD						E Approach KING ST						S Approach HUMBER STATION RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:15:00	2	6	5	0	0	13	2	91	23	0	0	116	1	1	3	0	0	5	34	69	0	0	0	103	237
07:30:00	1	12	4	0	0	17	1	115	17	0	0	133	3	3	3	0	0	9	21	81	2	0	0	104	263
07:45:00	0	21	7	0	0	28	5	95	18	0	0	118	7	5	7	0	0	19	30	110	3	0	0	143	308
08:00:00	2	15	1	0	0	18	4	116	15	0	0	135	7	2	4	0	0	13	18	58	0	0	0	76	242
Grand Total	5	54	17	0	0	76	12	417	73	0	0	502	18	11	17	0	0	46	103	318	5	0	0	426	**1050**
Approach%	6.6%	71.1%	22.4%	0%		-	2.4%	83.1%	14.5%	0%		-	39.1%	23.9%	37%	0%		-	24.2%	74.6%	1.2%	0%		-	**-**
Totals %	0.5%	5.1%	1.6%	0%		7.2%	1.1%	39.7%	7%	0%		47.8%	1.7%	1%	1.6%	0%		4.4%	9.8%	30.3%	0.5%	0%		40.6%	**-**
PHF	0.63	0.64	0.61	0		0.68	0.6	0.9	0.79	0		0.93	0.64	0.55	0.61	0		0.61	0.76	0.72	0.42	0		0.74	**-**
Heavy	1	1	6	0		8	1	32	8	0		41	13	0	10	0		23	10	25	0	0		35	**-**
Heavy %	20%	1.9%	35.3%	0%		10.5%	8.3%	7.7%	11%	0%		8.2%	72.2%	0%	58.8%	0%		50%	9.7%	7.9%	0%	0%		8.2%	**-**
Lights	4	53	11	0		68	11	385	65	0		461	5	11	7	0		23	93	293	5	0		391	**-**
Lights %	80%	98.1%	64.7%	0%		89.5%	91.7%	92.3%	89%	0%		91.8%	27.8%	100%	41.2%	0%		50%	90.3%	92.1%	100%	0%		91.8%	**-**
Single-Unit Trucks	1	1	5	0		7	1	13	5	0		19	4	0	6	0		10	1	6	0	0		7	**-**
Single-Unit Trucks %	20%	1.9%	29.4%	0%		9.2%	8.3%	3.1%	6.8%	0%		3.8%	22.2%	0%	35.3%	0%		21.7%	1%	1.9%	0%	0%		1.6%	**-**
Buses	0	0	1	0		1	0	8	0	0		8	2	0	0	0		2	1	13	0	0		14	**-**
Buses %	0%	0%	5.9%	0%		1.3%	0%	1.9%	0%	0%		1.6%	11.1%	0%	0%	0%		4.3%	1%	4.1%	0%	0%		3.3%	**-**
Articulated Trucks	0	0	0	0		0	0	11	3	0		14	7	0	4	0		11	8	6	0	0		14	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	2.6%	4.1%	0%		2.8%	38.9%	0%	23.5%	0%		23.9%	7.8%	1.9%	0%	0%		3.3%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)

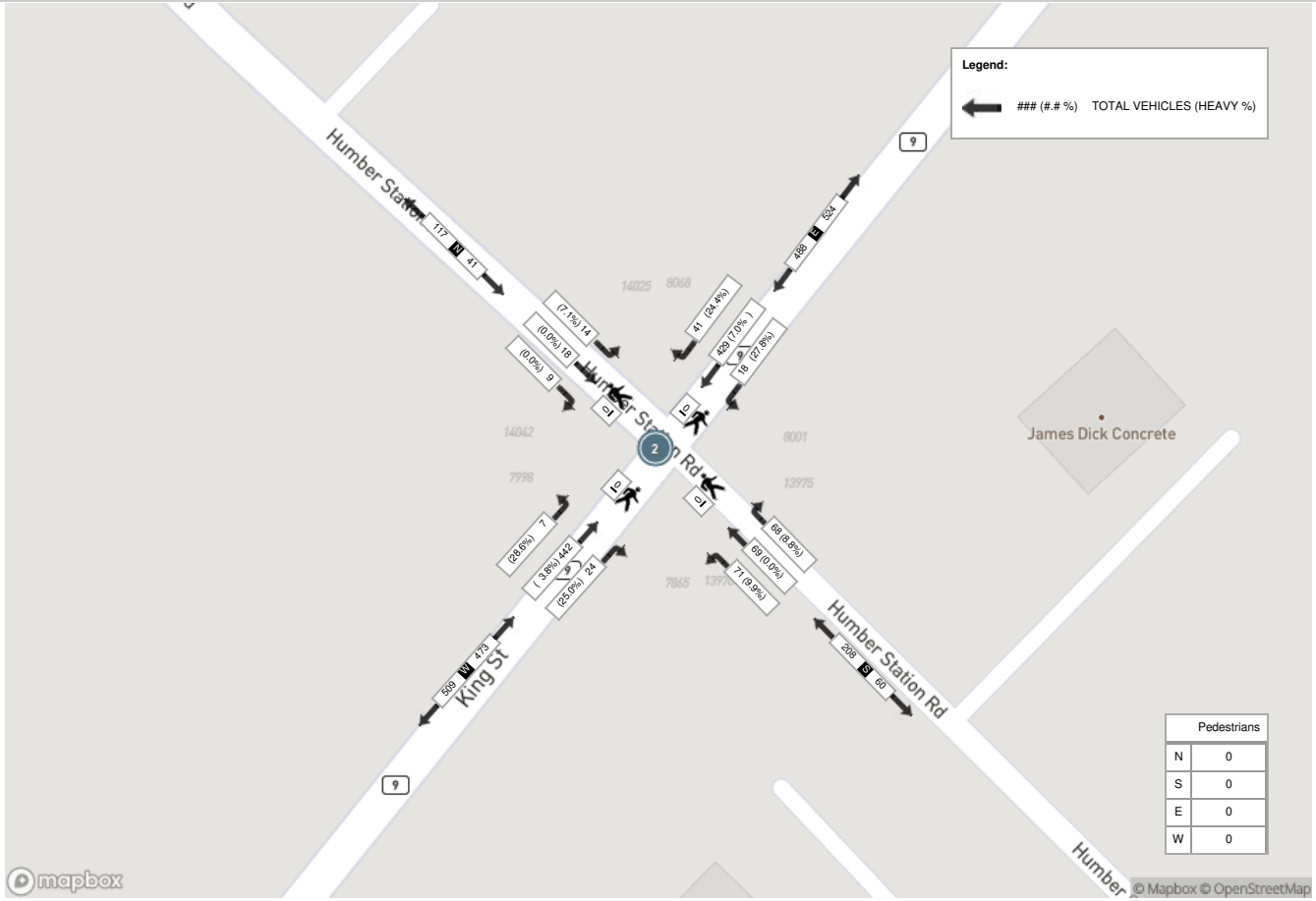
Start Time	N Approach HUMBER STATION RD						E Approach KING ST						S Approach HUMBER STATION RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:15:00	1	3	3	0	0	7	18	97	3	0	0	118	21	18	17	0	0	56	6	123	0	0	0	129	310
16:30:00	2	9	4	0	0	15	7	112	7	0	0	126	19	20	16	0	0	55	6	106	3	0	0	115	311
16:45:00	2	1	3	0	0	6	8	93	4	0	0	105	18	15	12	0	0	45	6	101	2	0	0	109	265
17:00:00	4	5	4	0	0	13	8	127	4	0	0	139	10	16	26	0	0	52	6	112	2	0	0	120	324
Grand Total	9	18	14	0	0	41	41	429	18	0	0	488	68	69	71	0	0	208	24	442	7	0	0	473	**1210**
Approach%	22%	43.9%	34.1%	0%		-	8.4%	87.9%	3.7%	0%		-	32.7%	33.2%	34.1%	0%		-	5.1%	93.4%	1.5%	0%		-	**-**
Totals %	0.7%	1.5%	1.2%	0%		3.4%	3.4%	35.5%	1.5%	0%		40.3%	5.6%	5.7%	5.9%	0%		17.2%	2%	36.5%	0.6%	0%		39.1%	**-**
PHF	0.56	0.5	0.88	0		0.68	0.57	0.84	0.64	0		0.88	0.81	0.86	0.68	0		0.93	1	0.9	0.58	0		0.92	**-**
Heavy	0	0	1	0		1	10	30	5	0		45	6	0	7	0		13	6	17	2	0		25	**-**
Heavy %	0%	0%	7.1%	0%		2.4%	24.4%	7%	27.8%	0%		9.2%	8.8%	0%	9.9%	0%		6.3%	25%	3.8%	28.6%	0%		5.3%	**-**
Lights	9	18	13	0		40	31	399	13	0		443	62	69	64	0		195	18	425	5	0		448	**-**
Lights %	100%	100%	92.9%	0%		97.6%	75.6%	93%	72.2%	0%		90.8%	91.2%	100%	90.1%	0%		93.8%	75%	96.2%	71.4%	0%		94.7%	**-**
Single-Unit Trucks	0	0	1	0		1	9	16	0	0		25	2	0	1	0		3	1	5	0	0		6	**-**
Single-Unit Trucks %	0%	0%	7.1%	0%		2.4%	22%	3.7%	0%	0%		5.1%	2.9%	0%	1.4%	0%		1.4%	4.2%	1.1%	0%	0%		1.3%	**-**
Buses	0	0	0	0		0	0	5	0	0		5	0	0	0	0		0	0	1	0	0		1	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.2%	0%	0%		1%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	**-**
Articulated Trucks	0	0	0	0		0	1	9	5	0		15	4	0	6	0		10	5	11	2	0		18	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	2.4%	2.1%	27.8%	0%		3.1%	5.9%	0%	8.5%	0%		4.8%	20.8%	2.5%	28.6%	0%		3.8%	**-**
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 07:15 AM - 08:15 AM **Weather: Broken Clouds (5.22 °C)**



BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)



REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**April 13, 2022**		**Prepared Date**	**April 18, 2022**
Database Rev	**iNET**		**Completed By**	**TF**
Timing Card / Field rev	**-**		**Checked By**	**RC**

Location — **King Street & Humber Station Road**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s)		
			WALK	FDWALK			AM SPLITS	OFF SPLITS	PM SPLITS
1	Not In Use	-	-	-	-	-	-	-	-
2	King Street - EB	12.0	8.0	7.0	5.4	2.0	85.0	45.0	41.0
3	Not In Use	-	-	-	-	-	-	-	-
4	Humber Station Road - NB	8.0	8.0	7.0	4.0	2.4	25.0	25.0	39.0
5	Not In Use	-	-	-	-	-	-	-	-
6	Not In Use	-	-	-	-	-	-	-	-
7	Not In Use	-	-	-	-	-	-	-	-
8	Not In Use	-	-	-	-	-	-	-	-

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
06:00-09:00	AM	110	36
09:00-15:00	OFF	70	36
15:00-19:00	PM	80	57

REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

Database Date	**April 13, 2022**	**Prepared Date**	**April 13, 2022**
Database Rev	**iNET**	**Completed By**	**TF**
Timing Card / Field rev	**-**	**Checked By**	**RC**

Location: **The Gore Road & King Street**

Phase #	Street Name - Direction	Vehicle Minimum (s)	Pedestrian Minimum (s)		Amber (s)	All Red (s)	TIME PERIOD (s) (Green+Amber+All Red)		
			WALK	FDWALK			AM MAX	OFF MAX	PM MAX
1	Not In Use	-	-	-	-	-	-	-	-
2	King Street - EB	12.0	8.0	12.0	4.6	2.0	18.6 (min), 36.6 (max)		
3	Not In Use	-	-	-	-	-	-	-	-
4	The Gore Road - NB	12.0	8.0	12.0	4.6	2.0	48.6		
5	Not In Use	-	-	-	-	-	-	-	-
6	King Street - WB	12.0	8.0	12.0	4.6	2.0	18.6 (min), 36.6 (max)		
7	Not In Use	-	-	-	-	-	-	-	-
8	The Gore Road - SB	12.0	8.0	12.0	4.6	2.0	48.6		

System Control
Yes

Semi-Actuated Mode
Yes

TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
FREE	AM/OFF/PM	0	0

APPENDIX E:
Analysis Output Summary

SIGNALIZED INTERSECTIONS

Movement	Existing Conditions					Future Background without improvements					Future Background with improvements				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St															
EBL	0.12 (0.41)	9.5 (13.1)	A (B)	3.6 (11.0)	10.9 (30.7)	0.16 (0.49)	20.7 (17.1)	C (B)	7.8 (15.2)	18.0 (26.4)	0.11 (0.27)	9.4 (6.1)	A (A)	4.8 (9.1)	12.4 (18.6)
EBT	0.42 (0.40)	12.3 (10.9)	B (B)	29.4 (27.9)	61.1 (57.5)	0.63 (0.52)	29.6 (21.2)	C (C)	87.1 (76.9)	132.9 (108.7)	0.14 (0.21)	9.3 (9.6)	A (A)	14.9 (22.4)	25.1 (36.0)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.01)	9.3 (8.2)	A (A)	0.0 (0.0)	9.7 (0.0)
NBL	0.11 (0.24)	20.6 (22.1)	C (C)	1.3 (6.7)	5.1 (16.1)	0.17 (0.30)	27.3 (33.1)	C (C)	1.8 (10.5)	6.5 (22.5)	0.16 (0.40)	42.3 (45.2)	D (D)	2.3 (12.6)	7.8 (25.3)
NBT	0.13 (0.67)	20.4 (28.1)	C (C)	6.9 (45.6)	16.9 (72.7)	0.23 (0.89)	26.8 (56.3)	C (E)	19.8 (113.9)	33.3 (#165.8)	0.14 (0.71)	41.2 (49.7)	D (D)	10.2 (57.4)	17.0 (71.6)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.05 (0.03)	40.4 (40.6)	D (D)	0.0 (0.0)	10.1 (0.0)
SBL	0.27 (0.21)	21.6 (21.9)	C (C)	11.9 (4.4)	23.9 (12.1)	0.27 (0.52)	27.4 (41.3)	C (D)	16.8 (7.6)	28.6 (#23.1)	0.48 (0.43)	45.5 (43.6)	D (D)	22.3 (8.4)	38.3 (19.9)
SBT	0.78 (0.30)	32.2 (22.3)	C (C)	59.2 (16.6)	92.5 (32.1)	0.88 (0.41)	49.3 (33.9)	D (C)	127.9 (40.9)	165.2 (62.9)	0.69 (0.26)	48.8 (39.5)	D (D)	56.3 (19.4)	70.3 (28.4)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.04)	40.8 (202.3)	D (F)	0.0 (0.2)	15.7 (8.7)
WBL	0.09 (0.03)	9.3 (7.7)	A (A)	3.0 (0.8)	9.6 (3.7)	0.16 (0.12)	16.0 (14.6)	B (B)	6.0 (4.9)	13.8 (10.7)	0.08 (0.09)	5.5 (7.8)	A (A)	3.1 (2.9)	8.0 (7.5)
WBT	0.40 (0.52)	12.0 (12.6)	B (B)	31.9 (40.0)	62.6 (81.8)	0.50 (0.73)	20.0 (30.4)	C (C)	71.1 (123.1)	111.2 (171.1)	0.18 (0.25)	6.1 (11.5)	A (B)	16.5 (28.4)	26.7 (45.7)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.07)	5.3 (10.1)	A (B)	0.0 (0.0)	2.6 (7.8)
OVERALL	**0.55 (0.57)**	**19.0 (17.0)**	**B (B)**			**0.74 (0.77)**	**32.4 (33.9)**	**C (C)**			**0.30 (0.37)**	**24.8 (28.5)**	**C (C)**		
Humber Station Rd & King St															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.04)	15.4 (10.9)	B (B)	4.4 (1.6)	18.2 (6.0)
EBT	0.33 (0.52)	5.7 (12.1)	A (B)	25.1 (31.9)	38.6 (72.5)	0.53 (0.54)	8.5 (13.0)	A (B)	41.4 (73.7)	87.7 (135.0)	0.24 (0.27)	15.9 (12.7)	B (B)	16.8 (30.0)	43.4 (52.5)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.02)	14.4 (10.5)	B (B)	0.0 (0.0)	3.6 (0.0)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.10 (0.33)	29.6 (32.2)	C (C)	3.0 (13.4)	6.6 (22.1)
NBT	0.21 (0.61)	41.3 (24.7)	D (C)	5.5 (18.7)	16.9 (39.1)	0.57 (0.94)	39.5 (85.1)	D (F)	31.8 (57.0)	48.7 (82.5)	0.18 (0.12)	32.7 (35.3)	C (D)	12.9 (10.6)	18.6 (17.6)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.08)	31.5 (35.0)	C (C)	0.0 (0.0)	0.0 (0.0)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.09)	31.7 (40.4)	C (D)	2.9 (2.4)	6.3 (6.3)
SBT	0.35 (0.10)	42.5 (18.1)	D (B)	14.6 (3.0)	29.5 (9.4)	0.45 (0.51)	37.4 (39.0)	D (D)	23.5 (40.5)	38.3 (56.7)	0.16 (0.25)	34.6 (44.2)	C (D)	9.2 (16.5)	15.0 (24.4)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.05)	33.6 (42.6)	C (D)	0.0 (0.0)	0.0 (0.0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.04)	9.1 (14.9)	A (B)	3.3 (1.7)	14.9 (8.0)
WBT	0.43 (0.52)	6.6 (12.1)	A (B)	35.8 (32.8)	53.5 (74.5)	0.60 (0.54)	9.6 (13.0)	A (B)	54.6 (75.1)	113.7 (136.9)	0.25 (0.29)	10.2 (17.2)	B (B)	14.9 (28.8)	42.8 (62.7)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.05 (0.04)	8.8 (14.7)	A (B)	0.0 (0.0)	3.7 (0.0)
OVERALL	**0.41 (0.55)**	**10.4 (14.5)**	**B (B)**			**0.66 (0.71)**	**15.1 (27.5)**	**B (C)**			**0.25 (0.33)**	**16.7 (21.5)**	**B (C)**		
King St & Street JJ															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.36 (0.36)	5.4 (3.9)	A (A)	16.6 (0.0)	64.6 (70.4)	0.19 (0.19)	4.1 (2.9)	A (A)	7.5 (0.0)	27.3 (29.2)
SBLR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.39 (0.47)	6.5 (3.0)	A (A)	41.8 (0.0)	106.6 (40.5)	0.20 (0.25)	5.0 (2.3)	A (A)	18.5 (0.0)	43.8 (21.3)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.32 (0.44)**	**6.0 (3.4)**	**A (A)**			**0.17 (0.23)**	**4.6 (2.5)**	**A (A)**		
King St & Street I															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.36 (0.36)	11.4 (2.7)	B (A)	16.7 (0.0)	127.6 (32.4)	0.19 (0.19)	9.4 (2.2)	A (A)	7.5 (0.0)	56.7 (17.1)
SBLR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.39 (0.47)	5.6 (4.7)	A (A)	18.6 (0.0)	72.0 (102.9)	0.20 (0.25)	4.2 (3.1)	A (A)	8.2 (0.0)	29.7 (38.8)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.32 (0.44)**	**8.4 (3.9)**	**A (A)**			**0.17 (0.23)**	**6.7 (2.7)**	**A (A)**		
The Gore Rd & Street Y															
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.57)	2.9 (5.9)	A (A)	0.0 (0.0)	23.6 (135.2)	0.15 (0.53)	2.9 (9.6)	A (A)	0.0 (75.3)	24.7 (221.8)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (-)	2.4 (-)	A (-)	0.0 (-)	1.2 (-)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.54 (0.21)	7.8 (3.1)	A (A)	0.0 (0.1)	109.0 (33.7)	0.54 (0.20)	7.8 (2.4)	A (A)	0.0 (0.0)	109.0 (32.8)
WBLR	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.03)	36.7 (36.8)	D (D)	0.2 (0.9)	1.4 (3.4)	0.01 (0.04)	36.7 (51.8)	D (D)	0.2 (1.2)	1.4 (4.7)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.48 (0.51)**	**6.8 (5.3)**	**A (A)**			**0.48 (0.49)**	**6.8 (7.9)**	**A (A)**		
The Gore Rd & Street A															
NBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.58)	2.7 (7.5)	A (A)	0.0 (37.3)	23.3 (114.8)	0.14 (0.58)	2.7 (6.5)	A (A)	0.0 (37.3)	23.4 (134.8)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.03 (0.01)	2.5 (2.8)	A (A)	0.0 (0.1)	4.7 (1.6)	0.03 (0.01)	2.5 (2.8)	A (A)	0.0 (0.1)	4.7 (1.6)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.54 (0.21)	5.6 (3.5)	A (A)	0.0 (9.2)	123.4 (35.1)	0.54 (0.21)	5.6 (3.5)	A (A)	0.0 (9.2)	123.4 (35.1)
WBLR	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.02)	36.7 (35.8)	D (D)	0.0 (0.0)	0.0 (0.0)	0.00 (0.02)	36.7 (35.8)	D (D)	0.0 (0.0)	0.0 (0.0)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.48 (0.51)**	**5.2 (7.1)**	**A (A)**			**0.48 (0.51)**	**5.2 (6.3)**	**A (A)**		
Humber Station Rd & Street E															
EBLTR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.10)	9.9 (5.7)	A (A)	1.7 (6.4)	5.5 (18.1)	0.02 (0.10)	1.0 (4.7)	A (A)	0.9 (6.6)	1.3 (16.0)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.18 (0.04)	11.0 (8.3)	B (A)	0.0 (0.0)	11.6 (5.9)	0.21 (0.05)	2.7 (4.4)	A (A)	0.0 (0.0)	0.0 (4.6)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
SBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.12 (0.03)	10.4 (4.1)	B (A)	5.0 (2.1)	11.9 (6.5)	0.06 (0.03)	1.9 (4.3)	A (A)	2.8 (2.1)	7.0 (6.8)

WBLTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.62)	10.2 (40.3)	B (D)	2.3 (24.6)	6.9 (40.4)	0.47 (0.64)	44.7 (40.3)	D (D)	6.9 (24.5)	16.3 (40.2)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.13 (0.20)**	**10.7 (18.9)**	**B (B)**			**0.23 (0.21)**	**6.1 (18.0)**	**A (B)**		
Humber Station Rd & Street Y															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (-)	32.7 (-)	C (-)	0.3 (-)	2.2 (-)
EBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (-)	32.3 (-)	C (-)	0.0 (-)	0.0 (-)	0.00 (-)	32.6 (-)	C (-)	0.0 (-)	0.0 (-)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
NBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.21)	4.6 (3.3)	A (A)	11.5 (7.1)	24.9 (23.1)	0.10 (0.12)	3.9 (5.8)	A (A)	5.1 (4.6)	10.8 (13.6)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.05 (0.18)	4.0 (11.4)	A (B)	1.8 (23.2)	5.9 (41.7)	0.05 (0.17)	4.8 (2.6)	A (A)	2.2 (3.8)	6.3 (13.4)
SBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.03)	4.0 (9.2)	A (A)	4.0 (6.5)	10.3 (15.4)	0.03 (0.02)	4.6 (2.3)	A (A)	2.6 (0.6)	5.6 (2.8)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.61 (0.20)	41.3 (37.9)	D (D)	20.0 (4.5)	35.1 (10.7)	0.60 (0.22)	40.6 (43.1)	D (D)	20.0 (5.1)	35.2 (11.8)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.01)	32.5 (36.4)	C (D)	0.0 (0.0)	0.0 (0.0)	- (-)	- (-)	- (-)	- (-)	- (-)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.02)	33.2 (41.4)	C (D)	0.0 (0.0)	0.0 (0.0)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.26 (0.21)**	**17.1 (9.2)**	**B (A)**			**0.18 (0.18)**	**17.0 (8.2)**	**B (A)**		
Humber Station Rd & Street EE															
EBLR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
NBTL	- (-)	- (-)	- (-)	- (-)	- (-)	0.18 (0.12)	2.7 (2.5)	A (A)	0.0 (0.0)	26.9 (19.0)	0.09 (0.07)	2.4 (2.3)	A (A)	0.0 (0.0)	12.6 (9.2)
SBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.14)	3.0 (2.5)	A (A)	0.0 (0.0)	19.2 (21.9)	0.05 (0.08)	3.2 (2.3)	A (A)	0.0 (0.0)	9.6 (10.3)
OVERALL	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**- (-)**	**0.16 (0.13)**	**2.8 (2.5)**	**A (A)**			**0.08 (0.07)**	**2.6 (2.3)**	**A (A)**		

SIGNALIZED INTERSECTIONS

Movement	FutureTotal without improvements					Future Total with improvements				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St										
EBL	0.75 (1.44)	73.1 (258.9)	E (F)	21.0 (~78.8)	#51.0 (#134.8)	0.32 (0.62)	25.9 (15.9)	C (B)	15.0 (30.9)	36.4 (54.7)
EBT	1.11 (0.98)	118.8 (70.2)	F (E)	~139.4 (144.2)	#207.8 (#221.4)	0.24 (0.38)	22.5 (22.0)	C (C)	27.5 (48.2)	47.6 (73.2)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.23 (0.01)	22.8 (17.7)	C (B)	14.9 (0.0)	38.6 (0.0)
NBL	0.25 (0.39)	21.5 (24.2)	C (C)	1.6 (9.2)	7.6 (23.0)	0.22 (0.35)	34.0 (34.3)	C (C)	2.0 (10.9)	7.4 (22.1)
NBT	0.44 (1.52)	21.1 (276.2)	C (F)	48.9 (~400.5)	74.8 (#483.4)	0.18 (0.79)	31.6 (42.8)	C (D)	18.5 (101.6)	25.6 (114.9)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.12 (0.38)	31.1 (34.0)	C (C)	0.0 (14.6)	14.6 (39.7)
SBL	0.27 (0.64)	19.2 (47.5)	B (D)	14.3 (7.1)	27.4 (#28.2)	0.32 (0.58)	33.6 (40.1)	C (D)	19.0 (6.4)	32.0 (m19.7)
SBT	1.28 (0.69)	165.8 (29.4)	F (C)	~341.9 (104.7)	#424.8 (147.6)	0.79 (0.38)	42.8 (27.2)	D (C)	100.0 (37.1)	113.7 (41.8)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.27 (0.10)	32.7 (15.5)	C (B)	10.9 (3.1)	30.6 (7.4)
WBL	1.35 (1.31)	216.3 (207.9)	F (F)	~81.1 (~48.0)	#139.1 (#98.2)	0.50 (0.46)	12.9 (16.5)	B (B)	33.2 (21.7)	57.7 (39.8)
WBT	0.81 (1.26)	40.8 (173.4)	D (F)	125.0 (~215.5)	#175.5 (#290.6)	0.28 (0.42)	12.2 (25.2)	B (C)	33.4 (53.0)	50.7 (85.4)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.07)	10.0 (20.9)	A (C)	0.0 (0.0)	3.8 (12.3)
OVERALL	**1.34 (1.52)**	**114.1 (172.3)**	**F (F)**			**0.62 (0.70)**	**27.5 (28.4)**	**C (C)**		
Humber Station Rd & King St										
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.44 (0.77)	27.8 (33.3)	C (C)	20.9 (43.3)	39.7 (#79.8)
EBT	2.10 (4.19)	528.3 (1481.9)	F (F)	~386.6 (~441.7)	#467.5 (#524.0)	0.47 (0.42)	24.8 (22.9)	C (C)	50.0 (55.3)	66.3 (75.6)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.50 (0.20)	27.1 (20.4)	C (C)	22.5 (10.4)	59.2 (28.2)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.55 (0.91)	31.2 (58.2)	C (E)	14.4 (46.2)	26.5 (#91.8)
NBT	1.04 (2.24)	85.0 (598.0)	F (F)	~89.1 (~416.1)	#148.5 (#497.4)	0.42 (0.72)	36.6 (42.0)	D (D)	28.2 (83.0)	36.6 (100.3)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.08)	33.6 (32.7)	C (C)	0.0 (0.0)	0.0 (0.0)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.74 (0.82)	32.5 (55.2)	C (E)	34.0 (26.9)	#53.7 (#52.5)
SBT	1.98 (1.81)	480.7 (404.7)	F (F)	~280.3 (~298.5)	#355.6 (#376.2)	0.66 (0.74)	37.8 (52.4)	D (D)	48.7 (53.8)	63.7 (69.6)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.16)	31.7 (42.9)	C (D)	0.0 (0.0)	13.2 (20.8)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.23 (0.09)	15.3 (33.9)	B (C)	7.4 (3.5)	15.6 (10.2)
WBT	1.27 (1.35)	160.2 (201.3)	F (F)	~189.3 (~290.5)	#261.5 (#370.2)	0.33 (0.68)	16.8 (43.4)	B (D)	35.1 (78.2)	49.4 (100.4)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.32)	14.5 (37.2)	B (D)	0.6 (16.1)	10.3 (43.1)
OVERALL	**2.25 (3.39)**	**375.3 (719.3)**	**F (F)**			**0.65 (0.90)**	**27.5 (39.8)**	**C (D)**		
King St & Street JJ										
EBL	0.15 (0.34)	9.9 (12.7)	A (B)	2.6 (4.9)	8.5 (11.8)	0.10 (0.23)	9.4 (6.0)	A (A)	2.5 (4.8)	9.0 (11.9)
EBT	0.54 (0.65)	13.2 (10.9)	B (B)	62.1 (80.9)	102.3 (147.5)	0.29 (0.34)	10.3 (6.4)	B (A)	27.1 (30.6)	46.6 (50.2)
SBLR	0.84 (0.70)	42.9 (44.9)	D (D)	65.1 (40.6)	95.4 (62.4)	0.78 (0.68)	36.8 (44.2)	D (D)	63.4 (40.4)	84.6 (61.5)
WBT	0.71 (0.76)	15.4 (16.6)	B (B)	125.9 (86.5)	m187.0 (m#108.2)	0.38 (0.41)	10.7 (7.7)	B (A)	53.4 (28.3)	82.7 (36.0)
WBR	0.07 (0.18)	3.6 (12.6)	A (B)	1.4 (10.3)	m3.3 (m13.7)	0.06 (0.16)	6.4 (5.1)	A (A)	4.8 (2.3)	m9.3 (7.1)
OVERALL	**0.75 (0.75)**	**20.2 (16.9)**	**C (B)**			**0.52 (0.47)**	**16.1 (10.8)**	**B (B)**		
King St & Street I										
EBL	0.12 (0.46)	11.4 (30.6)	B (C)	3.6 (3.4)	m6.2 (m12.3)	0.10 (0.26)	12.3 (5.0)	B (A)	3.4 (3.2)	m9.7 (7.8)
EBT	0.76 (0.70)	21.4 (7.7)	C (A)	119.9 (53.3)	171.7 (87.9)	0.42 (0.37)	15.1 (4.7)	B (A)	53.7 (22.3)	77.3 (33.7)
SBLR	0.88 (0.70)	50.0 (45.3)	D (D)	65.8 (40.8)	#115.1 (62.6)	0.79 (0.68)	37.1 (44.0)	D (D)	63.7 (40.6)	85.1 (61.7)
WBT	0.65 (0.85)	14.7 (24.4)	B (C)	84.5 (151.7)	124.9 (#270.6)	0.36 (0.45)	10.8 (12.0)	B (B)	34.7 (53.0)	58.3 (84.7)
WBR	0.07 (0.19)	7.6 (9.5)	A (A)	2.2 (9.8)	7.7 (23.5)	0.06 (0.17)	8.6 (9.7)	A (A)	1.2 (6.3)	8.4 (19.8)
OVERALL	**0.80 (0.82)**	**24.1 (19.2)**	**C (B)**			**0.54 (0.50)**	**17.7 (11.9)**	**B (B)**		
The Gore Rd & Street Y										
NBT	0.29 (1.08)	7.0 (62.7)	A (E)	22.7 (~274.0)	39.6 (#381.0)	0.26 (0.91)	6.8 (41.2)	A (D)	21.2 (256.2)	37.1 (#389.1)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.16)	5.4 (13.3)	A (B)	0.0 (11.2)	4.1 (m36.4)
SBL	0.03 (0.58)	5.5 (31.0)	A (C)	0.8 (2.2)	m2.1 (m#25.3)	0.03 (0.59)	5.5 (34.8)	A (C)	0.8 (4.6)	m2.0 (#30.9)
SBT	0.84 (0.36)	14.5 (4.3)	B (A)	71.9 (19.0)	#247.2 (33.7)	0.84 (0.34)	14.5 (5.9)	B (A)	71.9 (34.8)	#247.2 (58.1)
WBLR	0.78 (0.66)	43.8 (39.9)	D (D)	47.2 (33.2)	72.7 (51.4)	0.78 (0.75)	43.8 (59.2)	D (E)	47.2 (46.8)	72.7 (70.3)
OVERALL	**0.83 (0.99)**	**17.8 (46.5)**	**B (D)**			**0.83 (0.88)**	**17.7 (32.7)**	**B (C)**		
The Gore Rd & Street A										
NBTR	0.25 (0.85)	8.5 (14.5)	A (B)	32.2 (116.2)	29.7 (m121.5)	0.25 (0.85)	8.3 (18.1)	A (B)	32.4 (122.2)	29.6 (#264.6)
SBL	0.07 (0.33)	5.8 (10.9)	A (B)	2.6 (3.3)	7.1 (14.2)	0.07 (0.33)	5.8 (10.9)	A (B)	2.6 (3.3)	7.1 (14.2)
SBT	0.65 (0.27)	12.1 (5.8)	B (A)	79.9 (20.8)	133.1 (41.1)	0.65 (0.27)	12.1 (5.8)	B (A)	79.9 (20.8)	133.1 (41.1)
WBLR	0.77 (0.67)	43.1 (40.5)	D (D)	48.4 (33.8)	73.7 (52.9)	0.77 (0.67)	43.1 (40.5)	D (D)	48.4 (33.8)	73.7 (52.9)
OVERALL	**0.68 (0.82)**	**17.5 (15.9)**	**B (B)**			**0.68 (0.82)**	**17.4 (18.2)**	**B (B)**		

Humber Station Rd & Street E										
EBLTR	0.09 (0.09)	10.2 (10.2)	B (B)	0.5 (1.3)	8.3 (8.5)	0.11 (0.10)	28.7 (21.3)	C (C)	1.3 (2.7)	13.6 (12.9)
NBL	0.14 (0.36)	11.2 (13.4)	B (B)	2.3 (9.6)	7.5 (21.6)	0.07 (0.28)	6.0 (12.3)	A (B)	2.5 (14.5)	8.1 (29.3)
NBT	0.32 (0.98)	12.1 (45.5)	B (D)	14.3 (61.7)	27.4 (#123.1)	0.19 (0.69)	6.5 (18.9)	A (B)	15.3 (91.2)	30.2 (145.8)
NBR	0.24 (0.24)	11.5 (11.5)	B (B)	0.0 (0.0)	13.1 (13.1)	0.28 (0.28)	14.1 (12.0)	B (B)	1.0 (0.0)	12.7 (14.2)
SBL	0.00 (0.03)	9.6 (10.1)	A (B)	0.1 (0.3)	0.8 (1.9)	0.00 (0.02)	5.4 (9.7)	A (A)	0.1 (0.4)	0.8 (2.3)
SBTR	0.62 (0.37)	16.5 (12.7)	B (B)	31.5 (16.9)	55.9 (31.9)	0.36 (0.26)	7.8 (11.6)	A (B)	31.6 (25.2)	63.2 (43.5)
WBLTR	0.40 (0.75)	13.9 (23.8)	B (C)	11.6 (26.6)	25.2 (#63.9)	0.76 (0.87)	46.0 (46.0)	D (D)	30.8 (56.2)	48.6 (#95.9)
OVERALL	**0.50 (0.86)**	**13.3 (26.1)**	**B (C)**			**0.45 (0.76)**	**16.1 (21.0)**	**B (C)**		
Humber Station Rd & Street Y										
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.11 (0.62)	22.9 (46.4)	C (D)	5.3 (10.7)	11.1 (#27.9)
EBTR	0.64 (0.76)	32.9 (42.8)	C (D)	38.4 (27.1)	48.4 (41.2)	0.78 (0.60)	35.5 (36.4)	D (D)	68.4 (44.3)	88.0 (68.0)
NBL	0.22 (0.24)	8.1 (6.7)	A (A)	5.0 (7.7)	13.3 (m15.7)	0.20 (0.31)	10.6 (16.7)	B (B)	6.0 (15.0)	16.0 (31.6)
NBTR	0.48 (0.98)	9.3 (35.8)	A (D)	41.9 (187.0)	69.0 (#311.6)	0.28 (0.70)	10.1 (21.7)	B (C)	23.4 (96.8)	38.5 (133.7)
SBL	0.21 (2.50)	8.1 (723.3)	A (F)	6.4 (~49.6)	17.7 (#95.0)	0.21 (0.67)	12.3 (19.1)	B (B)	10.0 (15.0)	25.8 (38.3)
SBTR	0.59 (0.40)	11.9 (7.2)	B (A)	66.2 (35.6)	126.8 (57.3)	0.35 (0.22)	13.0 (7.5)	B (A)	42.2 (20.8)	69.6 (30.6)
WBL	0.86 (0.55)	67.7 (37.1)	E (D)	22.5 (14.3)	#45.1 (29.4)	0.95 (0.50)	91.4 (35.4)	F (D)	22.8 (15.2)	#50.3 (30.6)
WBT	0.19 (0.72)	27.7 (38.5)	C (D)	8.1 (38.9)	15.7 (54.5)	0.19 (0.83)	23.5 (49.2)	C (D)	14.3 (69.5)	22.7 (100.1)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.15)	22.7 (30.6)	C (C)	0.0 (5.2)	10.7 (18.4)
OVERALL	**0.66 (2.13)**	**20.3 (79.8)**	**C (E)**			**0.56 (0.74)**	**22.2 (24.8)**	**C (C)**		
Humber Station Rd & Street EE										
EBLR	0.09 (0.03)	37.2 (37.9)	D (D)	2.8 (0.9)	7.7 (3.6)	0.09 (0.03)	37.2 (37.9)	D (D)	2.8 (0.9)	7.7 (3.6)
NBTL	0.43 (0.83)	4.5 (11.9)	A (B)	24.6 (0.0)	74.6 (#308.5)	0.22 (0.44)	3.1 (3.8)	A (A)	10.5 (0.0)	29.2 (69.1)
SBTR	0.62 (0.56)	5.2 (4.4)	A (A)	28.9 (0.0)	97.1 (91.9)	0.32 (0.29)	2.5 (3.0)	A (A)	12.5 (0.0)	29.5 (40.0)
OVERALL	**0.56 (0.76)**	**5.2 (9.0)**	**A (A)**			**0.30 (0.40)**	**3.1 (3.5)**	**A (A)**	0.0 (0.0)	0.0 (0.0)

UNSIGNALIZED INTERSECTIONS

Movement	FutureTotal without improvements				Future Total with improvements			
	LOS	95thQueue	LOS	95thQueue	V/C	Delay (Sec)	LOS	95thQueue
				The Gore Rd & Street DDD				
WBR	0.04 (0.09)	1.50 (2.90)	A (A)	1.00 (2.30)	0.04 (0.09)	1.50 (2.90)	A (A)	1.00 (2.30)

ROUNDABOUT ANALYSIS- EMIL KOLB & KING STREET

Movement	Scenario: Existing Conditions					Future Background 2041					Future Total 2041				
	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue
King St & Emil Kolb Parkway															
EB	0.25 (0.28)	3.9 (3.7)	A (A)	3.8 (3.0)	12.8 (12.0)	0.27 (0.33)	3.6 (3.9)	A (A)	4.5 (3.8)	14.3 (13.5)	0.44 (0.44)	4.7 (4.4)	A (A)	8.3 (8.3)	20.3 (21.0)
NB	0.26 (0.50)	4.5 (5.5)	A (A)	3.8 (8.3)	12.0 (24.0)	0.39 (0.57)	4.3 (5.4)	A (A)	4.5 (10.5)	13.5 (30.0)	0.49 (0.86)	4.8 (10.6)	A (B)	9.8 (36.8)	27.8 (87.8)
SB	0.24 (0.12)	3.6 (3.9)	A (A)	4.5 (1.5)	12.8 (8.3)	0.29 (0.22)	3.5 (3.5)	A (A)	3.8 (3.0)	10.5 (12.0)	0.41 (0.32)	4.0 (4.2)	A (A)	6.0 (6.0)	22.5 (17.3)
Overall	0.26 (0.50)	4.0 (4.7)	A (A)			0.39 (0.57)	3.8 (4.5)	A (A)			0.49 (0.86)	4.5 (7.6)	A (A)		

ROUNDABOUT ANALYSIS- EMIL KOLB & GO ACCESS

Movement	Scenario: Existing Conditions					Future Background 2041					Future Total 2041				
	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue
Emil Kolb Parkway & GO Station Access															
EB	-	-	-	-	-	0.06 (0.19)	3.6 (3.7)	A (A)	0.0 (1.5)	7.5 (6.0)	0.36 (0.35)	4.8 (4.5)	A (A)	5.3 (4.5)	15.0 (14.3)
NB	-	-	-	-	-	0.23 (0.27)	3.5 (3.5)	A (A)	3.0 (4.5)	12.0 (15.0)	0.31 (0.53)	4.0 (4.9)	A (A)	4.5 (9.8)	14.3 (30.0)
SB	-	-	-	-	-	0.23 (0.08)	3.1 (2.8)	A (A)	3.8 (0.8)	15.0 (4.5)	0.25 (0.20)	3.3 (3.4)	A (A)	3.8 (2.3)	12.8 (6.8)
Overall	-	-	-	-	-	0.23 (0.27)	3.3 (3.4)	A (A)			0.36 (0.53)	4.0 (4.5)	A (A)		

APPENDIX F:
Synchro and Arcady Worksheets

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	135.0		0.0	140.0		0.0	200.0		0.0	175.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			20.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.937			0.989			0.958			0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1681	0	1700	1768	0	1275	1770	0	1700	1839	0
Flt Permitted	0.493			0.472			0.259			0.702		
Satd. Flow (perm)	820	1681	0	845	1768	0	348	1770	0	1256	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		60			6			24			26	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		363.2			560.5			628.5			762.7	
Travel Time (s)		26.2			40.4			45.3			54.9	

Intersection Summary	
Area Type:	Other

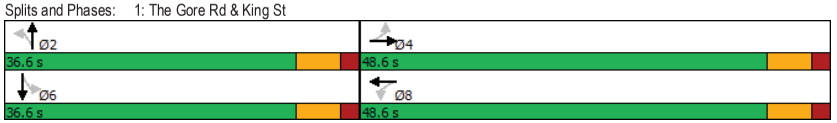
Timings
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	51	237	43	357	11	61	100	316
Future Volume (vph)	51	237	43	357	11	61	100	316
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6
Minimum Split (s)	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
Total Split (s)	48.6	48.6	48.6	48.6	36.6	36.6	36.6	36.6
Total Split (%)	57.0%	57.0%	57.0%	57.0%	43.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Min	Min	Min	Min
Act Effct Green (s)	42.1	42.1	42.1	42.1	23.2	23.2	23.2	23.2
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.30	0.30	0.30	0.30
v/c Ratio	0.12	0.44	0.09	0.40	0.11	0.16	0.27	0.79
Control Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7
LOS	B	B	B	B	C	B	C	C
Approach Delay		11.8		12.9		16.5		32.5
Approach LOS		B		B		B		C

Intersection Summary		
Cycle Length: 85.2		
Actuated Cycle Length: 78.5		
Natural Cycle: 55		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.79		
Intersection Signal Delay: 19.7	Intersection LOS: B	
Intersection Capacity Utilization 67.8%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	408	43	384	11	85	100	441
v/c Ratio	0.12	0.44	0.09	0.40	0.11	0.16	0.27	0.79
Control Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7
Queue Length 50th (m)	3.6	29.4	3.0	31.9	1.3	6.9	11.9	59.2
Queue Length 95th (m)	10.9	61.1	9.6	62.6	5.1	16.9	23.9	92.5
Internal Link Dist (m)		339.2		536.5		604.5		738.7
Turn Bay Length (m)	135.0		140.0		200.0		175.0	
Base Capacity (vph)	439	929	453	951	133	692	481	720
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	0.44	0.09	0.40	0.08	0.12	0.21	0.61

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	237	171	43	357	27	11	61	24	100	316	125
Future Volume (vph)	51	237	171	43	357	27	11	61	24	100	316	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	6.6	6.6		6.6	6.6		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1580	1682		1700	1769		1275	1770		1700	1839	
Flt Permitted	0.49	1.00		0.47	1.00		0.26	1.00		0.70	1.00	
Satd. Flow (perm)	819	1682		845	1769		348	1770		1256	1839	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	237	171	43	357	27	11	61	24	100	316	125
RTOR Reduction (vph)	0	28	0	0	3	0	0	17	0	0	18	0
Lane Group Flow (vph)	51	380	0	43	381	0	11	68	0	100	423	0
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.1	42.1		42.1	42.1		23.2	23.2		23.2	23.2	
Effective Green, g (s)	42.1	42.1		42.1	42.1		23.2	23.2		23.2	23.2	
Actuated g/C Ratio	0.54	0.54		0.54	0.54		0.30	0.30		0.30	0.30	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	439	902		453	948		102	523		371	543	
v/s Ratio Prot		c0.23			0.22			0.04			c0.23	
v/s Ratio Perm	0.06			0.05			0.03			0.08		
v/c Ratio	0.12	0.42		0.09	0.40		0.11	0.13		0.27	0.78	
Uniform Delay, d1	9.0	10.9		8.9	10.8		20.1	20.3		21.2	25.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	1.4		0.4	1.3		0.5	0.1		0.4	6.9	
Delay (s)	9.5	12.3		9.3	12.0		20.6	20.4		21.6	32.2	
Level of Service	A	B		A	B		C	C		C	C	
Approach Delay (s)		12.0			11.8			20.4			30.3	
Approach LOS		B			B			C			C	

Intersection Summary				
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.55			
Actuated Cycle Length (s)	78.5	Sum of lost time (s)	13.2	
Intersection Capacity Utilization	67.8%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	10.0		0.0	10.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	15.0			15.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.967			0.997			0.947			0.991	
Flt Protected		0.999			0.993			0.982			0.989	
Satd. Flow (prot)	0	1720	0	0	1816	0	0	1211	0	0	1627	0
Flt Permitted		0.995			0.880			0.867			0.921	
Satd. Flow (perm)	0	1713	0	0	1609	0	0	1069	0	0	1515	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			3			18			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		342.4			840.4			348.4			739.7	
Travel Time (s)		24.7			60.5			25.1			53.3	

Intersection Summary	
Area Type:	Other

Timings
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	5	318	73	417	17	11	17	54
Future Volume (vph)	5	318	73	417	17	11	17	54
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	14.4	14.4	14.4	14.4
Minimum Split (s)	22.4	22.4	22.4	22.4	21.4	21.4	21.4	21.4
Total Split (s)	85.0	85.0	85.0	85.0	25.0	25.0	25.0	25.0
Total Split (%)	77.3%	77.3%	77.3%	77.3%	22.7%	22.7%	22.7%	22.7%
Yellow Time (s)	5.4	5.4	5.4	5.4	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		7.4		7.4		6.4		6.4
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Min	Min	Min	Min
Act Effct Green (s)		77.6		77.6		14.5		14.5
Actuated g/C Ratio		0.73		0.73		0.14		0.14
v/c Ratio		0.34		0.43		0.29		0.36
Control Delay		5.4		6.8		33.3		45.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		5.4		6.8		33.3		45.4
LOS		A		A		C		D
Approach Delay		5.4		6.8		33.3		45.4
Approach LOS		A		A		C		D

Intersection Summary		
Cycle Length: 110		
Actuated Cycle Length: 105.9		
Natural Cycle: 55		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.43		
Intersection Signal Delay: 10.2	Intersection LOS: B	
Intersection Capacity Utilization 79.7%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St

Queues
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	426	502	46	76
v/c Ratio	0.34	0.43	0.29	0.36
Control Delay	5.4	6.8	33.3	45.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.4	6.8	33.3	45.4
Queue Length 50th (m)	25.1	35.8	5.5	14.6
Queue Length 95th (m)	38.6	53.5	16.9	29.5
Internal Link Dist (m)	318.4	816.4	324.4	715.7
Turn Bay Length (m)				
Base Capacity (vph)	1264	1179	202	268
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	0.34	0.43	0.23	0.28

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	318	103	73	417	12	17	11	18	17	54	5
Future Volume (vph)	5	318	103	73	417	12	17	11	18	17	54	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.4			7.4			6.4			6.4	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			1.00			0.95			0.99	
Flt Protected		1.00			0.99			0.98			0.99	
Satd. Flow (prot)		1721			1815			1211			1627	
Flt Permitted		1.00			0.88			0.87			0.92	
Satd. Flow (perm)		1714			1609			1069			1516	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	318	103	73	417	12	17	11	18	17	54	5
RTOR Reduction (vph)	0	9	0	0	1	0	0	16	0	0	3	0
Lane Group Flow (vph)	0	417	0	0	501	0	0	30	0	0	73	0
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		77.6			77.6			14.5			14.5	
Effective Green, g (s)		77.6			77.6			14.5			14.5	
Actuated g/C Ratio		0.73			0.73			0.14			0.14	
Clearance Time (s)		7.4			7.4			6.4			6.4	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1255			1179			146			207	
v/s Ratio Prot												
v/s Ratio Perm		0.24			c0.31			0.03			c0.05	
v/c Ratio		0.33			0.43			0.21			0.35	
Uniform Delay, d1		5.0			5.5			40.6			41.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			1.1			0.7			1.0	
Delay (s)		5.7			6.6			41.3			42.5	
Level of Service		A			A			D			D	
Approach Delay (s)		5.7			6.6			41.3			42.5	
Approach LOS		A			A			D			D	

Intersection Summary					
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.41				
Actuated Cycle Length (s)	105.9	Sum of lost time (s)	13.8		
Intersection Capacity Utilization	79.7%	ICU Level of Service	D		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	135.0		0.0	140.0		0.0	200.0		0.0	175.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			20.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.992			0.971			0.988			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1738	0	1700	1753	0	1275	1877	0	1700	1825	0
Flt Permitted	0.394			0.502			0.649			0.375		
Satd. Flow (perm)	655	1738	0	898	1753	0	871	1877	0	671	1825	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5			20			6			32	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		363.2			560.5			628.5			762.7	
Travel Time (s)		26.2			40.4			45.3			54.9	

Intersection Summary	
Area Type:	Other

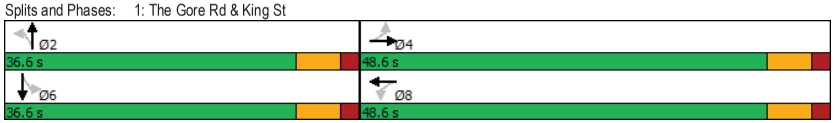
Timings
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	148	364	13	416	57	319	38	115
Future Volume (vph)	148	364	13	416	57	319	38	115
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6
Minimum Split (s)	26.6	26.6	26.6	26.6	26.6	26.6	26.6	26.6
Total Split (s)	48.6	48.6	48.6	48.6	36.6	36.6	36.6	36.6
Total Split (%)	57.0%	57.0%	57.0%	57.0%	43.0%	43.0%	43.0%	43.0%
Yellow Time (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Min	Min	Min	Min
Act Effct Green (s)	42.1	42.1	42.1	42.1	20.6	20.6	20.6	20.6
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.27	0.27	0.27	0.27
v/c Ratio	0.41	0.40	0.03	0.53	0.24	0.68	0.21	0.33
Control Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6
LOS	B	B	A	B	C	C	C	B
Approach Delay		12.5		13.1		30.4		20.4
Approach LOS		B		B		C		C

Intersection Summary		
Cycle Length: 85.2		
Actuated Cycle Length: 75.9		
Natural Cycle: 60		
Control Type: Semi Act-Uncoord		
Maximum v/c Ratio: 0.68		
Intersection Signal Delay: 18.0	Intersection LOS: B	
Intersection Capacity Utilization 92.2%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	384	13	517	57	347	38	172
v/c Ratio	0.41	0.40	0.03	0.53	0.24	0.68	0.21	0.33
Control Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6
Queue Length 50th (m)	11.0	27.9	0.8	40.0	6.7	45.6	4.4	16.6
Queue Length 95th (m)	30.7	57.5	3.7	81.8	16.1	72.7	12.1	32.1
Internal Link Dist (m)		339.2		536.5		604.5		738.7
Turn Bay Length (m)	135.0		140.0		200.0		175.0	
Base Capacity (vph)	362	965	497	980	345	746	265	741
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	0.41	0.40	0.03	0.53	0.17	0.47	0.14	0.23

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	364	20	13	416	101	57	319	28	38	115	57
Future Volume (vph)	148	364	20	13	416	101	57	319	28	38	115	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Total Lost time (s)	6.6	6.6		6.6	6.6		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1580	1739		1700	1752		1275	1877		1700	1826	
Flt Permitted	0.39	1.00		0.50	1.00		0.65	1.00		0.38	1.00	
Satd. Flow (perm)	655	1739		898	1752		870	1877		672	1826	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	148	364	20	13	416	101	57	319	28	38	115	57
RTOR Reduction (vph)	0	2	0	0	9	0	0	4	0	0	23	0
Lane Group Flow (vph)	148	382	0	13	508	0	57	343	0	38	149	0
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	42.1	42.1		42.1	42.1		20.6	20.6		20.6	20.6	
Effective Green, g (s)	42.1	42.1		42.1	42.1		20.6	20.6		20.6	20.6	
Actuated g/C Ratio	0.55	0.55		0.55	0.55		0.27	0.27		0.27	0.27	
Clearance Time (s)	6.6	6.6		6.6	6.6		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	363	964		498	971		236	509		182	495	
v/s Ratio Prot		0.22			c0.29			c0.18			0.08	
v/s Ratio Perm	0.23			0.01			0.07			0.06		
v/c Ratio	0.41	0.40		0.03	0.52		0.24	0.67		0.21	0.30	
Uniform Delay, d1	9.7	9.6		7.6	10.6		21.6	24.6		21.4	21.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	1.2		0.1	2.0		0.5	3.5		0.6	0.3	
Delay (s)	13.1	10.9		7.7	12.6		22.1	28.1		21.9	22.3	
Level of Service	B	B		A	B		C	C		C	C	
Approach Delay (s)		11.5			12.5			27.3			22.2	
Approach LOS		B			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.57				
Actuated Cycle Length (s)	75.9	Sum of lost time (s)		13.2	
Intersection Capacity Utilization	92.2%	ICU Level of Service		F	
Analysis Period (min)	15				

c Critical Lane Group

Lanes and Geometrics
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	10.0		0.0	10.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	15.0			15.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.993			0.989			0.956			0.970	
Flt Protected		0.999			0.998			0.983			0.983	
Satd. Flow (prot)	0	1754	0	0	1814	0	0	1274	0	0	1487	0
Flt Permitted		0.992			0.975			0.870			0.866	
Satd. Flow (perm)	0	1742	0	0	1772	0	0	1127	0	0	1310	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			7			37			9	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		342.4			840.4			348.4			739.7	
Travel Time (s)		24.7			60.5			25.1			53.3	

Intersection Summary

Area Type: Other

Timings
2: Humber Station Rd & King St

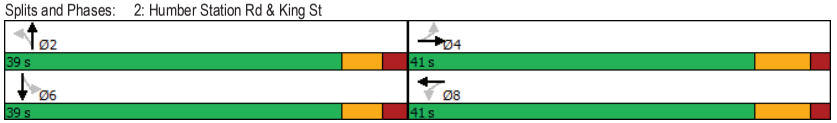
05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	7	442	18	429	71	69	14	18
Future Volume (vph)	7	442	18	429	71	69	14	18
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		4		8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	8	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	14.4	14.4	14.4	14.4
Minimum Split (s)	22.4	22.4	22.4	22.4	21.4	21.4	21.4	21.4
Total Split (s)	41.0	41.0	41.0	41.0	39.0	39.0	39.0	39.0
Total Split (%)	51.3%	51.3%	51.3%	51.3%	48.8%	48.8%	48.8%	48.8%
Yellow Time (s)	5.4	5.4	5.4	5.4	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		7.4		7.4		6.4		6.4
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	Max	Max	Max	Max	Min	Min	Min	Min
Act Effct Green (s)		33.7		33.7		16.8		16.8
Actuated g/C Ratio		0.52		0.52		0.26		0.26
v/c Ratio		0.52		0.52		0.65		0.12
Control Delay		13.2		13.2		27.3		15.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		13.2		13.2		27.3		15.4
LOS		B		B		C		B
Approach Delay		13.2		13.2		27.3		15.4
Approach LOS		B		B		C		B

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 64.3
Natural Cycle: 55
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 15.7 Intersection LOS: B
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	473	488	208	41
v/c Ratio	0.52	0.52	0.65	0.12
Control Delay	13.2	13.2	27.3	15.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.2	13.2	27.3	15.4
Queue Length 50th (m)	31.9	32.8	18.7	3.0
Queue Length 95th (m)	72.5	74.5	39.1	9.4
Internal Link Dist (m)	318.4	816.4	324.4	715.7
Turn Bay Length (m)				
Base Capacity (vph)	914	931	590	670
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	0.52	0.52	0.35	0.06

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	442	24	18	429	41	71	69	68	14	18	9
Future Volume (vph)	7	442	24	18	429	41	71	69	68	14	18	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.4			7.4			6.4			6.4	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.96			0.97	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1755			1813			1274			1488	
Flt Permitted		0.99			0.98			0.87			0.87	
Satd. Flow (perm)		1742			1772			1127			1312	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	7	442	24	18	429	41	71	69	68	14	18	9
RTOR Reduction (vph)	0	2	0	0	3	0	0	27	0	0	7	0
Lane Group Flow (vph)	0	471	0	0	485	0	0	181	0	0	34	0
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.7			33.7			16.8			16.8	
Effective Green, g (s)		33.7			33.7			16.8			16.8	
Actuated g/C Ratio		0.52			0.52			0.26			0.26	
Clearance Time (s)		7.4			7.4			6.4			6.4	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		912			928			294			342	
v/s Ratio Prot												
v/s Ratio Perm		0.27			c0.27			c0.16			0.03	
v/c Ratio		0.52			0.52			0.61			0.10	
Uniform Delay, d1		10.0			10.0			20.9			18.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.1			2.1			3.8			0.1	
Delay (s)		12.1			12.1			24.7			18.1	
Level of Service		B			B			C			B	
Approach Delay (s)		12.1			12.1			24.7			18.1	
Approach LOS		B			B			C			B	

Intersection Summary					
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.55				
Actuated Cycle Length (s)	64.3	Sum of lost time (s)	13.8		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.94	0.95		0.97	0.99			0.94		0.90	0.97	
Frt		0.946			0.991			0.940			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1604	0	1681	1756	0	1261	1613	0	1681	1803	0
Flt Permitted	0.465			0.316			0.134			0.649		
Satd. Flow (perm)	721	1604	0	540	1756	0	178	1613	0	1033	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			4			34			14	
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

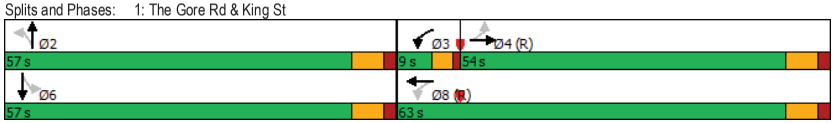
Timings
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	52	300	53	434	11	93	100	461
Future Volume (vph)	52	300	53	434	11	93	100	461
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6
Minimum Split (s)	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6
Total Split (s)	54.0	54.0	9.0	63.0	57.0	57.0	57.0	57.0
Total Split (%)	45.0%	45.0%	7.5%	52.5%	47.5%	47.5%	47.5%	47.5%
Yellow Time (s)	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min	Min	Min
Act Effct Green (s)	54.7	54.7	65.9	63.3	43.5	43.5	43.5	43.5
Actuated g/C Ratio	0.46	0.46	0.55	0.53	0.36	0.36	0.36	0.36
v/c Ratio	0.16	0.63	0.15	0.50	0.17	0.26	0.27	0.88
Control Delay	24.8	30.4	15.7	21.7	30.4	20.4	27.3	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	30.4	15.7	21.7	30.4	20.4	27.3	50.4
LOS	C	C	B	C	C	C	C	D
Approach Delay		29.9		21.1		21.1		47.1
Approach LOS		C		C		C		D

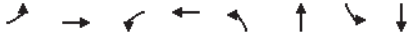
Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.88		
Intersection Signal Delay: 33.0	Intersection LOS: C	
Intersection Capacity Utilization 99.9%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-16-2023



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	52	471	53	461	11	155	100	586
v/c Ratio	0.16	0.63	0.15	0.50	0.17	0.26	0.27	0.88
Control Delay	24.8	30.4	15.7	21.7	30.4	20.4	27.3	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.8	30.4	15.7	21.7	30.4	20.4	27.3	50.4
Queue Length 50th (m)	7.8	87.1	6.0	71.1	1.8	19.8	16.8	127.9
Queue Length 95th (m)	18.0	132.9	13.8	111.2	6.5	33.3	28.6	165.2
Internal Link Dist (m)		339.2		183.4		604.6		554.8
Turn Bay Length (m)			139.9		199.9		175.0	
Base Capacity (vph)	330	750	357	927	74	697	433	765
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	0.16	0.63	0.15	0.50	0.15	0.22	0.23	0.77

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	300	171	53	434	27	11	93	62	100	461	125
Future Volume (vph)	52	300	171	53	434	27	11	93	62	100	461	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	6.6	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.95		1.00	0.99		1.00	0.94		1.00	0.97	
Flpb, ped/bikes	0.94	1.00		0.99	1.00		1.00	1.00		0.90	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.94		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1466	1603		1664	1756		1261	1613		1514	1803	
Flt Permitted	0.47	1.00		0.32	1.00		0.13	1.00		0.65	1.00	
Satd. Flow (perm)	718	1603		553	1756		178	1613		1035	1803	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	52	300	171	53	434	27	11	93	62	100	461	125
RTOR Reduction (vph)	0	15	0	0	2	0	0	22	0	0	9	0
Lane Group Flow (vph)	52	456	0	53	459	0	11	133	0	100	577	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.9	53.9		63.3	63.3		43.5	43.5		43.5	43.5	
Effective Green, g (s)	53.9	53.9		63.3	63.3		43.5	43.5		43.5	43.5	
Actuated g/C Ratio	0.45	0.45		0.53	0.53		0.36	0.36		0.36	0.36	
Clearance Time (s)	6.6	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	322	720		341	926		64	584		375	653	
v/s Ratio Prot		c0.28		0.01	c0.26			0.08			c0.32	
v/s Ratio Perm	0.07			0.07			0.06			0.10		
v/c Ratio	0.16	0.63		0.16	0.50		0.17	0.23		0.27	0.88	
Uniform Delay, d1	19.6	25.4		15.8	18.1		26.0	26.6		27.0	35.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	4.2		0.2	1.9		1.3	0.2		0.4	13.5	
Delay (s)	20.7	29.6		16.0	20.0		27.3	26.8		27.4	49.3	
Level of Service	C	C		B	C		C	C		C	D	
Approach Delay (s)		28.7			19.6			26.8			46.1	
Approach LOS		C			B			C			D	

Intersection Summary					
HCM 2000 Control Delay	32.4	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.74				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2		
Intersection Capacity Utilization	99.9%	ICU Level of Service	F		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.98			0.98			0.97	
Frt		0.974			0.985			0.986			0.982	
Flt Protected		0.995			0.994			0.995			0.994	
Satd. Flow (prot)	0	1695	0	0	1779	0	0	1649	0	0	1626	0
Flt Permitted		0.885			0.884			0.960			0.949	
Satd. Flow (perm)	0	1502	0	0	1573	0	0	1578	0	0	1536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			8			6			8	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary

Area Type: Other

Timings
2: Humber Station Rd & King St

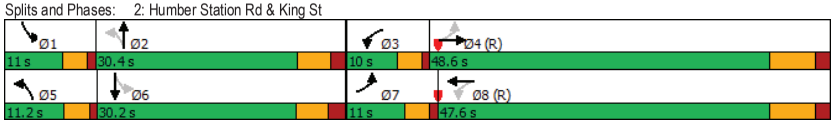
05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	56	384	73	503	17	136	17	98
Future Volume (vph)	56	384	73	503	17	136	17	98
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	10.0	31.4	11.2	30.0	11.0	30.2
Total Split (s)	11.0	48.6	10.0	47.6	11.2	30.4	11.0	30.2
Total Split (%)	11.0%	48.6%	10.0%	47.6%	11.2%	30.4%	11.0%	30.2%
Yellow Time (s)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		7.4		7.4		6.0		6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	Min	None	Min
Act Effct Green (s)		68.0		68.0		18.6		18.4
Actuated g/C Ratio		0.68		0.68		0.19		0.18
v/c Ratio		0.53		0.60		0.57		0.46
Control Delay		11.0		12.5		42.7		38.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.0		12.5		42.7		38.3
LOS		B		B		D		D
Approach Delay		11.0		12.5		42.7		38.3
Approach LOS		B		B		D		D

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 95
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.60
Intersection Signal Delay: 17.7 Intersection LOS: B
Intersection Capacity Utilization 77.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	543	646	171	133
v/c Ratio	0.53	0.60	0.57	0.46
Control Delay	11.0	12.5	42.7	38.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	12.5	42.7	38.3
Queue Length 50th (m)	41.4	54.6	31.8	23.5
Queue Length 95th (m)	87.7	113.7	48.7	38.3
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1025	1071	389	374
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	0.53	0.60	0.44	0.36

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	384	103	73	503	70	17	136	18	17	98	18
Future Volume (vph)	56	384	103	73	503	70	17	136	18	17	98	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)		7.4			7.4			6.0			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.98			0.99			0.99			0.98	
Flpb, ped/bikes		1.00			0.99			0.99			0.99	
Frt		0.97			0.99			0.99			0.98	
Flt Protected		0.99			0.99			1.00			0.99	
Satd. Flow (prot)		1689			1771			1636			1610	
Flt Permitted		0.89			0.88			0.96			0.95	
Satd. Flow (perm)		1503			1575			1578			1538	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	56	384	103	73	503	70	17	136	18	17	98	18
RTOR Reduction (vph)	0	5	0	0	3	0	0	5	0	0	7	0
Lane Group Flow (vph)	0	538	0	0	643	0	0	166	0	0	126	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		68.0			68.0			18.6			18.4	
Effective Green, g (s)		68.0			68.0			18.6			18.4	
Actuated g/C Ratio		0.68			0.68			0.19			0.18	
Clearance Time (s)		7.4			7.4			6.0			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1022			1071			293			282	
v/s Ratio Prot												
v/s Ratio Perm		0.36			c0.41			c0.11			0.08	
v/c Ratio		0.53			0.60			0.57			0.45	
Uniform Delay, d1		8.0			8.7			37.0			36.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			1.0			2.5			1.1	
Delay (s)		8.5			9.6			39.5			37.4	
Level of Service		A			A			D			D	
Approach Delay (s)		8.5			9.6			39.5			37.4	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		1.00			
Frt			0.997			
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1871	0	1821	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1606	0	1871	0	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)			3			
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	1	202	788
Future Volume (vph)	1	202	788
Turn Type	Prot	NA	NA
Protected Phases	8	2	6
Permitted Phases			
Detector Phase	8	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Min	C-Min
Act Effct Green (s)	12.1	76.4	76.4
Actuated g/C Ratio	0.13	0.85	0.85
v/c Ratio	0.00	0.13	0.49
Control Delay	27.0	4.4	10.8
Queue Delay	0.0	0.0	0.0
Total Delay	27.0	4.4	10.8
LOS	C	A	B
Approach Delay	27.0	4.4	10.8
Approach LOS	C	A	B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.49		
Intersection Signal Delay: 9.5	Intersection LOS: A	
Intersection Capacity Utilization 67.1%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	1	207	788
v/c Ratio	0.00	0.13	0.49
Control Delay	27.0	4.4	10.8
Queue Delay	0.0	0.0	0.0
Total Delay	27.0	4.4	10.8
Queue Length 50th (m)	0.2	0.0	0.0
Queue Length 95th (m)	1.4	23.6	109.0
Internal Link Dist (m)	110.7	554.8	187.4
Turn Bay Length (m)			
Base Capacity (vph)	437	1589	1598
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.00	0.13	0.49

Intersection Summary

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1	0	202	5	0	788
Future Volume (vph)	1	0	202	5	0	788
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frpb, ped/bikes	1.00		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	1789		1871			1883
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	1789		1871			1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	1	0	202	5	0	788
RTOR Reduction (vph)	0	0	1	0	0	0
Lane Group Flow (vph)	1	0	206	0	0	788
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.8		69.2			69.2
Effective Green, g (s)	8.8		69.2			69.2
Actuated g/C Ratio	0.10		0.77			0.77
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	174		1438			1447
v/s Ratio Prot	c0.00		0.11			c0.42
v/s Ratio Perm						
v/c Ratio	0.01		0.14			0.54
Uniform Delay, d1	36.7		2.7			4.1
Progression Factor	1.00		1.00			1.56
Incremental Delay, d2	0.0		0.2			1.3
Delay (s)	36.7		2.9			7.8
Level of Service	D		A			A
Approach Delay (s)	36.7		2.9			7.8
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	6.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88				0.90	
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1433	0	1883	0	1730	1883
Flt Permitted					0.631	
Satd. Flow (perm)	1433	0	1883	0	1034	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	586					
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	0	202	26	788
Future Volume (vph)	0	202	26	788
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	12.1	76.4	76.4	76.4
Actuated g/C Ratio	0.13	0.85	0.85	0.85
v/c Ratio	0.01	0.13	0.03	0.49
Control Delay	0.0	4.1	5.2	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.1	5.2	7.4
LOS	A	A	A	A
Approach Delay		4.1		7.3
Approach LOS		A		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.49		
Intersection Signal Delay: 6.6	Intersection LOS: A	
Intersection Capacity Utilization 67.2%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	202	26	788
v/c Ratio	0.01	0.13	0.03	0.49
Control Delay	0.0	4.1	5.2	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.1	5.2	7.4
Queue Length 50th (m)	0.0	0.0	0.0	0.0
Queue Length 95th (m)	0.0	23.3	4.7	123.4
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	793	1598	878	1598
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	0.01	0.13	0.03	0.49

Intersection Summary

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	7	202	0	26	788
Future Volume (vph)	0	7	202	0	26	788
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.88		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.90	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1433		1883		1557	1883
Flt Permitted	1.00		1.00		0.63	1.00
Satd. Flow (perm)	1433		1883		1034	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	7	202	0	26	788
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	1	0	202	0	26	788
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.8		69.2		69.2	69.2
Effective Green, g (s)	8.8		69.2		69.2	69.2
Actuated g/C Ratio	0.10		0.77		0.77	0.77
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	140		1447		795	1447
v/s Ratio Prot	c0.00		0.11			c0.42
v/s Ratio Perm					0.03	
v/c Ratio	0.00		0.14		0.03	0.54
Uniform Delay, d1	36.6		2.7		2.5	4.1
Progression Factor	1.00		0.94		1.00	1.00
Incremental Delay, d2	0.0		0.2		0.1	1.5
Delay (s)	36.7		2.7		2.5	5.6
Level of Service	D		A		A	A
Approach Delay (s)	36.7		2.7			5.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	26	0	0	7	0	0	0	0	0	0	0
Future Volume (vph)	0	26	0	0	7	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	26	0	0	7	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	26	7	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	4.0	4.0	4.0
Degree Utilization, x	0.03	0.01	0.00	0.00
Capacity (veh/h)	906	903	900	900
Control Delay (s)	7.1	7.0	7.0	7.0
Approach Delay (s)	7.1	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
14: Street JJ & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	26	0	0	7	0	0	0	0	0	0	0
Future Volume (vph)	0	26	0	0	7	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	26	0	0	7	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	26	7	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	4.0	4.0	4.0
Degree Utilization, x	0.03	0.01	0.00	0.00
Capacity (veh/h)	906	903	900	900
Control Delay (s)	7.1	7.0	7.0	7.0
Approach Delay (s)	7.1	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
15: Street I & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	26	0	0	7	0	0	0	0	0	0	0
Future Volume (vph)	0	26	0	0	7	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	26	0	0	7	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	26	7	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	4.0	4.0	4.0
Degree Utilization, x	0.03	0.01	0.00	0.00
Capacity (veh/h)	906	903	900	900
Control Delay (s)	7.1	7.0	7.0	7.0
Approach Delay (s)	7.1	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
18: Humber Station Rd & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt					0.959							
Flt Protected											0.994	
Satd. Flow (prot)	0	1883	0	0	1806	0	0	1883	0	0	1872	0
Flt Permitted											0.994	
Satd. Flow (perm)	0	1883	0	0	1806	0	0	1883	0	0	1872	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			360.1			173.8	
Travel Time (s)		29.2			9.5			25.9			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	26	0	0	7	3	0	30	0	11	87	0
Future Volume (vph)	0	26	0	0	7	3	0	30	0	11	87	0
Peak Hour 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
Hourly flow rate (vph)	0	26	0	0	7	3	0	30	0	11	87	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	26	10	30	98
Volume Left (vph)	0	0	0	11
Volume Right (vph)	0	3	0	0
Hadj (s)	0.03	-0.15	0.03	0.06
Departure Headway (s)	4.2	4.1	4.1	4.1
Degree Utilization, x	0.03	0.01	0.03	0.11
Capacity (veh/h)	824	855	853	873
Control Delay (s)	7.4	7.1	7.3	7.6
Approach Delay (s)	7.4	7.1	7.3	7.6
Approach LOS	A	A	A	A

Intersection Summary					
Delay	7.4				
Level of Service	A				
Intersection Capacity Utilization	31.2%	ICU Level of Service	A		
Analysis Period (min)	15				

Lanes and Geometrics
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt									0.850			
Flt Protected					0.950							
Satd. Flow (prot)	0	1883	0	0	1789	0	1883	1883	1601	1883	1883	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1883	0	0	1426	0	1883	1883	1601	1883	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									296			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.8			209.7			154.4			360.1	
Travel Time (s)		9.3			15.1			11.1			25.9	

Intersection Summary	
Area Type:	Other

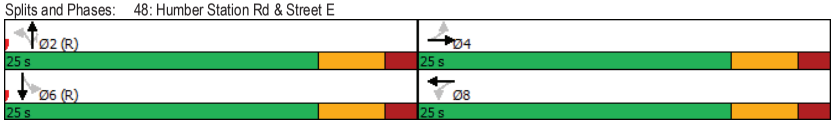
Timings
48: Humber Station Rd & Street E

05-16-2023

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	40	0	30	296	87	
Future Volume (vph)	40	0	30	296	87	
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		8	2		6	4
Permitted Phases	8			2		
Detector Phase	8	8	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		19.0	19.0	19.0	19.0	
Actuated g/C Ratio		0.38	0.38	0.38	0.38	
v/c Ratio		0.07	0.04	0.37	0.12	
Control Delay		10.4	10.1	3.3	10.7	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		10.4	10.1	3.3	10.7	
LOS		B	B	A	B	
Approach Delay		10.4	3.9		10.7	
Approach LOS		B	A		B	

Intersection Summary		
Cycle Length: 50		
Actuated Cycle Length: 50		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Pretimed		
Maximum v/c Ratio: 0.37		
Intersection Signal Delay: 5.8	Intersection LOS: A	
Intersection Capacity Utilization 23.3%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 48: Humber Station Rd & Street E



Queues
48: Humber Station Rd & Street E

05-16-2023

Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	40	30	296	87
v/c Ratio	0.07	0.04	0.37	0.12
Control Delay	10.4	10.1	3.3	10.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.4	10.1	3.3	10.7
Queue Length 50th (m)	2.3	1.7	0.0	5.0
Queue Length 95th (m)	6.9	5.5	11.6	11.9
Internal Link Dist (m)	185.7	130.4		336.1
Turn Bay Length (m)				
Base Capacity (vph)	541	715	791	715
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	0.07	0.04	0.37	0.12

Intersection Summary

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	40	0	0	0	30	296	0	87	0
Future Volume (vph)	0	0	0	40	0	0	0	30	296	0	87	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0	6.0		6.0	
Lane Util. Factor					1.00			1.00	1.00		1.00	
Frt					1.00			1.00	0.85		1.00	
Flt Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1789			1883	1601		1883	
Flt Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1426			1883	1601		1883	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	40	0	0	0	30	296	0	87	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	184	0	0	0
Lane Group Flow (vph)	0	0	0	0	40	0	0	30	112	0	87	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)					19.0			19.0	19.0		19.0	
Effective Green, g (s)					19.0			19.0	19.0		19.0	
Actuated g/C Ratio					0.38			0.38	0.38		0.38	
Clearance Time (s)					6.0			6.0	6.0		6.0	
Lane Grp Cap (vph)					541			715	608		715	
v/s Ratio Prot								0.02			0.05	
v/s Ratio Perm					c0.03				c0.07			
v/c Ratio					0.07			0.04	0.18		0.12	
Uniform Delay, d1					9.9			9.8	10.3		10.1	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					0.3			0.1	0.7		0.3	
Delay (s)					10.2			9.9	11.0		10.4	
Level of Service					B			A	B		B	
Approach Delay (s)		0.0			10.2			10.9			10.4	
Approach LOS		A			B			B			B	

Intersection Summary					
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.13				
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0		
Intersection Capacity Utilization	23.3%	ICU Level of Service	A		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93	0.86		0.88		0.92		0.99		0.95	1.00	
Frt		0.850				0.850		0.976			0.998	
Flt Protected	0.950			0.950						0.950		
Satd. Flow (prot)	1789	1383	0	1789	1883	1601	1883	1814	0	1789	1877	0
Flt Permitted	0.757			0.757						0.607		
Satd. Flow (perm)	1324	1383	0	1257	1883	1470	1883	1814	0	1088	1877	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		645				460		14			1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			154.4	
Travel Time (s)		5.9			58.6			14.0			11.1	

Intersection Summary	
Area Type:	Other

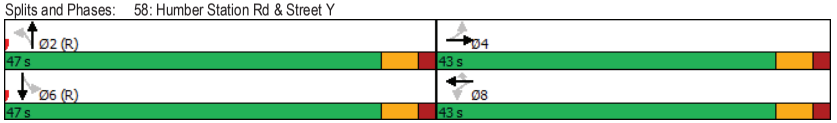
Timings
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	WBL	WBR	NBT	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	2	0	118	118	205	39	87
Future Volume (vph)	2	0	118	118	205	39	87
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4			2		6
Permitted Phases	4		8	8		6	
Detector Phase	4	4	8	8	2	6	6
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	43.0	43.0	43.0	43.0	47.0	47.0	47.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	52.2%	52.2%	52.2%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	13.8	13.8	13.8	13.8	64.2	64.2	64.2
Actuated g/C Ratio	0.15	0.15	0.15	0.15	0.71	0.71	0.71
v/c Ratio	0.01	0.00	0.61	0.19	0.19	0.05	0.07
Control Delay	29.0	0.0	48.2	0.7	5.1	5.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.0	48.2	0.7	5.1	5.2	4.9
LOS	C	A	D	A	A	A	A
Approach Delay		14.5			5.1		5.0
Approach LOS		B			A		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.61		
Intersection Signal Delay: 12.6	Intersection LOS: B	
Intersection Capacity Utilization 50.3%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y



Queues
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	2	2	118	118	244	39	88
v/c Ratio	0.01	0.00	0.61	0.19	0.19	0.05	0.07
Control Delay	29.0	0.0	48.2	0.7	5.1	5.2	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.0	48.2	0.7	5.1	5.2	4.9
Queue Length 50th (m)	0.3	0.0	20.0	0.0	11.5	1.8	4.0
Queue Length 95th (m)	2.1	0.0	35.0	0.0	24.9	5.9	10.3
Internal Link Dist (m)		57.8			170.3		130.4
Turn Bay Length (m)	45.0		25.0	25.0		50.0	
Base Capacity (vph)	544	948	516	875	1298	775	1338
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	0.00	0.23	0.13	0.19	0.05	0.07

Intersection Summary

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	2	118	0	118	0	205	39	39	87	1
Future Volume (vph)	2	0	2	118	0	118	0	205	39	39	87	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00		1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.86		1.00		0.92		0.99		1.00	1.00	
Flpb, ped/bikes	0.93	1.00		0.88		1.00		1.00		0.95	1.00	
Frt	1.00	0.85		1.00		0.85		0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1662	1383		1578		1470		1814		1699	1877	
Flt Permitted	0.76	1.00		0.76		1.00		1.00		0.61	1.00	
Satd. Flow (perm)	1325	1383		1257		1470		1814		1086	1877	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	2	0	2	118	0	118	0	205	39	39	87	1
RTOR Reduction (vph)	0	2	0	0	0	100	0	4	0	0	0	0
Lane Group Flow (vph)	2	0	0	118	0	18	0	240	0	39	88	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm		Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	13.8	13.8		13.8		13.8		64.2		64.2	64.2	
Effective Green, g (s)	13.8	13.8		13.8		13.8		64.2		64.2	64.2	
Actuated g/C Ratio	0.15	0.15		0.15		0.15		0.71		0.71	0.71	
Clearance Time (s)	6.0	6.0		6.0		6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	203	212		192		225		1293		774	1338	
v/s Ratio Prot		0.00						c0.13			0.05	
v/s Ratio Perm	0.00			c0.09		0.01				0.04		
v/c Ratio	0.01	0.00		0.61		0.08		0.19		0.05	0.07	
Uniform Delay, d1	32.3	32.3		35.6		32.7		4.3		3.8	3.9	
Progression Factor	1.00	1.00		1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		5.7		0.2		0.3		0.1	0.1	
Delay (s)	32.3	32.3		41.3		32.8		4.6		4.0	4.0	
Level of Service	C	C		D		C		A		A	A	
Approach Delay (s)		32.3			37.1			4.6			4.0	
Approach LOS		C			D			A			A	

Intersection Summary					
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.26				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	50.3%	ICU Level of Service		A	
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
62: Street Y & Street VV

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1883	1883	0	1883	0
Flt Permitted						
Satd. Flow (perm)	0	1883	1883	0	1883	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	5	1	0	0	0
Future Volume (vph)	0	5	1	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	5	1	0	0	0

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	5	1	0
Volume Left (vph)	0	0	0
Volume Right (vph)	0	0	0
Hadj (s)	0.03	0.03	0.00
Departure Headway (s)	3.9	3.9	3.9
Degree Utilization, x	0.01	0.00	0.00
Capacity (veh/h)	908	908	914
Control Delay (s)	7.0	6.9	6.9
Approach Delay (s)	7.0	6.9	0.0
Approach LOS	A	A	A

Intersection Summary				
Delay		7.0		
Level of Service		A		
Intersection Capacity Utilization		29.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
64: Street JJ & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	1	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	1	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	1	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	1	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	3.9	3.9	3.9
Degree Utilization, x	0.01	0.00	0.00	0.00
Capacity (veh/h)	908	908	914	914
Control Delay (s)	7.0	6.9	6.9	6.9
Approach Delay (s)	7.0	6.9	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
65: Street I & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	1	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	1	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	1	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	1	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	3.9	3.9	3.9
Degree Utilization, x	0.01	0.00	0.00	0.00
Capacity (veh/h)	908	908	914	914
Control Delay (s)	7.0	6.9	6.9	6.9
Approach Delay (s)	7.0	6.9	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	NBT	SBT	Ø4
Lane Configurations			
Traffic Volume (vph)	263	133	
Future Volume (vph)	263	133	
Turn Type	NA	NA	
Protected Phases	2	6	4
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	65.0	65.0	25.0
Total Split (%)	72.2%	72.2%	28%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
Act Effct Green (s)	77.6	77.6	
Actuated g/C Ratio	0.86	0.86	
v/c Ratio	0.16	0.08	
Control Delay	3.8	4.5	
Queue Delay	0.0	0.0	
Total Delay	3.8	4.5	
LOS	A	A	
Approach Delay	3.8	4.5	
Approach LOS	A	A	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.16		
Intersection Signal Delay: 4.0		Intersection LOS: A
Intersection Capacity Utilization 20.8%		ICU Level of Service A
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	NBT	SBT
Lane Group Flow (vph)	263	133
v/c Ratio	0.16	0.08
Control Delay	3.8	4.5
Queue Delay	0.0	0.0
Total Delay	3.8	4.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	26.9	19.2
Internal Link Dist (m)	323.2	104.1
Turn Bay Length (m)		
Base Capacity (vph)	1623	1623
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.16	0.08

Intersection Summary

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-16-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	263	133	0
Future Volume (vph)	0	0	0	263	133	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				1.00	1.00	
Frpb, ped/bikes				1.00	1.00	
Flpb, ped/bikes				1.00	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	1.00	
Satd. Flow (prot)				1883	1883	
Flt Permitted				1.00	1.00	
Satd. Flow (perm)				1883	1883	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	263	133	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	263	133	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)				70.4	70.4	
Effective Green, g (s)				70.4	70.4	
Actuated g/C Ratio				0.78	0.78	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1472	1472	
v/s Ratio Prot				c0.14	0.07	
v/s Ratio Perm						
v/c Ratio				0.18	0.09	
Uniform Delay, d1				2.5	2.3	
Progression Factor				1.00	1.25	
Incremental Delay, d2				0.3	0.1	
Delay (s)				2.7	3.0	
Level of Service				A	A	
Approach Delay (s)	0.0			2.7	3.0	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio	0.16			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	20.8%	ICU Level of Service	A	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99		0.95	0.98		0.92	0.99			0.96	
Frt		0.994			0.975			0.989			0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1730	0	1681	1715	0	1261	1862	0	1681	1781	0
Flt Permitted	0.227			0.415			0.520			0.137		
Satd. Flow (perm)	373	1730	0	698	1715	0	634	1862	0	242	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			11			3			15	
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

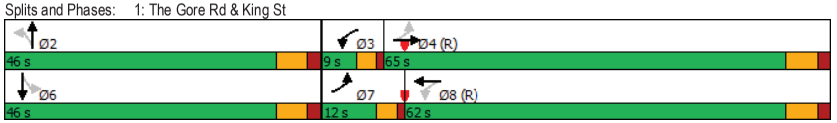
Timings
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	148	442	51	515	57	465	38	171
Future Volume (vph)	148	442	51	515	57	465	38	171
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6
Minimum Split (s)	11.0	30.6	9.0	30.6	30.6	30.6	30.6	30.6
Total Split (s)	12.0	65.0	9.0	62.0	46.0	46.0	46.0	46.0
Total Split (%)	10.0%	54.2%	7.5%	51.7%	38.3%	38.3%	38.3%	38.3%
Yellow Time (s)	3.0	4.6	3.0	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	72.5	62.8	66.5	58.2	36.1	36.1	36.1	36.1
Actuated g/C Ratio	0.60	0.52	0.55	0.48	0.30	0.30	0.30	0.30
v/c Ratio	0.48	0.51	0.12	0.74	0.30	0.89	0.53	0.42
Control Delay	16.4	22.5	11.5	31.9	35.5	58.6	61.3	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	22.5	11.5	31.9	35.5	58.6	61.3	33.0
LOS	B	C	B	C	D	E	E	C
Approach Delay		21.0		30.3		56.2		37.0
Approach LOS		C		C		E		D

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
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: 0.89		
Intersection Signal Delay: 35.3	Intersection LOS: D	
Intersection Capacity Utilization 103.8%	ICU Level of Service G	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	462	51	616	57	501	38	229
v/c Ratio	0.48	0.51	0.12	0.74	0.30	0.89	0.53	0.42
Control Delay	16.4	22.5	11.5	31.9	35.5	58.6	61.3	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.4	22.5	11.5	31.9	35.5	58.6	61.3	33.0
Queue Length 50th (m)	15.2	76.9	4.9	123.1	10.5	113.9	7.6	40.9
Queue Length 95th (m)	26.4	108.7	10.7	171.1	22.5	#165.8	#23.1	62.9
Internal Link Dist (m)		339.2		183.4		604.6		554.8
Turn Bay Length (m)			139.9		199.9		175.0	
Base Capacity (vph)	311	913	434	844	210	618	80	599
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	0.48	0.51	0.12	0.73	0.27	0.81	0.47	0.38

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	442	20	51	515	101	57	465	36	38	171	58
Future Volume (vph)	148	442	20	51	515	101	57	465	36	38	171	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	4.0	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.96	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		0.92	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1562	1729		1647	1715		1159	1862		1681	1781	
Flt Permitted	0.23	1.00		0.42	1.00		0.52	1.00		0.14	1.00	
Satd. Flow (perm)	373	1729		719	1715		634	1862		243	1781	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	148	442	20	51	515	101	57	465	36	38	171	58
RTOR Reduction (vph)	0	1	0	0	6	0	0	2	0	0	10	0
Lane Group Flow (vph)	148	461	0	51	610	0	57	499	0	38	219	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	70.5	62.0		62.9	58.2		36.1	36.1		36.1	36.1	
Effective Green, g (s)	70.5	62.0		62.9	58.2		36.1	36.1		36.1	36.1	
Actuated g/C Ratio	0.59	0.52		0.52	0.49		0.30	0.30		0.30	0.30	
Clearance Time (s)	4.0	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	303	893		413	831		190	560		73	535	
v/s Ratio Prot	c0.03	0.27		0.00	c0.36			c0.27			0.12	
v/s Ratio Perm	0.25			0.06			0.09			0.16		
v/c Ratio	0.49	0.52		0.12	0.73		0.30	0.89		0.52	0.41	
Uniform Delay, d1	15.8	19.1		14.4	24.7		32.2	40.1		34.8	33.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	2.1		0.1	5.7		0.9	16.2		6.5	0.5	
Delay (s)	17.1	21.2		14.6	30.4		33.1	56.3		41.3	33.9	
Level of Service	B	C		B	C		C	E		D	C	
Approach Delay (s)		20.2			29.2			53.9			35.0	
Approach LOS		C			C			D			C	

Intersection Summary

HCM 2000 Control Delay	33.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			0.99			0.94			0.95	
Frt		0.994			0.988			0.963			0.963	
Flt Protected		0.998			0.998			0.986			0.997	
Satd. Flow (prot)	0	1745	0	0	1789	0	0	1301	0	0	1557	0
Flt Permitted		0.975			0.976			0.755			0.969	
Satd. Flow (perm)	0	1702	0	0	1747	0	0	970	0	0	1505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			6			16			17	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

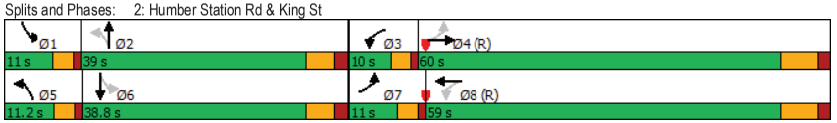
Timings
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	18	533	18	518	71	111	14	138
Future Volume (vph)	18	533	18	518	71	111	14	138
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	10.0	31.4	11.2	30.2	11.0	30.2
Total Split (s)	11.0	60.0	10.0	59.0	11.2	39.0	11.0	38.8
Total Split (%)	9.2%	50.0%	8.3%	49.2%	9.3%	32.5%	9.2%	32.3%
Yellow Time (s)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.2	1.0	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		7.4		7.4		6.2		6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)		75.4		75.4		31.0		31.0
Actuated g/C Ratio		0.63		0.63		0.26		0.26
v/c Ratio		0.54		0.54		0.95		0.52
Control Delay		16.6		16.4		84.5		38.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		16.6		16.4		84.5		38.1
LOS		B		B		F		D
Approach Delay		16.6		16.4		84.5		38.1
Approach LOS		B		B		F		D

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 85		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.95		
Intersection Signal Delay: 29.8	Intersection LOS: C	
Intersection Capacity Utilization 86.4%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	575	590	250	210
v/c Ratio	0.54	0.54	0.95	0.52
Control Delay	16.6	16.4	84.5	38.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	16.6	16.4	84.5	38.1
Queue Length 50th (m)	73.7	75.1	57.0	40.5
Queue Length 95th (m)	135.0	136.9	82.5	56.7
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1069	1099	297	454
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	0.54	0.54	0.84	0.46

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	533	24	18	518	54	71	111	68	14	138	58
Future Volume (vph)	18	533	24	18	518	54	71	111	68	14	138	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)		7.4			7.4			6.2			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.99			0.99			0.96			0.96	
Flpb, ped/bikes		1.00			1.00			0.98			1.00	
Frt		0.99			0.99			0.96			0.96	
Flt Protected		1.00			1.00			0.99			1.00	
Satd. Flow (prot)		1744			1787			1274			1549	
Flt Permitted		0.97			0.98			0.76			0.97	
Satd. Flow (perm)		1703			1746			976			1507	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	18	533	24	18	518	54	71	111	68	14	138	58
RTOR Reduction (vph)	0	1	0	0	2	0	0	12	0	0	13	0
Lane Group Flow (vph)	0	574	0	0	588	0	0	238	0	0	197	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		75.4			75.4			31.0			31.0	
Effective Green, g (s)		75.4			75.4			31.0			31.0	
Actuated g/C Ratio		0.63			0.63			0.26			0.26	
Clearance Time (s)		7.4			7.4			6.2			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1070			1097			252			389	
v/s Ratio Prot												
v/s Ratio Perm		c0.34			0.34			c0.24			0.13	
v/c Ratio		0.54			0.54			0.94			0.51	
Uniform Delay, d1		12.5			12.5			43.7			38.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			0.5			41.5			1.0	
Delay (s)		13.0			13.0			85.1			39.0	
Level of Service		B			B			F			D	
Approach Delay (s)		13.0			13.0			85.1			39.0	
Approach LOS		B			B			F			D	

Intersection Summary					
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.71				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6		
Intersection Capacity Utilization	86.4%	ICU Level of Service	E		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		1.00			
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1883	0	1821	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1606	0	1883	0	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	5	827	305
Future Volume (vph)	5	827	305
Turn Type	Prot	NA	NA
Protected Phases	8	2	6
Permitted Phases			
Detector Phase	8	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Min	C-Min
Act Effct Green (s)	12.1	76.4	76.4
Actuated g/C Ratio	0.13	0.85	0.85
v/c Ratio	0.02	0.52	0.19
Control Delay	27.8	7.8	4.5
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.8	4.5
LOS	C	A	A
Approach Delay	27.8	7.8	4.5
Approach LOS	C	A	A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.52		
Intersection Signal Delay: 7.0	Intersection LOS: A	
Intersection Capacity Utilization 69.2%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBT
Lane Group Flow (vph)	5	828	305
v/c Ratio	0.02	0.52	0.19
Control Delay	27.8	7.8	4.5
Queue Delay	0.0	0.0	0.0
Total Delay	27.8	7.8	4.5
Queue Length 50th (m)	0.9	0.0	0.1
Queue Length 95th (m)	3.4	135.2	33.7
Internal Link Dist (m)	110.7	554.8	187.4
Turn Bay Length (m)			
Base Capacity (vph)	437	1598	1598
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.52	0.19

Intersection Summary

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	0	827	1	0	305
Future Volume (vph)	5	0	827	1	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0			6.0
Lane Util. Factor	1.00		1.00			1.00
Frpb, ped/bikes	1.00		1.00			1.00
Flpb, ped/bikes	1.00		1.00			1.00
Frt	1.00		1.00			1.00
Flt Protected	0.95		1.00			1.00
Satd. Flow (prot)	1789		1883			1883
Flt Permitted	0.95		1.00			1.00
Satd. Flow (perm)	1789		1883			1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	0	827	1	0	305
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	5	0	828	0	0	305
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	8.8		69.2			69.2
Effective Green, g (s)	8.8		69.2			69.2
Actuated g/C Ratio	0.10		0.77			0.77
Clearance Time (s)	6.0		6.0			6.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	174		1447			1447
v/s Ratio Prot	c0.00		c0.44			0.16
v/s Ratio Perm						
v/c Ratio	0.03		0.57			0.21
Uniform Delay, d1	36.7		4.3			2.9
Progression Factor	1.00		1.00			0.96
Incremental Delay, d2	0.1		1.6			0.3
Delay (s)	36.8		5.9			3.1
Level of Service	D		A			A
Approach Delay (s)	36.8		5.9			3.1
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88					
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1433	0	1883	0	1730	1883
Flt Permitted					0.289	
Satd. Flow (perm)	1433	0	1883	0	526	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	154					
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	0	827	5	305
Future Volume (vph)	0	827	5	305
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	12.1	72.9	72.9	72.9
Actuated g/C Ratio	0.13	0.81	0.81	0.81
v/c Ratio	0.08	0.54	0.01	0.20
Control Delay	0.4	10.3	6.2	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	10.3	6.2	5.1
LOS	A	B	A	A
Approach Delay	0.4	10.3		5.1
Approach LOS	A	B		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.54		
Intersection Signal Delay: 8.7	Intersection LOS: A	
Intersection Capacity Utilization 69.4%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	827	5	305
v/c Ratio	0.08	0.54	0.01	0.20
Control Delay	0.4	10.3	6.2	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	10.3	6.2	5.1
Queue Length 50th (m)	0.0	37.3	0.1	9.2
Queue Length 95th (m)	0.0	114.8	1.6	35.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	466	1525	426	1525
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	0.05	0.54	0.01	0.20

Intersection Summary

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	25	827	0	5	305
Future Volume (vph)	0	25	827	0	5	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.88		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.97	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1433		1883		1685	1883
Flt Permitted	1.00		1.00		0.29	1.00
Satd. Flow (perm)	1433		1883		512	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	25	827	0	5	305
RTOR Reduction (vph)	22	0	0	0	0	0
Lane Group Flow (vph)	3	0	827	0	5	305
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	9.9		68.1		68.1	68.1
Effective Green, g (s)	9.9		68.1		68.1	68.1
Actuated g/C Ratio	0.11		0.76		0.76	0.76
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	157		1424		387	1424
v/s Ratio Prot	c0.00		c0.44			0.16
v/s Ratio Perm					0.01	
v/c Ratio	0.02		0.58		0.01	0.21
Uniform Delay, d1	35.7		4.8		2.7	3.2
Progression Factor	1.00		1.27		1.00	1.00
Incremental Delay, d2	0.0		1.5		0.1	0.3
Delay (s)	35.8		7.5		2.8	3.5
Level of Service	D		A		A	A
Approach Delay (s)	35.8		7.5			3.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	25	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	3.9	4.0	4.0
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	902	909	900	900
Control Delay (s)	7.0	7.0	7.0	7.0
Approach Delay (s)	7.0	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.0		
Level of Service		A		
Intersection Capacity Utilization		29.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
14: Street JJ & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	25	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	3.9	4.0	4.0
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	902	909	900	900
Control Delay (s)	7.0	7.0	7.0	7.0
Approach Delay (s)	7.0	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.0		
Level of Service		A		
Intersection Capacity Utilization		29.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
15: Street I & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	25	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	3.9	4.0	4.0
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	902	909	900	900
Control Delay (s)	7.0	7.0	7.0	7.0
Approach Delay (s)	7.0	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
18: Humber Station Rd & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt					0.961							
Flt Protected											0.998	
Satd. Flow (prot)	0	1883	0	0	1810	0	0	1883	0	0	1880	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	1883	0	0	1810	0	0	1883	0	0	1880	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			360.1			173.8	
Travel Time (s)		29.2			9.5			25.9			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	10	0	131	0	2	44	0
Future Volume (vph)	0	5	0	0	25	10	0	131	0	2	44	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	10	0	131	0	2	44	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	35	131	46
Volume Left (vph)	0	0	0	2
Volume Right (vph)	0	10	0	0
Hadj (s)	0.03	-0.14	0.03	0.04
Departure Headway (s)	4.4	4.1	4.1	4.2
Degree Utilization, x	0.01	0.04	0.15	0.05
Capacity (veh/h)	788	828	865	849
Control Delay (s)	7.4	7.3	7.8	7.4
Approach Delay (s)	7.4	7.3	7.8	7.4
Approach LOS	A	A	A	A

Intersection Summary					
Delay		7.6			
Level of Service		A			
Intersection Capacity Utilization		29.7%	ICU Level of Service		A
Analysis Period (min)		15			

Lanes and Geometrics
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt									0.850			
Flt Protected					0.950							
Satd. Flow (prot)	0	1883	0	0	1789	0	1883	1883	1601	1883	1883	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1883	0	0	1426	0	1883	1883	1601	1883	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									66			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.8			209.7			154.4			360.1	
Travel Time (s)		9.3			15.1			11.1			25.9	

Intersection Summary	
Area Type:	Other

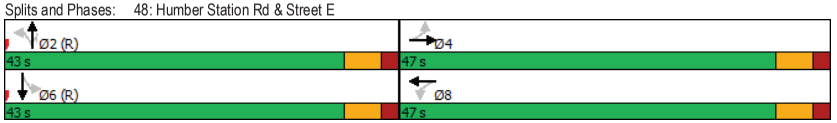
Timings
48: Humber Station Rd & Street E

05-16-2023

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	145	0	131	66	44	
Future Volume (vph)	145	0	131	66	44	
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		8	2		6	4
Permitted Phases	8			2		
Detector Phase	8	8	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	47.0	47.0	43.0	43.0	43.0	47.0
Total Split (%)	52.2%	52.2%	47.8%	47.8%	47.8%	52%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)		14.7	63.3	63.3	63.3	
Actuated g/C Ratio		0.16	0.70	0.70	0.70	
v/c Ratio		0.62	0.10	0.06	0.03	
Control Delay		46.0	6.9	3.5	5.3	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		46.0	6.9	3.5	5.3	
LOS		D	A	A	A	
Approach Delay		46.0	5.7		5.3	
Approach LOS		D	A		A	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.62		
Intersection Signal Delay: 20.8	Intersection LOS: C	
Intersection Capacity Utilization 24.9%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 48: Humber Station Rd & Street E



Queues
48: Humber Station Rd & Street E

05-16-2023

Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	145	131	66	44
v/c Ratio	0.62	0.10	0.06	0.03
Control Delay	46.0	6.9	3.5	5.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.0	6.9	3.5	5.3
Queue Length 50th (m)	24.6	6.4	0.0	2.1
Queue Length 95th (m)	40.4	18.1	5.9	6.5
Internal Link Dist (m)	185.7	130.4		336.1
Turn Bay Length (m)				
Base Capacity (vph)	649	1324	1145	1324
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	0.22	0.10	0.06	0.03

Intersection Summary

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	145	0	0	0	131	66	0	44	0
Future Volume (vph)	0	0	0	145	0	0	0	131	66	0	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0	6.0		6.0	
Lane Util. Factor					1.00			1.00	1.00		1.00	
Frt					1.00			1.00	0.85		1.00	
Flt Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1789			1883	1601		1883	
Flt Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1426			1883	1601		1883	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	145	0	0	0	131	66	0	44	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	20	0	0	0
Lane Group Flow (vph)	0	0	0	0	145	0	0	131	46	0	44	0
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)					14.7			63.3	63.3		63.3	
Effective Green, g (s)					14.7			63.3	63.3		63.3	
Actuated g/C Ratio					0.16			0.70	0.70		0.70	
Clearance Time (s)					6.0			6.0	6.0		6.0	
Vehicle Extension (s)					3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)					232			1324	1126		1324	
v/s Ratio Prot								c0.07			0.02	
v/s Ratio Perm					c0.10				0.03			
v/c Ratio					0.62			0.10	0.04		0.03	
Uniform Delay, d1					35.1			4.3	4.1		4.1	
Progression Factor					1.00			1.30	2.02		1.00	
Incremental Delay, d2					5.2			0.1	0.1		0.0	
Delay (s)					40.3			5.7	8.3		4.1	
Level of Service					D			A	A		A	
Approach Delay (s)		0.0			40.3			6.6			4.1	
Approach LOS		A			D			A			A	

Intersection Summary				
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.20			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	24.9%	ICU Level of Service	A	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.88		0.92		0.96		0.95	0.99	
Frt						0.850		0.929			0.984	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	1883	1883	0	1789	1883	1601	1883	1682	0	1789	1826	0
Flt Permitted				0.757						0.579		
Satd. Flow (perm)	1883	1883	0	1257	1883	1470	1883	1682	0	1041	1826	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						618		85			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			154.4	
Travel Time (s)		5.9			58.6			14.0			11.1	

Intersection Summary	
Area Type:	Other

Timings
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	26	26	156	140	41	
Future Volume (vph)	26	26	156	140	41	
Turn Type	Perm	Perm	NA	Perm	NA	
Protected Phases			2		6	4
Permitted Phases	8	8		6		
Detector Phase	8	8	2	6	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	32.0	32.0	58.0	58.0	58.0	32.0
Total Split (%)	35.6%	35.6%	64.4%	64.4%	64.4%	36%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)	11.4	11.4	73.7	73.7	73.7	
Actuated g/C Ratio	0.13	0.13	0.82	0.82	0.82	
v/c Ratio	0.16	0.04	0.21	0.16	0.03	
Control Delay	33.8	0.1	3.4	17.4	14.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	33.8	0.1	3.4	17.4	14.9	
LOS	C	A	A	B	B	
Approach Delay			3.4		16.8	
Approach LOS			A		B	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.21		
Intersection Signal Delay: 9.4	Intersection LOS: A	
Intersection Capacity Utilization 55.8%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y

Queues
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	26	26	296	140	46
v/c Ratio	0.16	0.04	0.21	0.16	0.03
Control Delay	33.8	0.1	3.4	17.4	14.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	0.1	3.4	17.4	14.9
Queue Length 50th (m)	4.5	0.0	7.1	23.2	6.5
Queue Length 95th (m)	10.7	0.0	23.1	41.7	15.4
Internal Link Dist (m)			170.3		130.4
Turn Bay Length (m)	25.0	25.0		50.0	
Base Capacity (vph)	363	864	1393	853	1497
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	0.07	0.03	0.21	0.16	0.03

Intersection Summary

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	26	0	26	0	156	140	140	41	5
Future Volume (vph)	0	0	0	26	0	26	0	156	140	140	41	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0		6.0		6.0		6.0	6.0	
Lane Util. Factor				1.00		1.00		1.00		1.00	1.00	
Frpb, ped/bikes				1.00		0.92		0.96		1.00	0.99	
Flpb, ped/bikes				0.88		1.00		1.00		0.95	1.00	
Frt				1.00		0.85		0.93		1.00	0.98	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1577		1470		1682		1705	1825	
Flt Permitted				0.76		1.00		1.00		0.58	1.00	
Satd. Flow (perm)				1257		1470		1682		1039	1825	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	26	0	26	0	156	140	140	41	5
RTOR Reduction (vph)	0	0	0	0	0	23	0	20	0	0	1	0
Lane Group Flow (vph)	0	0	0	26	0	3	0	276	0	140	45	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm			Perm		Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				9.1		9.1		68.9		68.9	68.9	
Effective Green, g (s)				9.1		9.1		68.9		68.9	68.9	
Actuated g/C Ratio				0.10		0.10		0.77		0.77	0.77	
Clearance Time (s)				6.0		6.0		6.0		6.0	6.0	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				127		148		1287		795	1397	
v/s Ratio Prot								c0.16			0.02	
v/s Ratio Perm				c0.02		0.00				0.13		
v/c Ratio				0.20		0.02		0.21		0.18	0.03	
Uniform Delay, d1				37.1		36.4		3.0		2.9	2.5	
Progression Factor				1.00		1.00		0.98		3.82	3.62	
Incremental Delay, d2				0.8		0.0		0.4		0.5	0.0	
Delay (s)				37.9		36.5		3.3		11.4	9.2	
Level of Service				D		D		A		B	A	
Approach Delay (s)		0.0			37.2			3.3			10.9	
Approach LOS		A			D			A			B	

Intersection Summary					
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A		
HCM 2000 Volume to Capacity ratio	0.21				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
62: Street Y & Street VV

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1883	1883	0	1883	0
Flt Permitted						
Satd. Flow (perm)	0	1883	1883	0	1883	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	1	5	0	0	0
Future Volume (vph)	0	1	5	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	5	0	0	0

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	1	5	0
Volume Left (vph)	0	0	0
Volume Right (vph)	0	0	0
Hadj (s)	0.03	0.03	0.00
Departure Headway (s)	3.9	3.9	3.9
Degree Utilization, x	0.00	0.01	0.00
Capacity (veh/h)	907	909	914
Control Delay (s)	6.9	7.0	6.9
Approach Delay (s)	6.9	7.0	0.0
Approach LOS	A	A	A

Intersection Summary				
Delay		7.0		
Level of Service		A		
Intersection Capacity Utilization		29.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
64: Street JJ & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Future Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	1	0	0	5	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1	5	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	3.9	3.9	3.9
Degree Utilization, x	0.00	0.01	0.00	0.00
Capacity (veh/h)	907	909	914	914
Control Delay (s)	6.9	7.0	6.9	6.9
Approach Delay (s)	6.9	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary					
Delay		7.0			
Level of Service		A			
Intersection Capacity Utilization		6.7%	ICU Level of Service		A
Analysis Period (min)		15			

Lanes and Geometrics
65: Street I & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Future Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	1	0	0	5	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1	5	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	3.9	3.9	3.9
Degree Utilization, x	0.00	0.01	0.00	0.00
Capacity (veh/h)	907	909	914	914
Control Delay (s)	6.9	7.0	6.9	6.9
Approach Delay (s)	6.9	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	NBT	SBT	Ø4
Lane Configurations			
Traffic Volume (vph)	183	211	
Future Volume (vph)	183	211	
Turn Type	NA	NA	
Protected Phases	2	6	4
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	65.0	65.0	25.0
Total Split (%)	72.2%	72.2%	28%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
Act Effct Green (s)	77.6	77.6	
Actuated g/C Ratio	0.86	0.86	
v/c Ratio	0.11	0.13	
Control Delay	3.7	3.5	
Queue Delay	0.0	0.0	
Total Delay	3.7	3.5	
LOS	A	A	
Approach Delay	3.7	3.5	
Approach LOS	A	A	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.13		
Intersection Signal Delay: 3.6		Intersection LOS: A
Intersection Capacity Utilization 20.8%		ICU Level of Service A
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	NBT	SBT
Lane Group Flow (vph)	183	211
v/c Ratio	0.11	0.13
Control Delay	3.7	3.5
Queue Delay	0.0	0.0
Total Delay	3.7	3.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	19.0	21.9
Internal Link Dist (m)	323.2	104.1
Turn Bay Length (m)		
Base Capacity (vph)	1623	1623
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.11	0.13

Intersection Summary

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-16-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	183	211	0
Future Volume (vph)	0	0	0	183	211	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				1.00	1.00	
Frpb, ped/bikes				1.00	1.00	
Flpb, ped/bikes				1.00	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	1.00	
Satd. Flow (prot)				1883	1883	
Flt Permitted				1.00	1.00	
Satd. Flow (perm)				1883	1883	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	183	211	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	183	211	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)				70.4	70.4	
Effective Green, g (s)				70.4	70.4	
Actuated g/C Ratio				0.78	0.78	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				1472	1472	
v/s Ratio Prot				0.10	c0.11	
v/s Ratio Perm						
v/c Ratio				0.12	0.14	
Uniform Delay, d1				2.4	2.4	
Progression Factor				1.00	0.96	
Incremental Delay, d2				0.2	0.2	
Delay (s)				2.5	2.5	
Level of Service				A	A	
Approach Delay (s)	0.0			2.5	2.5	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.93		0.86	0.93		0.86	0.94		0.86	0.89		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1746	1585	1681	1779	1633	1261	1921	1432	1681	1921	1633
Flt Permitted	0.531			0.546			0.227			0.710		
Satd. Flow (perm)	810	1746	1359	899	1779	1400	284	1921	1228	1114	1921	1400
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			171			33			69			125
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

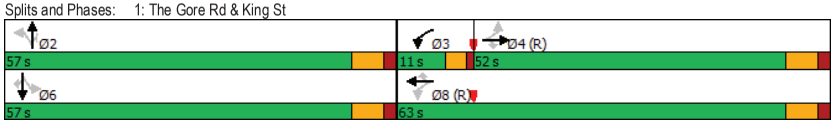
Intersection Summary	
Area Type:	Other

Timings
05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	259	171	43	390	27	11	72	24	100	377	125
Future Volume (vph)	51	259	171	43	390	27	11	72	24	100	377	125
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6	18.6	18.6
Minimum Split (s)	30.6	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Total Split (s)	52.0	52.0	52.0	11.0	63.0	63.0	57.0	57.0	57.0	57.0	57.0	57.0
Total Split (%)	43.3%	43.3%	43.3%	9.2%	52.5%	52.5%	47.5%	47.5%	47.5%	47.5%	47.5%	47.5%
Yellow Time (s)	4.6	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	68.1	68.1	68.1	79.5	76.9	76.9	29.9	29.9	29.9	29.9	29.9	29.9
Actuated g/C Ratio	0.57	0.57	0.57	0.66	0.64	0.64	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.11	0.26	0.20	0.07	0.34	0.03	0.16	0.15	0.07	0.36	0.79	0.28
Control Delay	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
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	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
LOS	B	B	A	A	B	A	D	C	A	D	D	A
Approach Delay		11.7			11.3			26.4			41.5	
Approach LOS		B			B			C			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
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: 0.79		
Intersection Signal Delay: 23.4	Intersection LOS: C	
Intersection Capacity Utilization 71.7%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	259	171	43	390	27	11	72	24	100	377	125
v/c Ratio	0.11	0.26	0.20	0.07	0.34	0.03	0.16	0.15	0.07	0.36	0.79	0.28
Control Delay	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
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	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
Queue Length 50th (m)	5.7	31.7	0.0	3.3	40.4	0.0	2.1	13.9	0.0	20.3	86.8	0.0
Queue Length 95th (m)	15.4	59.2	12.3	9.4	73.1	3.6	7.0	23.5	0.0	33.2	110.1	13.6
Internal Link Dist (m)		339.2			183.4			604.6			554.8	
Turn Bay Length (m)				139.9		25.0	199.9		50.0	175.0		50.0
Base Capacity (vph)	459	991	845	643	1140	909	119	806	555	467	806	660
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	0.11	0.26	0.20	0.07	0.34	0.03	0.09	0.09	0.04	0.21	0.47	0.19

Intersection Summary

HCM Signalized Intersection Capacity Analysis
05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	259	171	43	390	27	11	72	24	100	377	125
Future Volume (vph)	51	259	171	43	390	27	11	72	24	100	377	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	6.6	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	1.00	0.86	1.00	1.00	0.86
Flpb, ped/bikes	0.93	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00	0.89	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1448	1746	1359	1614	1779	1400	1201	1921	1228	1491	1921	1400
Flt Permitted	0.53	1.00	1.00	0.55	1.00	1.00	0.23	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	810	1746	1359	929	1779	1400	287	1921	1228	1114	1921	1400
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	259	171	43	390	27	11	72	24	100	377	125
RTOR Reduction (vph)	0	0	75	0	0	10	0	0	18	0	0	94
Lane Group Flow (vph)	51	259	96	43	390	17	11	72	6	100	377	31
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	67.3	67.3	67.3	76.9	76.9	76.9	29.9	29.9	29.9	29.9	29.9	29.9
Effective Green, g (s)	67.3	67.3	67.3	76.9	76.9	76.9	29.9	29.9	29.9	29.9	29.9	29.9
Actuated g/C Ratio	0.56	0.56	0.56	0.64	0.64	0.64	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	6.6	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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	3.0
Lane Grp Cap (vph)	454	979	762	627	1140	897	71	478	305	277	478	348
v/s Ratio Prot		0.15		0.00	c0.22			0.04			c0.20	
v/s Ratio Perm	0.06		0.07	0.04		0.01	0.04		0.00	0.09		0.02
v/c Ratio	0.11	0.26	0.13	0.07	0.34	0.02	0.15	0.15	0.02	0.36	0.79	0.09
Uniform Delay, d1	12.4	13.6	12.5	8.1	9.9	7.8	35.2	35.1	34.0	37.2	42.1	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.7	0.3	0.0	0.8	0.0	1.0	0.1	0.0	0.8	8.4	0.1
Delay (s)	12.9	14.2	12.8	8.2	10.7	7.9	36.2	35.3	34.0	38.0	50.5	34.7
Level of Service	B	B	B	A	B	A	D	D	C	D	D	C
Approach Delay (s)		13.6			10.3			35.1			45.2	
Approach LOS		B			B			D			D	

Intersection Summary				
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.48			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2	
Intersection Capacity Utilization	71.7%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96		0.88	0.94		0.88	0.91	0.93		0.90	0.99	
Frt			0.850			0.850		0.910			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1765	1762	1555	1697	1830	1633	1089	1176	0	1226	1749	0
Flt Permitted	0.470			0.470			0.711			0.738		
Satd. Flow (perm)	839	1762	1365	792	1830	1434	738	1176	0	857	1749	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			122		18			4	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

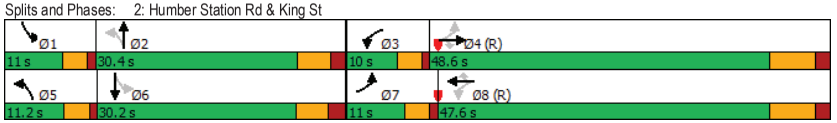
Intersection Summary	
Area Type:	Other

Timings
05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	5	347	103	73	456	12	17	12	17	59
Future Volume (vph)	5	347	103	73	456	12	17	12	17	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8		5	2	1	6
Permitted Phases	4		4	8		8	2		6	
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.0	11.0	30.2
Total Split (s)	11.0	48.6	48.6	10.0	47.6	47.6	11.2	30.4	11.0	30.2
Total Split (%)	11.0%	48.6%	48.6%	10.0%	47.6%	47.6%	11.2%	30.4%	11.0%	30.2%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	Min	None	Min
Act Effct Green (s)	62.5	54.5	54.5	66.4	61.4	61.4	23.7	18.6	23.4	18.2
Actuated g/C Ratio	0.62	0.54	0.54	0.66	0.61	0.61	0.24	0.19	0.23	0.18
v/c Ratio	0.01	0.36	0.13	0.12	0.41	0.01	0.09	0.13	0.08	0.20
Control Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5
LOS	A	B	A	A	B	A	C	B	C	C
Approach Delay		14.5			13.7			20.8		30.6
Approach LOS		B			B			C		C

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 85		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.41		
Intersection Signal Delay: 15.5	Intersection LOS: B	
Intersection Capacity Utilization 61.3%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St



Queues
05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	347	103	73	456	12	17	30	17	64
v/c Ratio	0.01	0.36	0.13	0.12	0.41	0.01	0.09	0.13	0.08	0.20
Control Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5
Queue Length 50th (m)	0.3	31.0	0.0	3.1	29.3	0.0	2.9	2.1	2.9	10.9
Queue Length 95th (m)	2.2	80.1	7.8	13.7	105.8	0.0	6.6	9.3	6.6	20.7
Internal Link Dist (m)		305.7			816.4			324.5		323.2
Turn Bay Length (m)	50.0		25.0	50.0		25.0			50.0	
Base Capacity (vph)	597	978	812	588	1124	928	200	301	227	422
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	0.01	0.35	0.13	0.12	0.41	0.01	0.09	0.10	0.07	0.15

Intersection Summary

HCM Signalized Intersection Capacity Analysis
05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	347	103	73	456	12	17	12	18	17	59	5
Future Volume (vph)	5	347	103	73	456	12	17	12	18	17	59	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0		4.0	6.2	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.88	1.00	1.00	0.88	1.00	0.93		1.00	0.99	
Flpb, ped/bikes	0.98	1.00	1.00	0.98	1.00	1.00	0.93	1.00		0.93	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1725	1762	1365	1657	1830	1434	1017	1176		1137	1750	
Flt Permitted	0.47	1.00	1.00	0.47	1.00	1.00	0.71	1.00		0.74	1.00	
Satd. Flow (perm)	853	1762	1365	821	1830	1434	762	1176		883	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	347	103	73	456	12	17	12	18	17	59	5
RTOR Reduction (vph)	0	0	50	0	0	5	0	15	0	0	3	0
Lane Group Flow (vph)	5	347	53	73	456	7	17	15	0	17	61	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2			6		
Actuated Green, G (s)	52.5	51.3	51.3	61.0	55.8	55.8	21.7	18.6		21.3	18.3	
Effective Green, g (s)	52.5	51.3	51.3	61.0	55.8	55.8	21.7	18.6		21.3	18.3	
Actuated g/C Ratio	0.52	0.51	0.51	0.61	0.56	0.56	0.22	0.19		0.21	0.18	
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0		4.0	6.2	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	458	903	700	548	1021	800	173	218		195	320	
v/s Ratio Prot	0.00	0.20		c0.01	c0.25		c0.00	0.01		0.00	c0.03	
v/s Ratio Perm	0.01		0.04	0.07		0.00	0.02			0.02		
v/c Ratio	0.01	0.38	0.08	0.13	0.45	0.01	0.10	0.07		0.09	0.19	
Uniform Delay, d1	11.4	14.8	12.3	8.3	13.0	9.8	31.2	33.6		31.4	34.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.2	0.2	0.1	1.4	0.0	0.2	0.1		0.2	0.3	
Delay (s)	11.4	16.0	12.5	8.4	14.4	9.8	31.4	33.7		31.6	34.9	
Level of Service	B	B	B	A	B	A	C	C		C	C	
Approach Delay (s)		15.2			13.5			32.9			34.2	
Approach LOS		B			B			C			C	

Intersection Summary					
HCM 2000 Control Delay	16.5	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.37				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6		
Intersection Capacity Utilization	61.3%	ICU Level of Service	B		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.95		0.86	0.93		0.86	0.94		0.91	0.97		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	3318	1585	1681	3380	1633	1261	3650	1432	1681	3650	1633
Flt Permitted	0.428			0.496			0.644			0.285		
Satd. Flow (perm)	670	3318	1359	818	3380	1400	804	3650	1310	487	3650	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			105			105			105
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

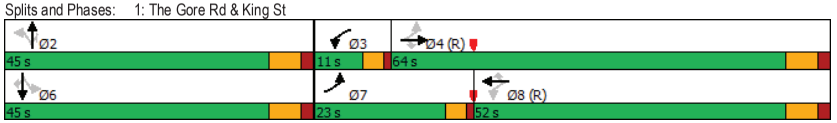
Timings
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	442	20	51	515	101	57	465	36	38	171	58
Future Volume (vph)	148	442	20	51	515	101	57	465	36	38	171	58
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6	18.6	18.6
Minimum Split (s)	11.0	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Total Split (s)	23.0	64.0	64.0	11.0	52.0	52.0	45.0	45.0	45.0	45.0	45.0	45.0
Total Split (%)	19.2%	53.3%	53.3%	9.2%	43.3%	43.3%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	86.8	76.5	76.5	81.3	72.2	72.2	21.6	21.6	21.6	21.6	21.6	21.6
Actuated g/C Ratio	0.72	0.64	0.64	0.68	0.60	0.60	0.18	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.27	0.21	0.02	0.08	0.25	0.11	0.40	0.71	0.11	0.44	0.26	0.16
Control Delay	6.5	10.3	0.1	5.7	12.3	2.6	51.0	52.2	0.7	55.2	39.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	10.3	0.1	5.7	12.3	2.6	51.0	52.2	0.7	55.2	39.6	4.0
LOS	A	B	A	A	B	A	D	D	A	E	D	A
Approach Delay		9.0			10.4			48.8			34.1	
Approach LOS		A			B			D			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
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: 0.71		
Intersection Signal Delay: 23.2	Intersection LOS: C	
Intersection Capacity Utilization 82.7%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	148	442	20	51	515	101	57	465	36	38	171	58
v/c Ratio	0.27	0.21	0.02	0.08	0.25	0.11	0.40	0.71	0.11	0.44	0.26	0.16
Control Delay	6.5	10.3	0.1	5.7	12.3	2.6	51.0	52.2	0.7	55.2	39.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	10.3	0.1	5.7	12.3	2.6	51.0	52.2	0.7	55.2	39.6	4.0
Queue Length 50th (m)	9.1	22.4	0.0	2.9	28.4	0.0	12.6	57.4	0.0	8.4	19.4	0.2
Queue Length 95th (m)	18.6	36.0	0.0	7.5	45.7	7.8	25.3	71.6	0.0	19.9	28.4	8.6
Internal Link Dist (m)		339.2			183.4			604.6			554.8	
Turn Bay Length (m)				139.9		25.0	199.9		50.0	175.0		50.0
Base Capacity (vph)	631	2115	891	609	2032	883	257	1168	490	155	1168	549
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	0.23	0.21	0.02	0.08	0.25	0.11	0.22	0.40	0.07	0.25	0.15	0.11

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	148	442	20	51	515	101	57	465	36	38	171	58
Future Volume (vph)	148	442	20	51	515	101	57	465	36	38	171	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	1.00	0.91	1.00	1.00	0.91
Flpb, ped/bikes	0.98	1.00	1.00	0.97	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3318	1359	1627	3380	1400	1186	3650	1310	1627	3650	1493
Flt Permitted	0.43	1.00	1.00	0.50	1.00	1.00	0.64	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	689	3318	1359	849	3380	1400	804	3650	1310	489	3650	1493
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	148	442	20	51	515	101	57	465	36	38	171	58
RTOR Reduction (vph)	0	0	7	0	0	40	0	0	30	0	0	48
Lane Group Flow (vph)	148	442	13	51	515	61	57	465	6	38	171	10
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	84.8	75.8	75.8	77.6	72.2	72.2	21.6	21.6	21.6	21.6	21.6	21.6
Effective Green, g (s)	84.8	75.8	75.8	77.6	72.2	72.2	21.6	21.6	21.6	21.6	21.6	21.6
Actuated g/C Ratio	0.71	0.63	0.63	0.65	0.60	0.60	0.18	0.18	0.18	0.18	0.18	0.18
Clearance Time (s)	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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	3.0
Lane Grp Cap (vph)	549	2095	858	584	2033	842	144	657	235	88	657	268
v/s Ratio Prot	c0.02	0.13		0.00	0.15			c0.13			0.05	
v/s Ratio Perm	c0.17		0.01	0.05		0.04	0.07		0.00	0.08		0.01
v/c Ratio	0.27	0.21	0.01	0.09	0.25	0.07	0.40	0.71	0.03	0.43	0.26	0.04
Uniform Delay, d1	5.9	9.4	8.2	7.7	11.2	10.0	43.4	46.2	40.5	43.7	42.3	40.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.92	0.93	3.97
Incremental Delay, d2	0.3	0.2	0.0	0.1	0.3	0.2	1.8	3.5	0.0	3.3	0.2	0.1
Delay (s)	6.1	9.6	8.2	7.8	11.5	10.1	45.2	49.7	40.6	43.5	39.5	161.5
Level of Service	A	A	A	A	B	B	D	D	D	D	D	F
Approach Delay (s)		8.7			11.0			48.7			66.6	
Approach LOS		A			B			D			E	

Intersection Summary				
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.37			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2	
Intersection Capacity Utilization	82.7%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.5			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.97		0.91	0.96		0.91	0.95		0.86	0.89		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1765	3349	1555	1697	3476	1633	1089	3650	1002	1226	3444	1306
Flt Permitted	0.399			0.454			0.505			0.682		
Satd. Flow (perm)	721	3349	1422	782	3476	1493	548	3650	859	786	3444	1195
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			176			131			187
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

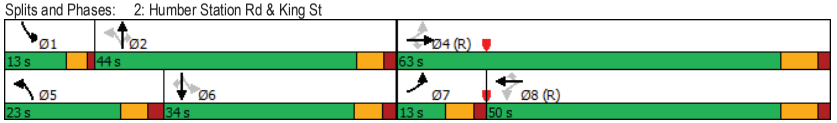
Timings
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	533	24	18	518	54	71	111	68	14	138	58
Future Volume (vph)	18	533	24	18	518	54	71	111	68	14	138	58
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	11.0	31.4	31.4	31.4	31.4	31.4	11.2	30.0	30.0	11.0	30.2	30.2
Total Split (s)	13.0	63.0	63.0	50.0	50.0	50.0	23.0	44.0	44.0	13.0	34.0	34.0
Total Split (%)	10.8%	52.5%	52.5%	41.7%	41.7%	41.7%	19.2%	36.7%	36.7%	10.8%	28.3%	28.3%
Yellow Time (s)	4.0	5.4	5.4	5.4	5.4	5.4	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.0	1.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.4	7.4	7.4	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	73.9	72.5	72.5	67.4	67.4	67.4	33.9	29.5	29.5	25.8	18.2	18.2
Actuated g/C Ratio	0.62	0.60	0.60	0.56	0.56	0.56	0.28	0.25	0.25	0.22	0.15	0.15
v/c Ratio	0.04	0.26	0.03	0.04	0.27	0.06	0.34	0.12	0.22	0.07	0.26	0.17
Control Delay	13.1	13.5	0.0	19.9	17.5	0.1	33.5	33.5	1.6	25.4	45.1	1.1
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	13.1	13.5	0.0	19.9	17.5	0.1	33.5	33.5	1.6	25.4	45.1	1.1
LOS	B	B	A	B	B	A	C	C	A	C	D	A
Approach Delay		12.9			16.0			24.9			31.6	
Approach LOS		B			B			C			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 85		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.34		
Intersection Signal Delay: 18.3	Intersection LOS: B	
Intersection Capacity Utilization 60.2%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	18	533	24	18	518	54	71	111	68	14	138	58
v/c Ratio	0.04	0.26	0.03	0.04	0.27	0.06	0.34	0.12	0.22	0.07	0.26	0.17
Control Delay	13.1	13.5	0.0	19.9	17.5	0.1	33.5	33.5	1.6	25.4	45.1	1.1
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	13.1	13.5	0.0	19.9	17.5	0.1	33.5	33.5	1.6	25.4	45.1	1.1
Queue Length 50th (m)	1.6	30.0	0.0	1.7	28.8	0.0	13.4	10.6	0.0	2.4	16.5	0.0
Queue Length 95th (m)	6.0	52.5	0.0	8.0	62.7	0.0	22.1	17.6	0.0	6.3	24.4	0.0
Internal Link Dist (m)		305.7			816.4			324.5			323.2	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		50.0	50.0		50.0
Base Capacity (vph)	505	2023	907	439	1952	915	232	1155	361	213	797	420
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	0.04	0.26	0.03	0.04	0.27	0.06	0.31	0.10	0.19	0.07	0.17	0.14

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	533	24	18	518	54	71	111	68	14	138	58
Future Volume (vph)	18	533	24	18	518	54	71	111	68	14	138	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	6.0	7.4	7.4	7.4	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.86	1.00	1.00	0.91
Flpb, ped/bikes	0.99	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1746	3349	1422	1636	3476	1493	1061	3650	859	1138	3444	1195
Flt Permitted	0.40	1.00	1.00	0.45	1.00	1.00	0.50	1.00	1.00	0.68	1.00	1.00
Satd. Flow (perm)	732	3349	1422	782	3476	1493	564	3650	859	817	3444	1195
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	18	533	24	18	518	54	71	111	68	14	138	58
RTOR Reduction (vph)	0	0	10	0	0	26	0	0	51	0	0	49
Lane Group Flow (vph)	18	533	14	18	518	28	71	111	17	14	138	9
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	70.1	70.1	70.1	61.4	61.4	61.4	36.5	29.5	29.5	22.4	19.4	19.4
Effective Green, g (s)	70.1	70.1	70.1	61.4	61.4	61.4	36.5	29.5	29.5	22.4	19.4	19.4
Actuated g/C Ratio	0.58	0.58	0.58	0.51	0.51	0.51	0.30	0.25	0.25	0.19	0.16	0.16
Clearance Time (s)	6.0	7.4	7.4	7.4	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
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	3.0
Lane Grp Cap (vph)	450	1956	830	400	1778	763	215	897	211	160	556	193
v/s Ratio Prot	0.00	c0.16			c0.15		c0.03	0.03		0.00	0.04	
v/s Ratio Perm	0.02		0.01	0.02		0.02	c0.07		0.02	0.01		0.01
v/c Ratio	0.04	0.27	0.02	0.04	0.29	0.04	0.33	0.12	0.08	0.09	0.25	0.05
Uniform Delay, d1	10.8	12.3	10.5	14.6	16.8	14.6	31.3	35.2	34.8	40.2	43.9	42.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.0	0.3	0.0	0.2	0.4	0.1	0.9	0.1	0.2	0.2	0.2	0.1
Delay (s)	10.9	12.7	10.5	14.9	17.2	14.7	32.2	35.3	35.0	40.4	44.2	42.6
Level of Service	B	B	B	B	B	B	C	D	C	D	D	D
Approach Delay (s)		12.5			16.9			34.3			43.5	
Approach LOS		B			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.33			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.8	
Intersection Capacity Utilization	60.2%	ICU Level of Service	B	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		25.0	0.0	
Storage Lanes	1	0		1	1	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.92			0.81		
Frt				0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	1789	1521	1821	1883
Flt Permitted	0.950					
Satd. Flow (perm)	1643	0	1789	1227	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)				1		
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	NBT	NBR	SBT
Lane Configurations				
Traffic Volume (vph)	5	827	1	305
Future Volume (vph)	5	827	1	305
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			2	
Detector Phase	8	2	2	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	30.0	90.0	90.0	90.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	12.2	106.4	106.4	106.4
Actuated g/C Ratio	0.10	0.89	0.89	0.89
v/c Ratio	0.03	0.52	0.00	0.18
Control Delay	42.6	15.4	6.0	3.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	42.6	15.4	6.0	3.4
LOS	D	B	A	A
Approach Delay	42.6	15.4		3.4
Approach LOS	D	B		A

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 70		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.52		
Intersection Signal Delay: 12.3	Intersection LOS: B	
Intersection Capacity Utilization 69.2%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	827	1	305
v/c Ratio	0.03	0.52	0.00	0.18
Control Delay	42.6	15.4	6.0	3.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	42.6	15.4	6.0	3.4
Queue Length 50th (m)	1.2	97.1	0.0	0.0
Queue Length 95th (m)	4.7	237.1	m0.4	32.8
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)			25.0	
Base Capacity (vph)	357	1586	1088	1669
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	0.01	0.52	0.00	0.18

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	5	0	827	1	0	305
Future Volume (vph)	5	0	827	1	0	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0	6.0		6.0
Lane Util. Factor	1.00		0.95	0.95		1.00
Frpb, ped/bikes	1.00		1.00	0.81		1.00
Flpb, ped/bikes	1.00		1.00	1.00		1.00
Frt	1.00		1.00	0.85		1.00
Flt Protected	0.95		1.00	1.00		1.00
Satd. Flow (prot)	1789		1789	1227		1883
Flt Permitted	0.95		1.00	1.00		1.00
Satd. Flow (perm)	1789		1789	1227		1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	0	827	1	0	305
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	5	0	827	1	0	305
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	8.8		99.2	99.2		99.2
Effective Green, g (s)	8.8		99.2	99.2		99.2
Actuated g/C Ratio	0.07		0.83	0.83		0.83
Clearance Time (s)	6.0		6.0	6.0		6.0
Vehicle Extension (s)	3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	131		1478	1014		1556
v/s Ratio Prot	c0.00		c0.46			0.16
v/s Ratio Perm				0.00		
v/c Ratio	0.04		0.56	0.00		0.20
Uniform Delay, d1	51.7		3.4	1.8		2.2
Progression Factor	1.00		2.86	1.53		1.00
Incremental Delay, d2	0.1		1.5	0.0		0.3
Delay (s)	51.8		11.1	2.8		2.4
Level of Service	D		B	A		A
Approach Delay (s)	51.8		11.1			2.4
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.88					
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1433	0	1883	0	1730	1883
Flt Permitted					0.289	
Satd. Flow (perm)	1433	0	1883	0	526	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	154					
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	0	827	5	305
Future Volume (vph)	0	827	5	305
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	12.1	72.9	72.9	72.9
Actuated g/C Ratio	0.13	0.81	0.81	0.81
v/c Ratio	0.08	0.54	0.01	0.20
Control Delay	0.4	8.6	6.2	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	8.6	6.2	5.1
LOS	A	A	A	A
Approach Delay	0.4	8.6		5.1
Approach LOS	A	A		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.54		
Intersection Signal Delay: 7.5	Intersection LOS: A	
Intersection Capacity Utilization 69.4%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	827	5	305
v/c Ratio	0.08	0.54	0.01	0.20
Control Delay	0.4	8.6	6.2	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	8.6	6.2	5.1
Queue Length 50th (m)	0.0	37.3	0.1	9.2
Queue Length 95th (m)	0.0	134.8	1.6	35.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	466	1525	426	1525
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	0.05	0.54	0.01	0.20

Intersection Summary

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	25	827	0	5	305
Future Volume (vph)	0	25	827	0	5	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.88		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.97	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1433		1883		1685	1883
Flt Permitted	1.00		1.00		0.29	1.00
Satd. Flow (perm)	1433		1883		512	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	25	827	0	5	305
RTOR Reduction (vph)	22	0	0	0	0	0
Lane Group Flow (vph)	3	0	827	0	5	305
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	9.9		68.1		68.1	68.1
Effective Green, g (s)	9.9		68.1		68.1	68.1
Actuated g/C Ratio	0.11		0.76		0.76	0.76
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	157		1424		387	1424
v/s Ratio Prot	c0.00		c0.44			0.16
v/s Ratio Perm					0.01	
v/c Ratio	0.02		0.58		0.01	0.21
Uniform Delay, d1	35.7		4.8		2.7	3.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.0		1.7		0.1	0.3
Delay (s)	35.8		6.5		2.8	3.5
Level of Service	D		A		A	A
Approach Delay (s)	35.8		6.5			3.5
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	6.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	25	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	3.9	4.0	4.0
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	902	909	900	900
Control Delay (s)	7.0	7.0	7.0	7.0
Approach Delay (s)	7.0	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.0		
Level of Service		A		
Intersection Capacity Utilization		29.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
14: Street JJ & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	25	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	3.9	4.0	4.0
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	902	909	900	900
Control Delay (s)	7.0	7.0	7.0	7.0
Approach Delay (s)	7.0	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay		7.0		
Level of Service		A		
Intersection Capacity Utilization		29.6%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
15: Street I & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	5	0	0	25	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	25	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	4.0	3.9	4.0	4.0
Degree Utilization, x	0.01	0.03	0.00	0.00
Capacity (veh/h)	902	909	900	900
Control Delay (s)	7.0	7.0	7.0	7.0
Approach Delay (s)	7.0	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	29.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
18: Humber Station Rd & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt					0.961							
Flt Protected											0.998	
Satd. Flow (prot)	0	1883	0	0	1810	0	0	1883	0	0	1880	0
Flt Permitted											0.998	
Satd. Flow (perm)	0	1883	0	0	1810	0	0	1883	0	0	1880	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			361.3			173.8	
Travel Time (s)		29.2			9.5			26.0			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	5	0	0	25	10	0	131	0	2	44	0
Future Volume (vph)	0	5	0	0	25	10	0	131	0	2	44	0
Peak Hour 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
Hourly flow rate (vph)	0	5	0	0	25	10	0	131	0	2	44	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	5	35	131	46
Volume Left (vph)	0	0	0	2
Volume Right (vph)	0	10	0	0
Hadj (s)	0.03	-0.14	0.03	0.04
Departure Headway (s)	4.4	4.1	4.1	4.2
Degree Utilization, x	0.01	0.04	0.15	0.05
Capacity (veh/h)	788	828	865	849
Control Delay (s)	7.4	7.3	7.8	7.4
Approach Delay (s)	7.4	7.3	7.8	7.4
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.6			
Level of Service	A			
Intersection Capacity Utilization	29.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.93				0.86			
Frt									0.850			
Flt Protected					0.950							
Satd. Flow (prot)	0	1883	0	0	1789	0	1883	1883	1601	1883	1883	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1883	0	0	1324	0	1883	1883	1383	1883	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									66			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		140.6			116.4			153.1			361.3	
Travel Time (s)		10.1			8.4			11.0			26.0	

Intersection Summary	
Area Type:	Other

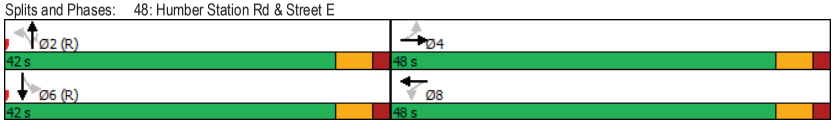
Timings
48: Humber Station Rd & Street E

05-15-2023

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	145	0	131	66	44	
Future Volume (vph)	145	0	131	66	44	
Turn Type	Perm	NA	NA	Perm	NA	
Protected Phases		8	2		6	4
Permitted Phases	8			2		
Detector Phase	8	8	2	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	48.0	48.0	42.0	42.0	42.0	48.0
Total Split (%)	53.3%	53.3%	46.7%	46.7%	46.7%	53%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)		15.5	62.5	62.5	62.5	
Actuated g/C Ratio		0.17	0.69	0.69	0.69	
v/c Ratio		0.64	0.10	0.07	0.03	
Control Delay		46.5	5.7	2.0	5.7	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		46.5	5.7	2.0	5.7	
LOS		D	A	A	A	
Approach Delay		46.5	4.4		5.7	
Approach LOS		D	A		A	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.64		
Intersection Signal Delay: 20.4	Intersection LOS: C	
Intersection Capacity Utilization 41.4%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 48: Humber Station Rd & Street E



Queues
48: Humber Station Rd & Street E

05-15-2023

Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	145	131	66	44
v/c Ratio	0.64	0.10	0.07	0.03
Control Delay	46.5	5.7	2.0	5.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.5	5.7	2.0	5.7
Queue Length 50th (m)	24.5	6.6	0.0	2.1
Queue Length 95th (m)	40.2	16.0	4.6	6.8
Internal Link Dist (m)	92.4	129.1		337.3
Turn Bay Length (m)				
Base Capacity (vph)	617	1308	981	1308
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	0.24	0.10	0.07	0.03

Intersection Summary

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	145	0	0	0	131	66	0	44	0
Future Volume (vph)	0	0	0	145	0	0	0	131	66	0	44	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0			6.0	6.0		6.0	
Lane Util. Factor					1.00			1.00	1.00		1.00	
Frpb, ped/bikes					1.00			1.00	0.86		1.00	
Flpb, ped/bikes					0.93			1.00	1.00		1.00	
Frt					1.00			1.00	0.85		1.00	
Flt Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1662			1883	1383		1883	
Flt Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1325			1883	1383		1883	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	145	0	0	0	131	66	0	44	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	20	0	0	0
Lane Group Flow (vph)	0	0	0	0	145	0	0	131	46	0	44	0
Confl. Peds. (#/hr)	50			50	50		50	50		50		50
Turn Type				Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)					15.5			62.5	62.5		62.5	
Effective Green, g (s)					15.5			62.5	62.5		62.5	
Actuated g/C Ratio					0.17			0.69	0.69		0.69	
Clearance Time (s)					6.0			6.0	6.0		6.0	
Vehicle Extension (s)					3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)					228			1307	960		1307	
v/s Ratio Prot								c0.07			0.02	
v/s Ratio Perm					c0.11				0.03			
v/c Ratio					0.64			0.10	0.05		0.03	
Uniform Delay, d1					34.6			4.5	4.3		4.3	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					5.7			0.2	0.1		0.0	
Delay (s)					40.3			4.7	4.4		4.3	
Level of Service					D			A	A		A	
Approach Delay (s)		0.0			40.3			4.6			4.3	
Approach LOS		A			D			A			A	

Intersection Summary					
HCM 2000 Control Delay	18.0	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio	0.21				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0		
Intersection Capacity Utilization	41.4%	ICU Level of Service	A		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor				0.92		0.91		0.96		0.95	0.98	
Frt						0.850		0.929			0.984	
Flt Protected				0.950						0.950		
Satd. Flow (prot)	1883	1883	0	1789	1883	1601	1883	3184	0	1789	3464	0
Flt Permitted				0.757						0.539		
Satd. Flow (perm)	1883	1883	0	1313	1883	1458	1883	3184	0	968	3464	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						678		140			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			153.1	
Travel Time (s)		5.9			58.6			14.0			11.0	

Intersection Summary	
Area Type:	Other

Timings
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	WBL	WBR	NBT	SBL	SBT	Ø4
Lane Configurations						
Traffic Volume (vph)	26	26	156	140	41	
Future Volume (vph)	26	26	156	140	41	
Turn Type	Perm	Perm	NA	pm+pt	NA	
Protected Phases			2	1	6	4
Permitted Phases	8	8		6		
Detector Phase	8	8	2	1	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	11.0	25.0	25.0
Total Split (s)	33.0	33.0	42.0	25.0	67.0	33.0
Total Split (%)	33.0%	33.0%	42.0%	25.0%	67.0%	33%
Yellow Time (s)	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.0	6.0	6.0	4.0	6.0	
Lead/Lag			Lag	Lead		
Lead-Lag Optimize?			Yes	Yes		
Recall Mode	None	None	C-Max	None	C-Max	None
Act Effct Green (s)	11.4	11.4	70.0	83.3	83.7	
Actuated g/C Ratio	0.11	0.11	0.70	0.83	0.84	
v/c Ratio	0.17	0.03	0.13	0.16	0.02	
Control Delay	39.2	0.1	4.3	3.5	3.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	39.2	0.1	4.3	3.5	3.6	
LOS	D	A	A	A	A	
Approach Delay			4.3		3.5	
Approach LOS			A		A	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.17		
Intersection Signal Delay: 5.5	Intersection LOS: A	
Intersection Capacity Utilization 51.3%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y

Queues
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	26	26	296	140	46
v/c Ratio	0.17	0.03	0.13	0.16	0.02
Control Delay	39.2	0.1	4.3	3.5	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	39.2	0.1	4.3	3.5	3.6
Queue Length 50th (m)	5.1	0.0	4.6	3.8	0.6
Queue Length 95th (m)	11.8	0.0	13.6	13.4	2.8
Internal Link Dist (m)			170.3		129.1
Turn Bay Length (m)	25.0	25.0		50.0	
Base Capacity (vph)	354	888	2271	978	2900
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	0.07	0.03	0.13	0.14	0.02

Intersection Summary

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	26	0	26	0	156	140	140	41	5
Future Volume (vph)	0	0	0	26	0	26	0	156	140	140	41	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0		6.0		6.0		4.0	6.0	
Lane Util. Factor				1.00		1.00		0.95		1.00	0.95	
Frpb, ped/bikes				1.00		0.91		0.96		1.00	0.98	
Flpb, ped/bikes				0.92		1.00		1.00		0.98	1.00	
Frt				1.00		0.85		0.93		1.00	0.98	
Flt Protected				0.95		1.00		1.00		0.95	1.00	
Satd. Flow (prot)				1648		1458		3184		1746	3463	
Flt Permitted				0.76		1.00		1.00		0.54	1.00	
Satd. Flow (perm)				1314		1458		3184		991	3463	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	26	0	26	0	156	140	140	41	5
RTOR Reduction (vph)	0	0	0	0	0	24	0	45	0	0	1	0
Lane Group Flow (vph)	0	0	0	26	0	2	0	251	0	140	45	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm			Perm		Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)				9.1		9.1		67.6		78.9	78.9	
Effective Green, g (s)				9.1		9.1		67.6		78.9	78.9	
Actuated g/C Ratio				0.09		0.09		0.68		0.79	0.79	
Clearance Time (s)				6.0		6.0		6.0		4.0	6.0	
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)				119		132		2152		837	2732	
v/s Ratio Prot								0.08		c0.01	0.01	
v/s Ratio Perm				c0.02		0.00				c0.12		
v/c Ratio				0.22		0.02		0.12		0.17	0.02	
Uniform Delay, d1				42.2		41.4		5.7		2.5	2.3	
Progression Factor				1.00		1.00		1.00		1.00	1.00	
Incremental Delay, d2				0.9		0.1		0.1		0.1	0.0	
Delay (s)				43.1		41.4		5.8		2.6	2.3	
Level of Service				D		D		A		A	A	
Approach Delay (s)		0.0			42.3			5.8			2.5	
Approach LOS		A			D			A			A	

Intersection Summary						
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A			
HCM 2000 Volume to Capacity ratio	0.18					
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0			
Intersection Capacity Utilization	51.3%	ICU Level of Service	A			
Analysis Period (min)	15					
c Critical Lane Group						

Lanes and Geometrics
62: Street Y & Street VV

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	0	1883	1883	0	1883	0
Flt Permitted						
Satd. Flow (perm)	0	1883	1883	0	1883	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	1	5	0	0	0
Future Volume (vph)	0	1	5	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	1	5	0	0	0

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	1	5	0
Volume Left (vph)	0	0	0
Volume Right (vph)	0	0	0
Hadj (s)	0.03	0.03	0.00
Departure Headway (s)	3.9	3.9	3.9
Degree Utilization, x	0.00	0.01	0.00
Capacity (veh/h)	907	909	914
Control Delay (s)	6.9	7.0	6.9
Approach Delay (s)	6.9	7.0	0.0
Approach LOS	A	A	A

Intersection Summary			
Delay	7.0		
Level of Service	A		
Intersection Capacity Utilization	29.6%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes and Geometrics
64: Street JJ & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Future Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	1	0	0	5	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1	5	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	3.9	3.9	3.9
Degree Utilization, x	0.00	0.01	0.00	0.00
Capacity (veh/h)	907	909	914	914
Control Delay (s)	6.9	7.0	6.9	6.9
Approach Delay (s)	6.9	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	7.0			
Level of Service	A			
Intersection Capacity Utilization	6.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
65: Street I & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	0	1883	0	0	1883	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Future Volume (vph)	0	1	0	0	5	0	0	0	0	0	0	0
Peak Hour 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
Hourly flow rate (vph)	0	1	0	0	5	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	1	5	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.03	0.03	0.00	0.00
Departure Headway (s)	3.9	3.9	3.9	3.9
Degree Utilization, x	0.00	0.01	0.00	0.00
Capacity (veh/h)	907	909	914	914
Control Delay (s)	6.9	7.0	6.9	6.9
Approach Delay (s)	6.9	7.0	0.0	0.0
Approach LOS	A	A	A	A

Intersection Summary					
Delay	7.0				
Level of Service	A				
Intersection Capacity Utilization	29.6%	ICU Level of Service		A	
Analysis Period (min)	15				

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1883	0	0	3579	3579	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	3579	3579	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	NBT	SBT	Ø4
Lane Configurations			
Traffic Volume (vph)	183	211	
Future Volume (vph)	183	211	
Turn Type	NA	NA	
Protected Phases	2	6	4
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	65.0	65.0	25.0
Total Split (%)	72.2%	72.2%	28%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	
Total Lost Time (s)	6.0	6.0	
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Max	C-Max	None
Act Effct Green (s)	77.6	77.6	
Actuated g/C Ratio	0.86	0.86	
v/c Ratio	0.06	0.07	
Control Delay	3.3	3.3	
Queue Delay	0.0	0.0	
Total Delay	3.3	3.3	
LOS	A	A	
Approach Delay	3.3	3.3	
Approach LOS	A	A	

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.07		
Intersection Signal Delay: 3.3		Intersection LOS: A
Intersection Capacity Utilization 20.8%		ICU Level of Service A
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	NBT	SBT
Lane Group Flow (vph)	183	211
v/c Ratio	0.06	0.07
Control Delay	3.3	3.3
Queue Delay	0.0	0.0
Total Delay	3.3	3.3
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	9.2	10.3
Internal Link Dist (m)	323.2	104.1
Turn Bay Length (m)		
Base Capacity (vph)	3086	3086
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.06	0.07

Intersection Summary

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-15-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	0	0	183	211	0
Future Volume (vph)	0	0	0	183	211	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)				6.0	6.0	
Lane Util. Factor				0.95	0.95	
Frpb, ped/bikes				1.00	1.00	
Flpb, ped/bikes				1.00	1.00	
Frt				1.00	1.00	
Flt Protected				1.00	1.00	
Satd. Flow (prot)				3579	3579	
Flt Permitted				1.00	1.00	
Satd. Flow (perm)				3579	3579	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	0	183	211	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	183	211	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)				70.4	70.4	
Effective Green, g (s)				70.4	70.4	
Actuated g/C Ratio				0.78	0.78	
Clearance Time (s)				6.0	6.0	
Vehicle Extension (s)				3.0	3.0	
Lane Grp Cap (vph)				2799	2799	
v/s Ratio Prot				0.05	c0.06	
v/s Ratio Perm						
v/c Ratio				0.07	0.08	
Uniform Delay, d1				2.2	2.3	
Progression Factor				1.00	1.00	
Incremental Delay, d2				0.0	0.1	
Delay (s)				2.3	2.3	
Level of Service				A	A	
Approach Delay (s)	0.0			2.3	2.3	
Approach LOS	A			A	A	

Intersection Summary				
HCM 2000 Control Delay	2.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96	0.95			0.99			0.93		0.94	0.97	
Frt		0.950			0.993			0.932			0.965	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1615	0	1681	1761	0	1261	1573	0	1681	1793	0
Flt Permitted	0.287			0.107			0.070			0.463		
Satd. Flow (perm)	452	1615	0	189	1761	0	93	1573	0	768	1793	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			2			48			17	
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

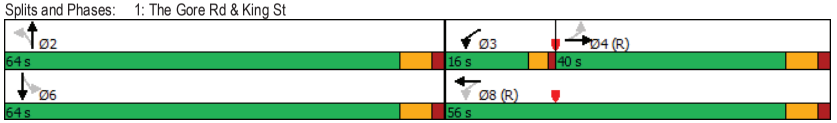
Timings
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	94	342	306	562	11	194	100	849
Future Volume (vph)	94	342	306	562	11	194	100	849
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases		4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	4	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6
Minimum Split (s)	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6
Total Split (s)	40.0	40.0	16.0	56.0	64.0	64.0	64.0	64.0
Total Split (%)	33.3%	33.3%	13.3%	46.7%	53.3%	53.3%	53.3%	53.3%
Yellow Time (s)	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	C-Min	C-Min	None	C-Min	Min	Min	Min	Min
Act Effct Green (s)	33.4	33.4	52.0	49.4	57.4	57.4	57.4	57.4
Actuated g/C Ratio	0.28	0.28	0.43	0.41	0.48	0.48	0.48	0.48
v/c Ratio	0.75	1.11	1.32	0.81	0.25	0.46	0.27	1.28
Control Delay	75.7	112.9	200.3	41.5	36.1	20.2	21.3	162.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	112.9	200.3	41.5	36.1	20.2	21.3	162.2
LOS	E	F	F	D	D	C	C	F
Approach Delay		107.1		95.8		20.6		150.5
Approach LOS		F		F		C		F

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 120		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.32		
Intersection Signal Delay: 110.5	Intersection LOS: F	
Intersection Capacity Utilization 143.2%	ICU Level of Service H	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	94	513	306	589	11	357	100	1105
v/c Ratio	0.75	1.11	1.32	0.81	0.25	0.46	0.27	1.28
Control Delay	75.7	112.9	200.3	41.5	36.1	20.2	21.3	162.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	112.9	200.3	41.5	36.1	20.2	21.3	162.2
Queue Length 50th (m)	21.0	~139.4	~81.1	125.0	1.6	48.9	14.3	~341.9
Queue Length 95th (m)	#51.0	#207.8	#139.1	#175.5	7.6	74.8	27.4	#424.8
Internal Link Dist (m)		339.2		183.4		604.6		554.8
Turn Bay Length (m)			139.9		199.9		175.0	
Base Capacity (vph)	125	464	231	726	44	777	367	866
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	0.75	1.11	1.32	0.81	0.25	0.46	0.27	1.28

Intersection Summary
~ 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.

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	342	171	306	562	27	11	194	163	100	849	256
Future Volume (vph)	94	342	171	306	562	27	11	194	163	100	849	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	6.6	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.95		1.00	0.99		1.00	0.93		1.00	0.97	
Flpb, ped/bikes	0.96	1.00		1.00	1.00		1.00	1.00		0.94	1.00	
Frt	1.00	0.95		1.00	0.99		1.00	0.93		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1497	1615		1681	1761		1261	1573		1577	1793	
Flt Permitted	0.29	1.00		0.11	1.00		0.07	1.00		0.46	1.00	
Satd. Flow (perm)	452	1615		189	1761		92	1573		768	1793	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	94	342	171	306	562	27	11	194	163	100	849	256
RTOR Reduction (vph)	0	15	0	0	1	0	0	25	0	0	9	0
Lane Group Flow (vph)	94	498	0	306	588	0	11	332	0	100	1096	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.4	33.4		49.4	49.4		57.4	57.4		57.4	57.4	
Effective Green, g (s)	33.4	33.4		49.4	49.4		57.4	57.4		57.4	57.4	
Actuated g/C Ratio	0.28	0.28		0.41	0.41		0.48	0.48		0.48	0.48	
Clearance Time (s)	6.6	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	125	449		227	724		44	752		367	857	
v/s Ratio Prot		0.31		c0.13	0.33			0.21			c0.61	
v/s Ratio Perm	0.21			c0.42			0.12			0.13		
v/c Ratio	0.75	1.11		1.35	0.81		0.25	0.44		0.27	1.28	
Uniform Delay, d1	39.5	43.3		33.4	31.2		18.5	20.7		18.8	31.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.6	75.5		182.9	9.6		3.0	0.4		0.4	134.5	
Delay (s)	73.1	118.8		216.3	40.8		21.5	21.1		19.2	165.8	
Level of Service	E	F		F	D		C	C		B	F	
Approach Delay (s)		111.7			100.8			21.1			153.7	
Approach LOS		F			F			C			F	

Intersection Summary					
HCM 2000 Control Delay	114.1	HCM 2000 Level of Service	F		
HCM 2000 Volume to Capacity ratio	1.34				
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2		
Intersection Capacity Utilization	143.2%	ICU Level of Service	H		
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.95			0.98			0.99			0.96	
Frt		0.947			0.978			0.994			0.976	
Flt Protected		0.994			0.995			0.987			0.987	
Satd. Flow (prot)	0	1618	0	0	1761	0	0	1575	0	0	1516	0
Flt Permitted		0.750			0.708			0.612			0.729	
Satd. Flow (perm)	0	1217	0	0	1251	0	0	972	0	0	1103	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39			11			3			12	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary

Area Type: Other

Timings
2: Humber Station Rd & King St

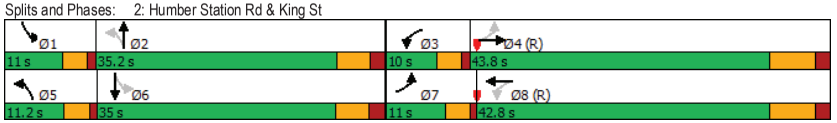
05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	134	600	73	550	107	283	236	493
Future Volume (vph)	134	600	73	550	107	283	236	493
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	10.0	31.4	11.2	30.0	11.0	30.2
Total Split (s)	11.0	43.8	10.0	42.8	11.2	35.2	11.0	35.0
Total Split (%)	11.0%	43.8%	10.0%	42.8%	11.2%	35.2%	11.0%	35.0%
Yellow Time (s)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		7.4		7.4		6.0		6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	Min	None	Min
Act Effct Green (s)		46.4		46.4		40.2		40.0
Actuated g/C Ratio		0.46		0.46		0.40		0.40
v/c Ratio		2.06		1.27		1.04		1.97
Control Delay		506.0		159.5		87.7		468.4
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		506.0		159.5		87.7		468.4
LOS		F		F		F		F
Approach Delay		506.0		159.5		87.7		468.4
Approach LOS		F		F		F		F

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.06
Intersection Signal Delay: 363.8 Intersection LOS: F
Intersection Capacity Utilization 171.4% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1208	742	408	884
v/c Ratio	2.06	1.27	1.04	1.97
Control Delay	506.0	159.5	87.7	468.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	506.0	159.5	87.7	468.4
Queue Length 50th (m)	~386.6	~189.3	~89.0	~280.3
Queue Length 95th (m)	#467.5	#261.5	#148.4	#355.6
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	585	586	392	448
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	2.06	1.27	1.04	1.97

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	600	474	73	550	119	107	283	18	236	493	155
Future Volume (vph)	134	600	474	73	550	119	107	283	18	236	493	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)		7.4			7.4			6.0			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.95			0.98			0.99			0.98	
Flpb, ped/bikes		1.00			1.00			1.00			0.99	
Frt		0.95			0.98			0.99			0.98	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		1614			1761			1575			1498	
Flt Permitted		0.75			0.71			0.61			0.73	
Satd. Flow (perm)		1218			1254			976			1107	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	134	600	474	73	550	119	107	283	18	236	493	155
RTOR Reduction (vph)	0	21	0	0	6	0	0	2	0	0	7	0
Lane Group Flow (vph)	0	1187	0	0	736	0	0	406	0	0	877	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		46.4			46.4			40.2			40.0	
Effective Green, g (s)		46.4			46.4			40.2			40.0	
Actuated g/C Ratio		0.46			0.46			0.40			0.40	
Clearance Time (s)		7.4			7.4			6.0			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		565			581			392			442	
v/s Ratio Prot												
v/s Ratio Perm		c0.97			0.59			0.42			c0.79	
v/c Ratio		2.10			1.27			1.04			1.98	
Uniform Delay, d1		26.8			26.8			29.9			30.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		501.5			133.4			55.1			450.7	
Delay (s)		528.3			160.2			85.0			480.7	
Level of Service		F			F			F			F	
Approach Delay (s)		528.3			160.2			85.0			480.7	
Approach LOS		F			F			F			F	

Intersection Summary

HCM 2000 Control Delay	375.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	171.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.85	0.90	
Frt				0.850	0.960	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1730	1883	1883	1601	1689	0
Flt Permitted	0.208				0.966	
Satd. Flow (perm)	379	1883	1883	1361	1577	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				31	25	
Link Speed (k/h)		50	50		50	
Link Distance (m)		110.9	300.5		262.0	
Travel Time (s)		8.0	21.6		18.9	

Intersection Summary	
Area Type:	Other

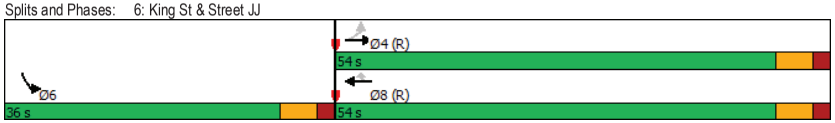
Timings
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	33	598	788	68	293
Future Volume (vph)	33	598	788	68	293
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0
Total Split (s)	54.0	54.0	54.0	54.0	36.0
Total Split (%)	60.0%	60.0%	60.0%	60.0%	40.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	52.8	52.8	52.8	52.8	25.2
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.28
v/c Ratio	0.15	0.54	0.71	0.08	0.85
Control Delay	12.4	14.6	17.2	2.8	44.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	14.6	17.2	2.8	44.5
LOS	B	B	B	A	D
Approach Delay		14.5	16.1		44.5
Approach LOS		B	B		D

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 36 (40%), Referenced to phase 4:EBTL and 8:WBT, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.85		
Intersection Signal Delay: 21.8	Intersection LOS: C	
Intersection Capacity Utilization 76.3%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	33	598	788	68	415
v/c Ratio	0.15	0.54	0.71	0.08	0.85
Control Delay	12.4	14.6	17.2	2.8	44.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.4	14.6	17.2	2.8	44.5
Queue Length 50th (m)	2.6	62.1	125.9	1.4	65.1
Queue Length 95th (m)	8.5	102.3	m187.0	m3.3	95.4
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	222	1104	1104	811	579
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	0.15	0.54	0.71	0.08	0.72

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: King St & Street JJ

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	598	788	68	293	122
Future Volume (vph)	33	598	788	68	293	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.85	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1730	1883	1883	1361	1690	
Flt Permitted	0.21	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	378	1883	1883	1361	1690	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	33	598	788	68	293	122
RTOR Reduction (vph)	0	0	0	13	18	0
Lane Group Flow (vph)	33	598	788	55	397	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	52.8	52.8	52.8	52.8	25.2	
Effective Green, g (s)	52.8	52.8	52.8	52.8	25.2	
Actuated g/C Ratio	0.59	0.59	0.59	0.59	0.28	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	221	1104	1104	798	473	
v/s Ratio Prot		0.32	c0.42		c0.23	
v/s Ratio Perm	0.09			0.04		
v/c Ratio	0.15	0.54	0.71	0.07	0.84	
Uniform Delay, d1	8.4	11.3	13.2	8.0	30.5	
Progression Factor	1.00	1.00	0.94	0.43	1.00	
Incremental Delay, d2	1.4	1.9	2.9	0.1	12.4	
Delay (s)	9.9	13.2	15.4	3.6	42.9	
Level of Service	A	B	B	A	D	
Approach Delay (s)		13.0	14.4		42.9	
Approach LOS		B	B		D	

Intersection Summary				
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	76.3%	ICU Level of Service	D	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.85	0.90	
Frt				0.850	0.960	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1730	1883	1883	1601	1689	0
Flt Permitted	0.252				0.966	
Satd. Flow (perm)	459	1883	1883	1361	1577	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				37	23	
Link Speed (k/h)		50	50		50	
Link Distance (m)		300.5	329.7		125.2	
Travel Time (s)		21.6	23.7		9.0	

Intersection Summary	
Area Type:	Other

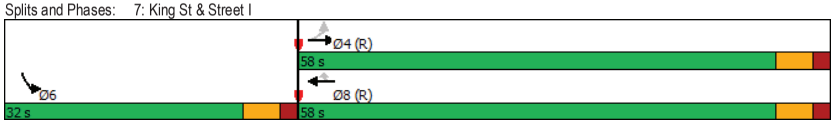
Timings
7: King St & Street I

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	33	859	734	68	293
Future Volume (vph)	33	859	734	68	293
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0
Total Split (s)	58.0	58.0	58.0	58.0	32.0
Total Split (%)	64.4%	64.4%	64.4%	64.4%	35.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	54.0	54.0	54.0	54.0	24.0
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.27
v/c Ratio	0.12	0.76	0.65	0.08	0.89
Control Delay	13.3	23.3	15.8	5.0	52.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	23.3	15.8	5.0	52.0
LOS	B	C	B	A	D
Approach Delay		22.9	14.9		52.0
Approach LOS		C	B		D

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green		
Natural Cycle: 70		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.89		
Intersection Signal Delay: 25.6		Intersection LOS: C
Intersection Capacity Utilization 80.1%		ICU Level of Service D
Analysis Period (min) 15		

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	33	859	734	68	415
v/c Ratio	0.12	0.76	0.65	0.08	0.89
Control Delay	13.3	23.3	15.8	5.0	52.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.3	23.3	15.8	5.0	52.0
Queue Length 50th (m)	3.6	119.9	84.5	2.2	65.8
Queue Length 95th (m)	m6.2	171.7	124.9	7.7	#115.1
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	275	1129	1129	830	504
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	0.12	0.76	0.65	0.08	0.82

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
7: King St & Street I

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	859	734	68	293	122
Future Volume (vph)	33	859	734	68	293	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.85	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1730	1883	1883	1361	1690	
Flt Permitted	0.25	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	459	1883	1883	1361	1690	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	33	859	734	68	293	122
RTOR Reduction (vph)	0	0	0	15	17	0
Lane Group Flow (vph)	33	859	734	53	398	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	54.0	54.0	54.0	54.0	24.0	
Effective Green, g (s)	54.0	54.0	54.0	54.0	24.0	
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.27	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	275	1129	1129	816	450	
v/s Ratio Prot		c0.46	0.39		c0.24	
v/s Ratio Perm	0.07			0.04		
v/c Ratio	0.12	0.76	0.65	0.07	0.88	
Uniform Delay, d1	7.8	13.2	11.8	7.5	31.7	
Progression Factor	1.38	1.32	1.00	1.00	1.00	
Incremental Delay, d2	0.7	3.9	2.9	0.2	18.3	
Delay (s)	11.4	21.4	14.7	7.6	50.0	
Level of Service	B	C	B	A	D	
Approach Delay (s)		21.0	14.1		50.0	
Approach LOS		C	B		D	

Intersection Summary				
HCM 2000 Control Delay	24.1	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.80			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	80.1%	ICU Level of Service	D	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.98		0.92	
Frt	0.987		0.980			
Flt Protected	0.957				0.950	
Satd. Flow (prot)	1759	0	1804	0	1730	1883
Flt Permitted	0.957				0.538	
Satd. Flow (perm)	1596	0	1804	0	905	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		19			
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	258	298	17	1050
Future Volume (vph)	258	298	17	1050
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	18.5	59.5	59.5	59.5
Actuated g/C Ratio	0.21	0.66	0.66	0.66
v/c Ratio	0.78	0.29	0.03	0.84
Control Delay	47.7	7.4	6.8	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.7	7.4	6.8	16.7
LOS	D	A	A	B
Approach Delay	47.7	7.4		16.5
Approach LOS	D	A		B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.84		
Intersection Signal Delay: 19.8	Intersection LOS: B	
Intersection Capacity Utilization 83.2%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	285	351	17	1050
v/c Ratio	0.78	0.29	0.03	0.84
Control Delay	47.7	7.4	6.8	16.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.7	7.4	6.8	16.7
Queue Length 50th (m)	47.2	22.7	0.8	71.9
Queue Length 95th (m)	72.7	39.6	m2.1	#247.2
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)			25.0	
Base Capacity (vph)	434	1198	598	1244
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	0.66	0.29	0.03	0.84

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	258	27	298	53	17	1050
Future Volume (vph)	258	27	298	53	17	1050
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.99		0.98		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.92	1.00
Frt	0.99		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1759		1803		1595	1883
Flt Permitted	0.96		1.00		0.54	1.00
Satd. Flow (perm)	1759		1803		903	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	27	298	53	17	1050
RTOR Reduction (vph)	5	0	6	0	0	0
Lane Group Flow (vph)	280	0	345	0	17	1050
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	18.5		59.5		59.5	59.5
Effective Green, g (s)	18.5		59.5		59.5	59.5
Actuated g/C Ratio	0.21		0.66		0.66	0.66
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	361		1191		596	1244
v/s Ratio Prot	c0.16		0.19			c0.56
v/s Ratio Perm					0.02	
v/c Ratio	0.78		0.29		0.03	0.84
Uniform Delay, d1	33.8		6.4		5.3	11.7
Progression Factor	1.00		1.00		1.04	0.77
Incremental Delay, d2	10.0		0.6		0.1	5.5
Delay (s)	43.8		7.0		5.5	14.5
Level of Service	D		A		A	B
Approach Delay (s)	43.8		7.0			14.3
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
9: The Gore Rd & Street DDD

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.982			
Flt Protected						
Satd. Flow (prot)	1629	0	1850	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1850	0	0	1883
Link Speed (k/h)	50		50			50
Link Distance (m)	209.0		211.4			265.4
Travel Time (s)	15.0		15.2			19.1

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
9: The Gore Rd & Street DDD

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	20	283	43	0	1067
Future Volume (Veh/h)	0	20	283	43	0	1067
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	20	283	43	0	1067
Pedestrians	50		50			50
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		4			4
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			212			265
pX, platoon unblocked	0.70	0.96			0.96	
vC, conflicting volume	1472	404			376	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1336	361			331	
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			100	
cM capacity (veh/h)	109	602			1131	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	20	326	1067
Volume Left	0	0	0
Volume Right	20	43	0
cSH	602	1700	1700
Volume to Capacity	0.03	0.19	0.63
Queue Length 95th (m)	0.8	0.0	0.0
Control Delay (s)	11.2	0.0	0.0
Lane LOS	B		
Approach Delay (s)	11.2	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		74.6%	ICU Level of Service D
Analysis Period (min)		15	

Lanes and Geometrics
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.97		0.92	
Frt	0.986		0.977			
Flt Protected	0.957				0.950	
Satd. Flow (prot)	1755	0	1793	0	1730	1883
Flt Permitted	0.957				0.573	
Satd. Flow (perm)	1594	0	1793	0	956	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		21			
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	262	250	43	805
Future Volume (vph)	262	250	43	805
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	29.0	61.0	61.0	61.0
Total Split (%)	32.2%	67.8%	67.8%	67.8%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.1	58.9	58.9	58.9
Actuated g/C Ratio	0.21	0.65	0.65	0.65
v/c Ratio	0.78	0.26	0.07	0.65
Control Delay	47.0	8.9	7.1	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.0	8.9	7.1	13.4
LOS	D	A	A	B
Approach Delay	47.0	8.9		13.1
Approach LOS	D	A		B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.78		
Intersection Signal Delay: 19.1	Intersection LOS: B	
Intersection Capacity Utilization 70.4%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	293	302	43	805
v/c Ratio	0.78	0.26	0.07	0.65
Control Delay	47.0	8.9	7.1	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.0	8.9	7.1	13.4
Queue Length 50th (m)	48.4	32.2	2.6	79.9
Queue Length 95th (m)	73.7	29.7	7.1	133.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	452	1180	625	1232
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	0.65	0.26	0.07	0.65

Intersection Summary

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	262	31	250	52	43	805
Future Volume (vph)	262	31	250	52	43	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.99		0.97		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.91	1.00
Frt	0.99		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1754		1792		1581	1883
Flt Permitted	0.96		1.00		0.57	1.00
Satd. Flow (perm)	1754		1792		954	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	262	31	250	52	43	805
RTOR Reduction (vph)	5	0	7	0	0	0
Lane Group Flow (vph)	288	0	295	0	43	805
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.1		58.9		58.9	58.9
Effective Green, g (s)	19.1		58.9		58.9	58.9
Actuated g/C Ratio	0.21		0.65		0.65	0.65
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	372		1172		624	1232
v/s Ratio Prot	c0.16		0.16			c0.43
v/s Ratio Perm					0.05	
v/c Ratio	0.77		0.25		0.07	0.65
Uniform Delay, d1	33.4		6.4		5.6	9.4
Progression Factor	1.00		1.25		1.00	1.00
Incremental Delay, d2	9.7		0.5		0.2	2.7
Delay (s)	43.1		8.5		5.8	12.1
Level of Service	D		A		A	B
Approach Delay (s)	43.1		8.5			11.8
Approach LOS	D		A			B

Intersection Summary				
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.999			0.987						0.972	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1882	0	0	1859	0	0	1789	0	0	1761	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1882	0	0	1859	0	0	1789	0	0	1761	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	120	1	0	270	29	8	0	0	19	0	5
Future Volume (vph)	0	120	1	0	270	29	8	0	0	19	0	5
Peak Hour 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
Hourly flow rate (vph)	0	120	1	0	270	29	8	0	0	19	0	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	121	299	8	24
Volume Left (vph)	0	0	8	19
Volume Right (vph)	1	29	0	5
Hadj (s)	0.03	-0.02	0.23	0.07
Departure Headway (s)	4.3	4.1	5.1	4.9
Degree Utilization, x	0.14	0.34	0.01	0.03
Capacity (veh/h)	818	871	648	670
Control Delay (s)	8.0	9.2	8.1	8.0
Approach Delay (s)	8.0	9.2	8.1	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	34.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
14: Street JJ & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.977						0.985			0.963	
Flt Protected					0.996			0.964				
Satd. Flow (prot)	0	1840	0	0	1876	0	0	1788	0	0	1814	0
Flt Permitted					0.996			0.964				
Satd. Flow (perm)	0	1840	0	0	1876	0	0	1788	0	0	1814	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	125	26	19	242	0	27	5	4	0	24	9
Future Volume (vph)	1	125	26	19	242	0	27	5	4	0	24	9
Peak Hour 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
Hourly flow rate (vph)	1	125	26	19	242	0	27	5	4	0	24	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	152	261	36	33
Volume Left (vph)	1	19	27	0
Volume Right (vph)	26	0	4	9
Hadj (s)	-0.07	0.05	0.12	-0.13
Departure Headway (s)	4.3	4.3	5.0	4.7
Degree Utilization, x	0.18	0.31	0.05	0.04
Capacity (veh/h)	816	815	662	688
Control Delay (s)	8.2	9.2	8.2	8.0
Approach Delay (s)	8.2	9.2	8.2	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	45.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
15: Street I & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.993						0.975			0.958	
Flt Protected					0.994			0.966				
Satd. Flow (prot)	0	1870	0	0	1872	0	0	1774	0	0	1804	0
Flt Permitted					0.994			0.966				
Satd. Flow (perm)	0	1870	0	0	1872	0	0	1774	0	0	1804	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	116	6	29	210	0	27	4	7	0	20	9
Future Volume (vph)	1	116	6	29	210	0	27	4	7	0	20	9
Peak Hour 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
Hourly flow rate (vph)	1	116	6	29	210	0	27	4	7	0	20	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	123	239	38	29
Volume Left (vph)	1	29	27	0
Volume Right (vph)	6	0	7	9
Hadj (s)	0.01	0.06	0.07	-0.15
Departure Headway (s)	4.3	4.3	4.8	4.6
Degree Utilization, x	0.15	0.28	0.05	0.04
Capacity (veh/h)	809	830	690	713
Control Delay (s)	8.1	8.9	8.1	7.8
Approach Delay (s)	8.1	8.9	8.1	7.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.5			
Level of Service	A			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
18: Humber Station Rd & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.923			0.989			0.983			0.994	
Flt Protected		0.999			0.980			0.973			0.995	
Satd. Flow (prot)	0	1737	0	0	1825	0	0	1801	0	0	1863	0
Flt Permitted		0.999			0.980			0.973			0.995	
Satd. Flow (perm)	0	1737	0	0	1825	0	0	1801	0	0	1863	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			360.1			173.8	
Travel Time (s)		29.2			9.5			25.9			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	75	102	60	75	12	100	57	22	19	166	9
Future Volume (vph)	3	75	102	60	75	12	100	57	22	19	166	9
Peak Hour 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
Hourly flow rate (vph)	3	75	102	60	75	12	100	57	22	19	166	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	180	147	179	194
Volume Left (vph)	3	60	100	19
Volume Right (vph)	102	12	22	9
Hadj (s)	-0.30	0.07	0.07	0.03
Departure Headway (s)	4.8	5.2	5.1	5.0
Degree Utilization, x	0.24	0.21	0.25	0.27
Capacity (veh/h)	687	634	656	663
Control Delay (s)	9.3	9.6	9.8	9.9
Approach Delay (s)	9.3	9.6	9.8	9.9
Approach LOS	A	A	A	A

Intersection Summary					
Delay	9.6				
Level of Service	A				
Intersection Capacity Utilization	58.8%	ICU Level of Service	B		
Analysis Period (min)	15				

Lanes and Geometrics
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.875			0.996				0.850			
Flt Protected		0.998			0.954		0.950			0.950		
Satd. Flow (prot)	0	1645	0	0	1790	0	1789	1883	1601	1789	1883	0
Flt Permitted		0.985			0.643		0.400			0.616		
Satd. Flow (perm)	0	1623	0	0	1206	0	753	1883	1601	1160	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			3				385			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.8			209.7			154.4			360.1	
Travel Time (s)		9.3			15.1			11.1			25.9	

Intersection Summary	
Area Type:	Other

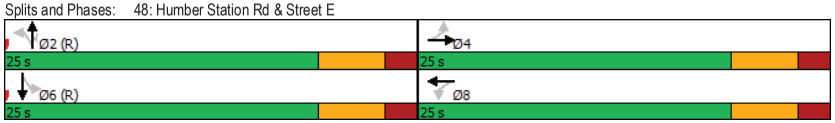
Timings
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	6	3	177	1	40	228	385	1	439
Future Volume (vph)	6	3	177	1	40	228	385	1	439
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	8	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		19.0		19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio		0.38		0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio		0.18		0.40	0.14	0.32	0.45	0.00	0.62
Control Delay		3.8		14.4	11.8	12.5	3.5	10.0	17.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		3.8		14.4	11.8	12.5	3.5	10.0	17.1
LOS		A		B	B	B	A	A	B
Approach Delay		3.8		14.4		7.2			17.1
Approach LOS		A		B		A			B

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Pretimed	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 10.9	Intersection LOS: B
Intersection Capacity Utilization 65.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 48: Humber Station Rd & Street E



Queues
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	127	183	40	228	385	1	440
v/c Ratio	0.18	0.40	0.14	0.32	0.45	0.00	0.62
Control Delay	3.8	14.4	11.8	12.5	3.5	10.0	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	14.4	11.8	12.5	3.5	10.0	17.1
Queue Length 50th (m)	0.5	11.6	2.3	14.3	0.0	0.1	31.5
Queue Length 95th (m)	8.3	25.2	7.5	27.4	13.1	0.8	55.9
Internal Link Dist (m)	105.8	185.7		130.4			336.1
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	689	460	286	715	847	440	715
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	0.18	0.40	0.14	0.32	0.45	0.00	0.62

Intersection Summary

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	3	118	177	1	5	40	228	385	1	439	1
Future Volume (vph)	6	3	118	177	1	5	40	228	385	1	439	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.87			1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1643			1790		1789	1883	1601	1789	1883	
Flt Permitted		0.99			0.64		0.40	1.00	1.00	0.62	1.00	
Satd. Flow (perm)		1623			1207		753	1883	1601	1161	1883	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	6	3	118	177	1	5	40	228	385	1	439	1
RTOR Reduction (vph)	0	73	0	0	2	0	0	0	239	0	0	0
Lane Group Flow (vph)	0	54	0	0	181	0	40	228	146	1	440	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		19.0			19.0		19.0	19.0	19.0	19.0	19.0	
Effective Green, g (s)		19.0			19.0		19.0	19.0	19.0	19.0	19.0	
Actuated g/C Ratio		0.38			0.38		0.38	0.38	0.38	0.38	0.38	
Clearance Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		616			458		286	715	608	441	715	
v/s Ratio Prot								0.12			c0.23	
v/s Ratio Perm		0.03			c0.15		0.05		0.09	0.00		
v/c Ratio		0.09			0.40		0.14	0.32	0.24	0.00	0.62	
Uniform Delay, d1		9.9			11.3		10.1	10.9	10.6	9.6	12.5	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3			2.5		1.0	1.2	0.9	0.0	3.9	
Delay (s)		10.2			13.9		11.2	12.1	11.5	9.6	16.5	
Level of Service		B			B		B	B	B	A	B	
Approach Delay (s)		10.2			13.9			11.7			16.5	
Approach LOS		B			B			B			B	

Intersection Summary				
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.50			
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	65.3%	ICU Level of Service	C	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.95	0.98		0.96		0.92		0.99		0.98	1.00	
Frt		0.975				0.850		0.975			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1795	0	1789	1883	1601	1789	1811	0	1789	1869	0
Flt Permitted	0.687			0.234			0.259			0.359		
Satd. Flow (perm)	1234	1795	0	422	1883	1470	488	1811	0	661	1869	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				133		18			2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			154.4	
Travel Time (s)		5.9			58.6			14.0			11.1	

Intersection Summary	
Area Type:	Other

Timings
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	41	361	130	108	133	74	461	93	681
Future Volume (vph)	41	361	130	108	133	74	461	93	681
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	35.0	35.0	35.0	35.0	35.0	55.0	55.0	55.0	55.0
Total Split (%)	38.9%	38.9%	38.9%	38.9%	38.9%	61.1%	61.1%	61.1%	61.1%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	26.2	26.2	26.2	26.2	26.2	51.8	51.8	51.8	51.8
Actuated g/C Ratio	0.29	0.29	0.29	0.29	0.29	0.58	0.58	0.58	0.58
v/c Ratio	0.11	0.82	1.07	0.20	0.25	0.26	0.53	0.25	0.65
Control Delay	22.7	41.6	133.0	23.8	5.5	13.3	13.1	12.8	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
Total Delay	22.7	41.6	133.0	23.8	5.5	13.3	13.1	12.8	19.2
LOS	C	D	F	C	A	B	B	B	B
Approach Delay		40.0		55.5			13.1		18.5
Approach LOS		D		E			B		B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.07		
Intersection Signal Delay: 27.6	Intersection LOS: C	
Intersection Capacity Utilization 92.4%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y

Queues
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	41	433	130	108	133	74	555	93	699
v/c Ratio	0.11	0.82	1.07	0.20	0.25	0.26	0.53	0.25	0.65
Control Delay	22.7	41.6	133.0	23.8	5.5	13.3	13.1	12.8	17.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8
Total Delay	22.7	41.6	133.0	23.8	5.5	13.3	13.1	12.8	19.2
Queue Length 50th (m)	5.1	66.8	22.7	13.8	0.0	6.2	49.7	8.3	85.5
Queue Length 95th (m)	12.7	102.2	#58.9	26.1	12.3	13.6	69.0	18.2	126.8
Internal Link Dist (m)		57.8		789.2			170.3		130.4
Turn Bay Length (m)	45.0		25.0		25.0	50.0		50.0	
Base Capacity (vph)	397	586	135	606	563	280	1049	379	1075
Starvation Cap Reductn	0	0	0	0	0	0	0	0	221
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	0.10	0.74	0.96	0.18	0.24	0.26	0.53	0.25	0.82

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	361	72	130	108	133	74	461	94	93	681	18
Future Volume (vph)	41	361	72	130	108	133	74	461	94	93	681	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.92	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.94	1.00		0.96	1.00	1.00	0.98	1.00		0.98	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1680	1795		1717	1883	1470	1748	1810		1748	1870	
Flt Permitted	0.69	1.00		0.23	1.00	1.00	0.26	1.00		0.36	1.00	
Satd. Flow (perm)	1215	1795		422	1883	1470	476	1810		661	1870	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	361	72	130	108	133	74	461	94	93	681	18
RTOR Reduction (vph)	0	9	0	0	0	94	0	8	0	0	1	0
Lane Group Flow (vph)	41	424	0	130	108	39	74	547	0	93	698	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	26.2	26.2		26.2	26.2	26.2	51.8	51.8		51.8	51.8	
Effective Green, g (s)	26.2	26.2		26.2	26.2	26.2	51.8	51.8		51.8	51.8	
Actuated g/C Ratio	0.29	0.29		0.29	0.29	0.29	0.58	0.58		0.58	0.58	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	353	522		122	548	427	273	1041		380	1076	
v/s Ratio Prot		0.24			0.06			0.30			c0.37	
v/s Ratio Perm	0.03			c0.31		0.03	0.16			0.14		
v/c Ratio	0.12	0.81		1.07	0.20	0.09	0.27	0.53		0.24	0.65	
Uniform Delay, d1	23.4	29.6		31.9	24.0	23.2	9.6	11.6		9.4	12.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.94	0.90		1.00	1.00	
Incremental Delay, d2	0.1	9.4		100.1	0.2	0.1	2.4	1.9		1.5	3.0	
Delay (s)	23.6	39.0		132.0	24.2	23.3	11.4	12.4		11.0	16.0	
Level of Service	C	D		F	C	C	B	B		B	B	
Approach Delay (s)		37.7			61.7			12.3			15.4	
Approach LOS		D			E			B			B	

Intersection Summary					
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.79				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	92.4%	ICU Level of Service		F	
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
62: Street Y & Street VV

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.987	
Flt Protected					0.957	
Satd. Flow (prot)	0	1883	1853	0	1779	0
Flt Permitted					0.957	
Satd. Flow (perm)	0	1883	1853	0	1779	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	117	284	38	47	5
Future Volume (vph)	0	117	284	38	47	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	117	284	38	47	5

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	117	322	52
Volume Left (vph)	0	0	47
Volume Right (vph)	0	38	5
Hadj (s)	0.03	-0.04	0.16
Departure Headway (s)	4.4	4.1	5.0
Degree Utilization, x	0.14	0.37	0.07
Capacity (veh/h)	796	849	660
Control Delay (s)	8.1	9.5	8.4
Approach Delay (s)	8.1	9.5	8.4
Approach LOS	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
64: Street JJ & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991			0.994			0.945			0.991	
Flt Protected					0.994			0.988			0.994	
Satd. Flow (prot)	0	1866	0	0	1861	0	0	1758	0	0	1855	0
Flt Permitted					0.994			0.988			0.994	
Satd. Flow (perm)	0	1866	0	0	1861	0	0	1758	0	0	1855	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	221	15	43	284	16	36	53	62	32	217	17
Future Volume (vph)	2	221	15	43	284	16	36	53	62	32	217	17
Peak Hour 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
Hourly flow rate (vph)	2	221	15	43	284	16	36	53	62	32	217	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	238	343	151	266
Volume Left (vph)	2	43	36	32
Volume Right (vph)	15	16	62	17
Hadj (s)	0.00	0.03	-0.16	0.02
Departure Headway (s)	5.8	5.6	6.0	5.9
Degree Utilization, x	0.38	0.54	0.25	0.44
Capacity (veh/h)	565	599	517	556
Control Delay (s)	12.4	15.0	11.0	13.4
Approach Delay (s)	12.4	15.0	11.0	13.4
Approach LOS	B	C	B	B

Intersection Summary				
Delay	13.3			
Level of Service	B			
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
65: Street I & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt		0.985			0.990			0.995			0.993	
Flt Protected					0.997			0.987			0.992	
Satd. Flow (prot)	0	1855	0	0	1859	0	0	1850	0	0	1855	0
Flt Permitted					0.997			0.987			0.992	
Satd. Flow (perm)	0	1855	0	0	1859	0	0	1850	0	0	1855	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	296	37	20	265	23	22	61	3	54	250	17
Future Volume (vph)	2	296	37	20	265	23	22	61	3	54	250	17
Peak Hour 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
Hourly flow rate (vph)	2	296	37	20	265	23	22	61	3	54	250	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	335	308	86	321
Volume Left (vph)	2	20	22	54
Volume Right (vph)	37	23	3	17
Hadj (s)	-0.03	0.00	0.06	0.04
Departure Headway (s)	5.8	5.8	6.6	6.0
Degree Utilization, x	0.54	0.50	0.16	0.54
Capacity (veh/h)	588	577	446	558
Control Delay (s)	15.2	14.5	10.8	15.7
Approach Delay (s)	15.2	14.5	10.8	15.7
Approach LOS	C	B	B	C

Intersection Summary				
Delay	14.8			
Level of Service	B			
Intersection Capacity Utilization	56.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
84: Street JJ & Street EE

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.939						0.988				
Flt Protected					0.955			0.998				
Satd. Flow (prot)	0	1769	0	0	1799	0	0	1857	0	0	1883	0
Flt Permitted					0.955			0.998				
Satd. Flow (perm)	0	1769	0	0	1799	0	0	1857	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		174.8			275.5			262.0			229.7	
Travel Time (s)		12.6			19.8			18.9			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
84: Street JJ & Street EE

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	16	13	36	2	0	3	77	8	0	316	0
Future Volume (Veh/h)	0	16	13	36	2	0	3	77	8	0	316	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	16	13	36	2	0	3	77	8	0	316	0
Pedestrians		50			50			50				
Lane Width (m)		3.7			3.7			3.7				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		4			4			4				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								262				
pX, platoon unblocked												
vC, conflicting volume	454	507	416	524	503	131	366			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	454	507	416	524	503	131	366			135		
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	96	98	90	100	100	100			100		
cM capacity (veh/h)	460	428	583	377	430	879	1141			1387		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	38	88	316
Volume Left	0	36	3	0
Volume Right	13	0	8	0
cSH	486	380	1141	1387
Volume to Capacity	0.06	0.10	0.00	0.00
Queue Length 95th (m)	1.5	2.6	0.1	0.0
Control Delay (s)	12.9	15.5	0.3	0.0
Lane LOS	B	C	A	
Approach Delay (s)	12.9	15.5	0.3	0.0
Approach LOS	B	C		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
85: Street I & Street EE

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.911										
Flt Protected								0.996				
Satd. Flow (prot)	0	1716	0	0	1883	0	0	1876	0	0	1883	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1716	0	0	1883	0	0	1876	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.5			332.9			217.2			229.8	
Travel Time (s)		19.8			24.0			15.6			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
85: Street I & Street EE

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	16	31	0	2	0	7	83	0	0	340	0
Future Volume (Veh/h)	0	16	31	0	2	0	7	83	0	0	340	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	16	31	0	2	0	7	83	0	0	340	0
Pedestrians		50			50			50			50	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		4			4			4			4	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								342				
pX, platoon unblocked												
vC, conflicting volume	538	537	440	576	537	183	390			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	538	537	440	576	537	183	390			133		
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	96	95	100	100	100	99			100		
cM capacity (veh/h)	386	410	565	335	410	787	1118			1390		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	2	90	340
Volume Left	0	0	7	0
Volume Right	31	0	0	0
cSH	501	410	1118	1390
Volume to Capacity	0.09	0.00	0.01	0.00
Queue Length 95th (m)	2.4	0.1	0.1	0.0
Control Delay (s)	12.9	13.8	0.7	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.9	13.8	0.7	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	36.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1883	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1883	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	16	618	888
Future Volume (vph)	16	618	888
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	25.0	65.0	65.0
Total Split (%)	27.8%	72.2%	72.2%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	11.1	74.0	74.0
Actuated g/C Ratio	0.12	0.82	0.82
v/c Ratio	0.07	0.40	0.58
Control Delay	31.4	5.8	6.1
Queue Delay	0.0	0.0	0.0
Total Delay	31.4	5.8	6.1
LOS	C	A	A
Approach Delay	31.4	5.8	6.1
Approach LOS	C	A	A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.58		
Intersection Signal Delay: 6.2		Intersection LOS: A
Intersection Capacity Utilization 61.0%		ICU Level of Service B
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	16	618	890
v/c Ratio	0.07	0.40	0.58
Control Delay	31.4	5.8	6.1
Queue Delay	0.0	0.0	0.0
Total Delay	31.4	5.8	6.1
Queue Length 50th (m)	2.8	24.6	28.7
Queue Length 95th (m)	7.7	74.6	m95.6
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	377	1547	1547
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.04	0.40	0.58

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-16-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	0	0	618	888	2
Future Volume (vph)	16	0	0	618	888	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			1883	1882	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			1883	1882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	16	0	0	618	888	2
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	16	0	0	618	890	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.8			69.2	69.2	
Effective Green, g (s)	8.8			69.2	69.2	
Actuated g/C Ratio	0.10			0.77	0.77	
Clearance Time (s)	6.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	174			1447	1447	
v/s Ratio Prot	c0.01			0.33	c0.47	
v/s Ratio Perm						
v/c Ratio	0.09			0.43	0.62	
Uniform Delay, d1	37.0			3.6	4.6	
Progression Factor	1.00			1.00	0.69	
Incremental Delay, d2	0.2			0.9	1.9	
Delay (s)	37.2			4.5	5.0	
Level of Service	D			A	A	
Approach Delay (s)	37.2			4.5	5.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			0.98		0.97	0.96			0.96	
Frt		0.995			0.978			0.960			0.961	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1733	0	1681	1722	0	1261	1711	0	1681	1779	0
Flt Permitted	0.094			0.115			0.255			0.075		
Satd. Flow (perm)	155	1733	0	203	1722	0	328	1711	0	133	1779	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			7			19			19	
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

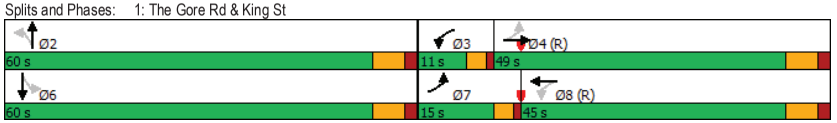
Timings
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	284	581	213	600	57	861	38	416
Future Volume (vph)	284	581	213	600	57	861	38	416
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8		2		6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	2	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6
Minimum Split (s)	11.0	30.6	9.0	30.6	30.6	30.6	30.6	30.6
Total Split (s)	15.0	49.0	11.0	45.0	60.0	60.0	60.0	60.0
Total Split (%)	12.5%	40.8%	9.2%	37.5%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.6	3.0	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lead	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes				
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	56.0	42.4	48.0	38.4	53.4	53.4	53.4	53.4
Actuated g/C Ratio	0.47	0.35	0.40	0.32	0.44	0.44	0.44	0.44
v/c Ratio	1.41	0.98	1.28	1.26	0.39	1.52	0.64	0.70
Control Delay	239.0	70.7	186.4	167.5	32.6	267.7	76.7	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	239.0	70.7	186.4	167.5	32.6	267.7	76.7	31.5
LOS	F	E	F	F	C	F	E	C
Approach Delay		124.7		171.9		256.7		34.4
Approach LOS		F		F		F		C

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 140		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.52		
Intersection Signal Delay: 166.4	Intersection LOS: F	
Intersection Capacity Utilization 133.6%	ICU Level of Service H	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	284	601	213	701	57	1171	38	560
v/c Ratio	1.41	0.98	1.28	1.26	0.39	1.52	0.64	0.70
Control Delay	239.0	70.7	186.4	167.5	32.6	267.7	76.7	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	239.0	70.7	186.4	167.5	32.6	267.7	76.7	31.5
Queue Length 50th (m)	~78.8	144.2	~48.0	~215.5	9.2	~400.5	7.1	104.7
Queue Length 95th (m)	#134.8	#221.4	#98.2	#290.6	23.0	#483.4	#28.2	147.6
Internal Link Dist (m)		339.2		183.4		604.6		554.8
Turn Bay Length (m)			139.9		199.9		175.0	
Base Capacity (vph)	201	613	167	555	145	771	59	802
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	1.41	0.98	1.28	1.26	0.39	1.52	0.64	0.70

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	581	20	213	600	101	57	861	310	38	416	144
Future Volume (vph)	284	581	20	213	600	101	57	861	310	38	416	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	4.0	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.96		1.00	0.96	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		0.97	1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.98		1.00	0.96		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1562	1733		1681	1723		1224	1712		1681	1779	
Flt Permitted	0.09	1.00		0.12	1.00		0.25	1.00		0.07	1.00	
Satd. Flow (perm)	155	1733		204	1723		328	1712		133	1779	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	581	20	213	600	101	57	861	310	38	416	144
RTOR Reduction (vph)	0	1	0	0	5	0	0	11	0	0	11	0
Lane Group Flow (vph)	284	600	0	213	696	0	57	1160	0	38	549	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.4	42.4		45.4	38.4		53.4	53.4		53.4	53.4	
Effective Green, g (s)	53.4	42.4		45.4	38.4		53.4	53.4		53.4	53.4	
Actuated g/C Ratio	0.44	0.35		0.38	0.32		0.44	0.44		0.44	0.44	
Clearance Time (s)	4.0	6.6		4.0	6.6		6.6	6.6		6.6	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	612		163	551		145	761		59	791	
v/s Ratio Prot	c0.13	0.35		0.08	0.40			c0.68			0.31	
v/s Ratio Perm	c0.51			0.42			0.17			0.29		
v/c Ratio	1.44	0.98		1.31	1.26		0.39	1.52		0.64	0.69	
Uniform Delay, d1	33.9	38.4		32.8	40.8		22.4	33.3		25.9	26.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	225.1	31.8		175.1	132.6		1.8	242.9		21.6	2.7	
Delay (s)	258.9	70.2		207.9	173.4		24.2	276.2		47.5	29.4	
Level of Service	F	E		F	F		C	F		D	C	
Approach Delay (s)		130.7			181.5			264.5			30.6	
Approach LOS		F			F			F			C	

Intersection Summary

HCM 2000 Control Delay	172.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	133.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	0.0		0.0	50.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.6			7.6			0.0			7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.97			0.96			0.98			0.96	
Frt		0.976			0.962			0.991			0.968	
Flt Protected		0.988			0.999			0.988			0.989	
Satd. Flow (prot)	0	1702	0	0	1711	0	0	1557	0	0	1493	0
Flt Permitted		0.380			0.967			0.610			0.609	
Satd. Flow (perm)	0	655	0	0	1656	0	0	954	0	0	914	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			17			4			15	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

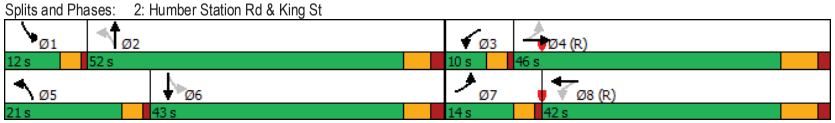
Timings
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	279	637	18	638	261	710	179	435
Future Volume (vph)	279	637	18	638	261	710	179	435
Turn Type	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8	5	2	1	6
Permitted Phases	4		8		2		6	
Detector Phase	7	4	3	8	5	2	1	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4
Minimum Split (s)	11.0	31.4	10.0	31.4	11.2	30.2	11.0	30.2
Total Split (s)	14.0	46.0	10.0	42.0	21.0	52.0	12.0	43.0
Total Split (%)	11.7%	38.3%	8.3%	35.0%	17.5%	43.3%	10.0%	35.8%
Yellow Time (s)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.2	1.0	2.2
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		7.4		7.4		6.2		6.2
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)		48.6		48.6		57.8		57.8
Actuated g/C Ratio		0.40		0.40		0.48		0.48
v/c Ratio		4.13		1.34		2.25		1.80
Control Delay		1428.2		194.0		592.0		394.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		1428.2		194.0		592.0		394.5
LOS		F		F		F		F
Approach Delay		1428.2		194.0		592.0		394.5
Approach LOS		F		F		F		F

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 145		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 4.13		
Intersection Signal Delay: 698.4	Intersection LOS: F	
Intersection Capacity Utilization 209.3%	ICU Level of Service H	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-16-2023

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1118	912	1039	808
v/c Ratio	4.13	1.34	2.25	1.80
Control Delay	1428.2	194.0	592.0	394.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	1428.2	194.0	592.0	394.5
Queue Length 50th (m)	~441.7	~290.5	~416.1	~298.5
Queue Length 95th (m)	#524.0	#370.2	#497.4	#376.2
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	271	680	461	448
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	4.13	1.34	2.25	1.80

Intersection Summary

~ 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.

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	637	202	18	638	256	261	710	68	179	435	194
Future Volume (vph)	279	637	202	18	638	256	261	710	68	179	435	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)		7.4			7.4			6.2			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.97			0.96			0.99			0.97	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.99			0.97	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		1701			1711			1556			1492	
Flt Permitted		0.38			0.97			0.61			0.61	
Satd. Flow (perm)		655			1656			961			918	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	279	637	202	18	638	256	261	710	68	179	435	194
RTOR Reduction (vph)	0	7	0	0	10	0	0	2	0	0	8	0
Lane Group Flow (vph)	0	1111	0	0	902	0	0	1037	0	0	800	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		48.6			48.6			57.8			57.8	
Effective Green, g (s)		48.6			48.6			57.8			57.8	
Actuated g/C Ratio		0.41			0.41			0.48			0.48	
Clearance Time (s)		7.4			7.4			6.2			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		265			670			462			442	
v/s Ratio Prot												
v/s Ratio Perm		c1.70			0.54			c1.08			0.87	
v/c Ratio		4.19			1.35			2.24			1.81	
Uniform Delay, d1		35.7			35.7			31.1			31.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1446.2			165.6			566.9			373.6	
Delay (s)		1481.9			201.3			598.0			404.7	
Level of Service		F			F			F			F	
Approach Delay (s)		1481.9			201.3			598.0			404.7	
Approach LOS		F			F			F			F	

Intersection Summary

HCM 2000 Control Delay	719.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	3.39		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	209.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.84	0.89	
Frt				0.850	0.958	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	1883	1883	1601	1678	0
Flt Permitted	0.157				0.967	
Satd. Flow (perm)	286	1883	1883	1338	1558	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				64	22	
Link Speed (k/h)		50	50		50	
Link Distance (m)		110.9	300.5		262.0	
Travel Time (s)		8.0	21.6		18.9	

Intersection Summary	
Area Type:	Other

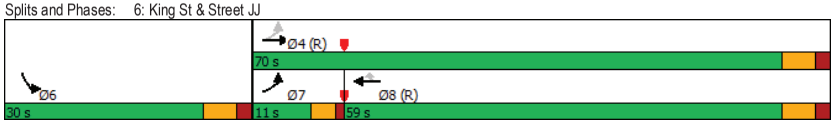
Timings
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	95	848	862	174	160
Future Volume (vph)	95	848	862	174	160
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	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0
Total Split (s)	11.0	70.0	59.0	59.0	30.0
Total Split (%)	11.0%	70.0%	59.0%	59.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	C-Min	None
Act Effct Green (s)	71.6	69.6	60.9	60.9	18.4
Actuated g/C Ratio	0.72	0.70	0.61	0.61	0.18
v/c Ratio	0.32	0.65	0.75	0.21	0.71
Control Delay	8.1	12.4	19.1	10.1	46.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	12.4	19.1	10.1	46.2
LOS	A	B	B	B	D
Approach Delay		12.0	17.6		46.2
Approach LOS		B	B		D

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
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: 0.75		
Intersection Signal Delay: 18.2	Intersection LOS: B	
Intersection Capacity Utilization 82.9%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	95	848	862	174	233
v/c Ratio	0.32	0.65	0.75	0.21	0.71
Control Delay	8.1	12.4	19.1	10.1	46.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.1	12.4	19.1	10.1	46.2
Queue Length 50th (m)	4.9	80.9	86.5	10.3	40.6
Queue Length 95th (m)	11.8	147.5 m#	108.2	m13.7	62.4
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	306	1310	1146	839	419
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	0.65	0.75	0.21	0.56

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: King St & Street JJ

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	95	848	862	174	160	73
Future Volume (vph)	95	848	862	174	160	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.84	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1730	1883	1883	1338	1677	
Flt Permitted	0.16	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	287	1883	1883	1338	1677	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	95	848	862	174	160	73
RTOR Reduction (vph)	0	0	0	26	18	0
Lane Group Flow (vph)	95	848	862	148	215	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	69.6	69.6	60.1	60.1	18.4	
Effective Green, g (s)	69.6	69.6	60.1	60.1	18.4	
Actuated g/C Ratio	0.70	0.70	0.60	0.60	0.18	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	279	1310	1131	804	308	
v/s Ratio Prot	0.02	c0.45	c0.46		c0.13	
v/s Ratio Perm	0.22			0.11		
v/c Ratio	0.34	0.65	0.76	0.18	0.70	
Uniform Delay, d1	12.0	8.4	14.7	9.0	38.2	
Progression Factor	1.00	1.00	0.94	1.37	1.00	
Incremental Delay, d2	0.7	2.5	2.7	0.3	6.7	
Delay (s)	12.7	10.9	16.6	12.6	44.9	
Level of Service	B	B	B	B	D	
Approach Delay (s)		11.1	15.9		44.9	
Approach LOS		B	B		D	

Intersection Summary				
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.75			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	82.9%	ICU Level of Service	E	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor				0.84	0.89	
Frt				0.850	0.957	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	1883	1883	1601	1676	0
Flt Permitted	0.099				0.967	
Satd. Flow (perm)	180	1883	1883	1338	1556	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				58	22	
Link Speed (k/h)		50	50		50	
Link Distance (m)		300.5	329.7		125.2	
Travel Time (s)		21.6	23.7		9.0	

Intersection Summary

Area Type: Other

Timings
7: King St & Street I

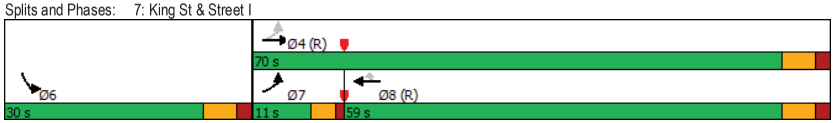
05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	96	912	962	174	160
Future Volume (vph)	96	912	962	174	160
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	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0
Total Split (s)	11.0	70.0	59.0	59.0	30.0
Total Split (%)	11.0%	70.0%	59.0%	59.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	C-Min	None
Act Effct Green (s)	71.6	69.6	60.9	60.9	18.4
Actuated g/C Ratio	0.72	0.70	0.61	0.61	0.18
v/c Ratio	0.42	0.70	0.84	0.21	0.72
Control Delay	13.7	8.8	27.0	8.1	46.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	8.8	27.0	8.1	46.5
LOS	B	A	C	A	D
Approach Delay		9.2	24.1		46.5
Approach LOS		A	C		D

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
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: 0.84
Intersection Signal Delay: 20.0 Intersection LOS: B
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	96	912	962	174	234
v/c Ratio	0.42	0.70	0.84	0.21	0.72
Control Delay	13.7	8.8	27.0	8.1	46.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	8.8	27.0	8.1	46.5
Queue Length 50th (m)	3.4	53.3	151.7	9.8	40.8
Queue Length 95th (m)	m12.3	87.9	#270.6	23.5	62.6
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	237	1309	1145	836	418
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	0.41	0.70	0.84	0.21	0.56

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
7: King St & Street I

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	96	912	962	174	160	74
Future Volume (vph)	96	912	962	174	160	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.84	0.96	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1730	1883	1883	1338	1676	
Flt Permitted	0.10	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	180	1883	1883	1338	1676	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	912	962	174	160	74
RTOR Reduction (vph)	0	0	0	23	18	0
Lane Group Flow (vph)	96	912	962	151	216	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	69.6	69.6	60.1	60.1	18.4	
Effective Green, g (s)	69.6	69.6	60.1	60.1	18.4	
Actuated g/C Ratio	0.70	0.70	0.60	0.60	0.18	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	210	1310	1131	804	308	
v/s Ratio Prot	0.03	c0.48	c0.51		c0.13	
v/s Ratio Perm	0.29			0.11		
v/c Ratio	0.46	0.70	0.85	0.19	0.70	
Uniform Delay, d1	16.4	9.0	16.3	9.0	38.2	
Progression Factor	1.79	0.59	1.00	1.00	1.00	
Incremental Delay, d2	1.2	2.4	8.1	0.5	7.0	
Delay (s)	30.6	7.7	24.4	9.5	45.3	
Level of Service	C	A	C	A	D	
Approach Delay (s)		9.9	22.1		45.3	
Approach LOS		A	C		D	

Intersection Summary				
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.82			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	88.3%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	25.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.98			
Frt	0.976		0.983			
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1728	0	1816	0	1730	1883
Flt Permitted	0.960				0.064	
Satd. Flow (perm)	1582	0	1816	0	117	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	11		16			
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	170	1184	47	472
Future Volume (vph)	170	1184	47	472
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.6	62.4	62.4	62.4
Actuated g/C Ratio	0.17	0.69	0.69	0.69
v/c Ratio	0.67	1.08	0.58	0.36
Control Delay	43.1	65.5	41.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	43.1	65.5	41.2	4.8
LOS	D	E	D	A
Approach Delay	43.1	65.5		8.1
Approach LOS	D	E		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 130		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 1.08		
Intersection Signal Delay: 49.0	Intersection LOS: D	
Intersection Capacity Utilization 100.7%	ICU Level of Service G	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	206	1360	47	472
v/c Ratio	0.67	1.08	0.58	0.36
Control Delay	43.1	65.5	41.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	43.1	65.5	41.2	4.8
Queue Length 50th (m)	33.2	~274.0	2.2	19.0
Queue Length 95th (m)	51.4	#381.0	m#25.3	33.7
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)			25.0	
Base Capacity (vph)	430	1265	81	1306
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	0.48	1.08	0.58	0.36

Intersection Summary

~ 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.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	170	36	1184	176	47	472
Future Volume (vph)	170	36	1184	176	47	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.98		0.98		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.98		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1729		1815		1730	1883
Flt Permitted	0.96		1.00		0.06	1.00
Satd. Flow (perm)	1729		1815		117	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	36	1184	176	47	472
RTOR Reduction (vph)	9	0	5	0	0	0
Lane Group Flow (vph)	197	0	1355	0	47	472
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	15.6		62.4		62.4	62.4
Effective Green, g (s)	15.6		62.4		62.4	62.4
Actuated g/C Ratio	0.17		0.69		0.69	0.69
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	299		1258		81	1305
v/s Ratio Prot	c0.11		c0.75			0.25
v/s Ratio Perm					0.40	
v/c Ratio	0.66		1.08		0.58	0.36
Uniform Delay, d1	34.7		13.8		7.1	5.6
Progression Factor	1.00		1.00		0.73	0.63
Incremental Delay, d2	5.2		48.9		25.8	0.7
Delay (s)	39.9		62.7		31.0	4.3
Level of Service	D		E		C	A
Approach Delay (s)	39.9		62.7			6.7
Approach LOS	D		E			A

Intersection Summary

HCM 2000 Control Delay	46.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
9: The Gore Rd & Street DDD

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	0	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.982			
Flt Protected						
Satd. Flow (prot)	1629	0	1850	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1850	0	0	1883
Link Speed (k/h)	50		50			50
Link Distance (m)	209.0		211.4			265.4
Travel Time (s)	15.0		15.2			19.1

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
9: The Gore Rd & Street DDD

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	12	1052	167	0	520
Future Volume (Veh/h)	0	12	1052	167	0	520
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	12	1052	167	0	520
Pedestrians	50		50			50
Lane Width (m)	3.7		3.7			3.7
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		4			4
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			212			265
pX, platoon unblocked	0.35	0.33			0.33	
vC, conflicting volume	1756	1236			1269	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1963	687			790	
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	91			100	
cM capacity (veh/h)	22	133			258	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	12	1219	520
Volume Left	0	0	0
Volume Right	12	167	0
cSH	133	1700	1700
Volume to Capacity	0.09	0.72	0.31
Queue Length 95th (m)	2.3	0.0	0.0
Control Delay (s)	34.7	0.0	0.0
Lane LOS	D		
Approach Delay (s)	34.7	0.0	0.0
Approach LOS	D		

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		84.4%	ICU Level of Service E
Analysis Period (min)		15	

Lanes and Geometrics
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.97			
Frt	0.969		0.976			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1709	0	1790	0	1730	1883
Flt Permitted	0.963				0.128	
Satd. Flow (perm)	1574	0	1790	0	233	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	16		23			
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	166	876	53	353
Future Volume (vph)	166	876	53	353
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.8	62.2	62.2	62.2
Actuated g/C Ratio	0.18	0.69	0.69	0.69
v/c Ratio	0.69	0.86	0.33	0.27
Control Delay	43.0	17.1	14.2	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	43.0	17.1	14.2	6.6
LOS	D	B	B	A
Approach Delay	43.0	17.1		7.6
Approach LOS	D	B		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 18.1	Intersection LOS: B	
Intersection Capacity Utilization 85.6%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-16-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	215	1064	53	353
v/c Ratio	0.69	0.86	0.33	0.27
Control Delay	43.0	17.1	14.2	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	43.0	17.1	14.2	6.6
Queue Length 50th (m)	33.8	116.2	3.3	20.8
Queue Length 95th (m)	52.9	m121.5	14.2	41.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	429	1244	161	1301
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	0.50	0.86	0.33	0.27

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	166	49	876	188	53	353
Future Volume (vph)	166	49	876	188	53	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.97		0.97		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1709		1790		1730	1883
Flt Permitted	0.96		1.00		0.13	1.00
Satd. Flow (perm)	1709		1790		233	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	166	49	876	188	53	353
RTOR Reduction (vph)	13	0	7	0	0	0
Lane Group Flow (vph)	202	0	1057	0	53	353
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	15.8		62.2		62.2	62.2
Effective Green, g (s)	15.8		62.2		62.2	62.2
Actuated g/C Ratio	0.18		0.69		0.69	0.69
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	300		1237		161	1301
v/s Ratio Prot	c0.12		c0.59			0.19
v/s Ratio Perm					0.23	
v/c Ratio	0.67		0.85		0.33	0.27
Uniform Delay, d1	34.7		10.5		5.6	5.3
Progression Factor	1.00		1.31		1.00	1.00
Incremental Delay, d2	5.8		0.8		5.4	0.5
Delay (s)	40.5		14.5		10.9	5.8
Level of Service	D		B		B	A
Approach Delay (s)	40.5		14.5			6.5
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.997			0.997						0.973	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1878	0	0	1878	0	0	1789	0	0	1763	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1878	0	0	1878	0	0	1789	0	0	1763	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	240	6	0	233	5	5	0	0	4	0	1
Future Volume (vph)	0	240	6	0	233	5	5	0	0	4	0	1
Peak Hour 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
Hourly flow rate (vph)	0	240	6	0	233	5	5	0	0	4	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	246	238	5	5
Volume Left (vph)	0	0	5	4
Volume Right (vph)	6	5	0	1
Hadj (s)	0.02	0.02	0.23	0.07
Departure Headway (s)	4.2	4.2	5.2	5.0
Degree Utilization, x	0.29	0.28	0.01	0.01
Capacity (veh/h)	849	839	629	643
Control Delay (s)	8.8	8.8	8.2	8.1
Approach Delay (s)	8.8	8.8	8.2	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	31.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
14: Street JJ & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.987						0.968			0.962	
Flt Protected		0.999			0.998			0.978				
Satd. Flow (prot)	0	1857	0	0	1880	0	0	1783	0	0	1812	0
Flt Permitted		0.999			0.998			0.978				
Satd. Flow (perm)	0	1857	0	0	1880	0	0	1783	0	0	1812	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	206	23	10	207	0	23	15	12	0	13	5
Future Volume (vph)	7	206	23	10	207	0	23	15	12	0	13	5
Peak Hour 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
Hourly flow rate (vph)	7	206	23	10	207	0	23	15	12	0	13	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	236	217	50	18
Volume Left (vph)	7	10	23	0
Volume Right (vph)	23	0	12	5
Hadj (s)	-0.02	0.04	-0.02	-0.13
Departure Headway (s)	4.3	4.4	4.9	4.8
Degree Utilization, x	0.28	0.26	0.07	0.02
Capacity (veh/h)	819	796	667	664
Control Delay (s)	9.0	8.9	8.3	8.0
Approach Delay (s)	9.0	8.9	8.3	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
15: Street I & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.992						0.951			0.958	
Flt Protected		0.998			0.996			0.980				
Satd. Flow (prot)	0	1865	0	0	1876	0	0	1755	0	0	1804	0
Flt Permitted		0.998			0.996			0.980				
Satd. Flow (perm)	0	1865	0	0	1876	0	0	1755	0	0	1804	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	186	12	16	190	0	21	12	19	0	11	5
Future Volume (vph)	7	186	12	16	190	0	21	12	19	0	11	5
Peak Hour 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
Hourly flow rate (vph)	7	186	12	16	190	0	21	12	19	0	11	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	205	206	52	16
Volume Left (vph)	7	16	21	0
Volume Right (vph)	12	0	19	5
Hadj (s)	0.01	0.05	-0.10	-0.15
Departure Headway (s)	4.3	4.3	4.7	4.7
Degree Utilization, x	0.24	0.25	0.07	0.02
Capacity (veh/h)	818	803	697	684
Control Delay (s)	8.7	8.8	8.1	7.8
Approach Delay (s)	8.7	8.8	8.1	7.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	34.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
18: Humber Station Rd & Street A

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.939			0.978			0.976			0.992	
Flt Protected		0.998			0.989			0.985			0.992	
Satd. Flow (prot)	0	1765	0	0	1822	0	0	1811	0	0	1853	0
Flt Permitted		0.998			0.989			0.985			0.992	
Satd. Flow (perm)	0	1765	0	0	1822	0	0	1811	0	0	1853	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			360.1			173.8	
Travel Time (s)		29.2			9.5			25.9			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	87	77	38	109	28	135	233	79	21	95	7
Future Volume (vph)	7	87	77	38	109	28	135	233	79	21	95	7
Peak Hour 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
Hourly flow rate (vph)	7	87	77	38	109	28	135	233	79	21	95	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	171	175	447	123
Volume Left (vph)	7	38	135	21
Volume Right (vph)	77	28	79	7
Hadj (s)	-0.23	-0.02	-0.01	0.03
Departure Headway (s)	5.5	5.7	5.1	5.6
Degree Utilization, x	0.26	0.28	0.63	0.19
Capacity (veh/h)	579	563	677	572
Control Delay (s)	10.5	10.9	16.5	10.0
Approach Delay (s)	10.5	10.9	16.5	10.0
Approach LOS	B	B	C	A

Intersection Summary				
Delay	13.4			
Level of Service	B			
Intersection Capacity Utilization	62.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.895			0.999				0.850		0.997	
Flt Protected		0.996			0.953		0.950			0.950		
Satd. Flow (prot)	0	1679	0	0	1793	0	1789	1883	1601	1789	1878	0
Flt Permitted		0.960			0.653		0.595			0.211		
Satd. Flow (perm)	0	1618	0	0	1229	0	1121	1883	1601	397	1878	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82			1				386		2	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		129.8			209.7			154.4			360.1	
Travel Time (s)		9.3			15.1			11.1			25.9	

Intersection Summary	
Area Type:	Other

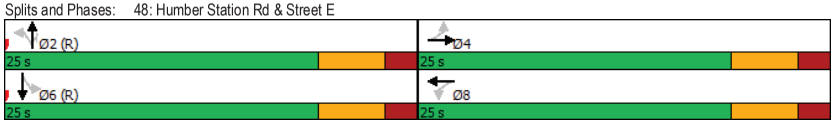
Timings
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	14	344	1	151	704	386	5	262
Future Volume (vph)	9	14	344	1	151	704	386	5	262
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	8	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	Max	Max	Max	Max	Max	Max	Max	Max	Max
Act Effct Green (s)		19.0		19.0	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio		0.38		0.38	0.38	0.38	0.38	0.38	0.38
v/c Ratio		0.16		0.75	0.36	0.98	0.46	0.03	0.37
Control Delay		4.9		26.5	14.2	49.8	3.5	10.6	13.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		4.9		26.5	14.2	49.8	3.5	10.6	13.0
LOS		A		C	B	D	A	B	B
Approach Delay		4.9		26.5		31.1			13.0
Approach LOS		A		C		C			B

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Pretimed	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 26.4	Intersection LOS: C
Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 48: Humber Station Rd & Street E



Queues
48: Humber Station Rd & Street E

05-16-2023

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	105	348	151	704	386	5	267
v/c Ratio	0.16	0.75	0.36	0.98	0.46	0.03	0.37
Control Delay	4.9	26.5	14.2	49.8	3.5	10.6	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	26.5	14.2	49.8	3.5	10.6	13.0
Queue Length 50th (m)	1.3	26.6	9.6	61.7	0.0	0.3	16.9
Queue Length 95th (m)	8.5	#63.9	21.6	#123.1	13.1	1.9	31.9
Internal Link Dist (m)	105.8	185.7		130.4			336.1
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	665	467	425	715	847	150	714
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	0.16	0.75	0.36	0.98	0.46	0.03	0.37

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	14	82	344	1	3	151	704	386	5	262	5
Future Volume (vph)	9	14	82	344	1	3	151	704	386	5	262	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frt		0.89			1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1678			1793		1789	1883	1601	1789	1878	
Flt Permitted		0.96			0.65		0.59	1.00	1.00	0.21	1.00	
Satd. Flow (perm)		1617			1228		1120	1883	1601	397	1878	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	14	82	344	1	3	151	704	386	5	262	5
RTOR Reduction (vph)	0	51	0	0	1	0	0	0	239	0	1	0
Lane Group Flow (vph)	0	54	0	0	347	0	151	704	147	5	266	0
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		19.0			19.0		19.0	19.0	19.0	19.0	19.0	
Effective Green, g (s)		19.0			19.0		19.0	19.0	19.0	19.0	19.0	
Actuated g/C Ratio		0.38			0.38		0.38	0.38	0.38	0.38	0.38	
Clearance Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Lane Grp Cap (vph)		614			466		425	715	608	150	713	
v/s Ratio Prot								c0.37			0.14	
v/s Ratio Perm		0.03			c0.28		0.13		0.09	0.01		
v/c Ratio		0.09			0.75		0.36	0.98	0.24	0.03	0.37	
Uniform Delay, d1		9.9			13.4		11.1	15.4	10.6	9.7	11.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.3			10.4		2.3	30.1	0.9	0.4	1.5	
Delay (s)		10.2			23.8		13.4	45.5	11.5	10.1	12.7	
Level of Service		B			C		B	D	B	B	B	
Approach Delay (s)		10.2			23.8			31.0			12.6	
Approach LOS		B			C			C			B	

Intersection Summary

HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.98		0.93		0.92	0.95	0.98			0.99	
Frt		0.975				0.850		0.969			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1794	0	1789	1883	1601	1789	1794	0	1789	1862	0
Flt Permitted	0.212			0.408			0.424			0.068		
Satd. Flow (perm)	392	1794	0	715	1883	1470	760	1794	0	128	1862	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				63		30			5	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			154.4	
Travel Time (s)		5.9			58.6			14.0			11.1	

Intersection Summary	
Area Type:	Other

Timings
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	60	216	88	367	109	126	967	210	492
Future Volume (vph)	60	216	88	367	109	126	967	210	492
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	25.0	25.0	25.0	25.0	25.0	65.0	65.0	65.0	65.0
Total Split (%)	27.8%	27.8%	27.8%	27.8%	27.8%	72.2%	72.2%	72.2%	72.2%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	18.9	18.9	18.9	18.9	18.9	59.1	59.1	59.1	59.1
Actuated g/C Ratio	0.21	0.21	0.21	0.21	0.21	0.66	0.66	0.66	0.66
v/c Ratio	0.73	0.68	0.59	0.93	0.30	0.25	1.02	2.53	0.42
Control Delay	82.6	41.4	50.1	67.5	17.0	8.2	49.3	736.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total Delay	82.6	41.4	50.1	67.5	17.0	8.2	49.3	736.7	9.3
LOS	F	D	D	E	B	A	D	F	A
Approach Delay		49.2		55.0			45.4		220.9
Approach LOS		D		E			D		F

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 140		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 2.53		
Intersection Signal Delay: 90.6	Intersection LOS: F	
Intersection Capacity Utilization 122.0%	ICU Level of Service H	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y

Queues
58: Humber Station Rd & Street Y

05-16-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	260	88	367	109	126	1217	210	512
v/c Ratio	0.73	0.68	0.59	0.93	0.30	0.25	1.02	2.53	0.42
Control Delay	82.6	41.4	50.1	67.5	17.0	8.2	49.3	736.7	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Total Delay	82.6	41.4	50.1	67.5	17.0	8.2	49.3	736.7	9.3
Queue Length 50th (m)	10.1	41.6	14.3	65.0	6.8	8.3	~233.8	~49.1	38.4
Queue Length 95th (m)	#32.4	67.9	#34.6	#117.2	21.0	m15.8	#311.6	#93.5	57.3
Internal Link Dist (m)		57.8		789.2			170.3		130.4
Turn Bay Length (m)	45.0		25.0		25.0	50.0		50.0	
Base Capacity (vph)	82	386	150	397	360	499	1188	83	1224
Starvation Cap Reductn	0	0	0	0	0	0	0	0	403
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	0.73	0.67	0.59	0.92	0.30	0.25	1.02	2.53	0.62

Intersection Summary

~ 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.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	216	44	88	367	109	126	967	250	210	492	20
Future Volume (vph)	60	216	44	88	367	109	126	967	250	210	492	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.92	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	0.97	1.00		0.93	1.00	1.00	0.95	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1737	1793		1665	1883	1470	1702	1795		1789	1862	
Flt Permitted	0.21	1.00		0.41	1.00	1.00	0.42	1.00		0.07	1.00	
Satd. Flow (perm)	387	1793		716	1883	1470	761	1795		127	1862	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	216	44	88	367	109	126	967	250	210	492	20
RTOR Reduction (vph)	0	8	0	0	0	50	0	10	0	0	2	0
Lane Group Flow (vph)	60	252	0	88	367	59	126	1207	0	210	510	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	18.9	18.9		18.9	18.9	18.9	59.1	59.1		59.1	59.1	
Effective Green, g (s)	18.9	18.9		18.9	18.9	18.9	59.1	59.1		59.1	59.1	
Actuated g/C Ratio	0.21	0.21		0.21	0.21	0.21	0.66	0.66		0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	81	376		150	395	308	499	1178		83	1222	
v/s Ratio Prot		0.14			c0.19			0.67			0.27	
v/s Ratio Perm	0.16			0.12		0.04	0.17			c1.65		
v/c Ratio	0.74	0.67		0.59	0.93	0.19	0.25	1.02		2.53	0.42	
Uniform Delay, d1	33.3	32.7		32.0	34.9	29.3	6.4	15.4		15.4	7.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.04	0.98		1.00	1.00	
Incremental Delay, d2	30.1	4.6		5.7	27.8	0.3	1.2	32.5		722.7	1.1	
Delay (s)	63.3	37.3		37.8	62.7	29.6	7.8	47.7		738.2	8.4	
Level of Service	E	D		D	E	C	A	D		F	A	
Approach Delay (s)		42.2			52.4			43.9			220.6	
Approach LOS		D			D			D			F	

Intersection Summary

HCM 2000 Control Delay	88.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.13		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	122.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.994	
Flt Protected					0.954	
Satd. Flow (prot)	0	1883	1853	0	1786	0
Flt Permitted					0.954	
Satd. Flow (perm)	0	1883	1853	0	1786	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-16-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	251	257	34	21	1
Future Volume (vph)	0	251	257	34	21	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	251	257	34	21	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	251	291	22
Volume Left (vph)	0	0	21
Volume Right (vph)	0	34	1
Hadj (s)	0.03	-0.04	0.20
Departure Headway (s)	4.3	4.2	5.3
Degree Utilization, x	0.30	0.34	0.03
Capacity (veh/h)	826	840	618
Control Delay (s)	9.1	9.3	8.4
Approach Delay (s)	9.1	9.3	8.4
Approach LOS	A	A	A

Intersection Summary				
Delay	9.2			
Level of Service	A			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
64: Street JJ & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.990			0.967			0.991	
Flt Protected		0.998			0.995			0.994			0.994	
Satd. Flow (prot)	0	1867	0	0	1855	0	0	1810	0	0	1855	0
Flt Permitted		0.998			0.995			0.994			0.994	
Satd. Flow (perm)	0	1867	0	0	1855	0	0	1810	0	0	1855	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	270	16	44	326	30	28	141	55	18	122	10
Future Volume (vph)	10	270	16	44	326	30	28	141	55	18	122	10
Peak Hour 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
Hourly flow rate (vph)	10	270	16	44	326	30	28	141	55	18	122	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	296	400	224	150
Volume Left (vph)	10	44	28	18
Volume Right (vph)	16	30	55	10
Hadj (s)	0.01	0.01	-0.09	0.02
Departure Headway (s)	5.9	5.7	6.2	6.5
Degree Utilization, x	0.48	0.63	0.39	0.27
Capacity (veh/h)	569	604	515	471
Control Delay (s)	14.2	18.0	13.0	11.9
Approach Delay (s)	14.2	18.0	13.0	11.9
Approach LOS	B	C	B	B

Intersection Summary				
Delay	15.0			
Level of Service	C			
Intersection Capacity Utilization	61.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
65: Street I & Street Y

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt		0.983			0.985			0.995			0.993	
Flt Protected		0.999			0.997			0.993			0.992	
Satd. Flow (prot)	0	1850	0	0	1850	0	0	1861	0	0	1855	0
Flt Permitted		0.999			0.997			0.993			0.992	
Satd. Flow (perm)	0	1850	0	0	1850	0	0	1861	0	0	1855	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	282	42	32	381	53	29	162	8	31	141	10
Future Volume (vph)	10	282	42	32	381	53	29	162	8	31	141	10
Peak Hour 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
Hourly flow rate (vph)	10	282	42	32	381	53	29	162	8	31	141	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	334	466	199	182
Volume Left (vph)	10	32	29	31
Volume Right (vph)	42	53	8	10
Hadj (s)	-0.04	-0.02	0.04	0.04
Departure Headway (s)	6.1	5.9	6.9	6.9
Degree Utilization, x	0.57	0.77	0.38	0.35
Capacity (veh/h)	546	581	460	454
Control Delay (s)	17.0	25.6	14.0	13.6
Approach Delay (s)	17.0	25.6	14.0	13.6
Approach LOS	C	D	B	B

Intersection Summary				
Delay	19.4			
Level of Service	C			
Intersection Capacity Utilization	58.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
84: Street JJ & Street EE

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.921						0.987				
Flt Protected					0.974			0.998				
Satd. Flow (prot)	0	1735	0	0	1834	0	0	1855	0	0	1883	0
Flt Permitted					0.974			0.998				
Satd. Flow (perm)	0	1735	0	0	1834	0	0	1855	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		174.8			275.5			262.0			229.7	
Travel Time (s)		12.6			19.8			18.9			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
84: Street JJ & Street EE

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	7	20	17	0	8	205	23	0	178	0
Future Volume (Veh/h)	0	5	7	20	17	0	8	205	23	0	178	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	5	7	20	17	0	8	205	23	0	178	0
Pedestrians		50			50			50				
Lane Width (m)		3.7			3.7			3.7				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		4			4			4				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								262				
pX, platoon unblocked												
vC, conflicting volume	469	522	278	520	510	266	228			278		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	469	522	278	520	510	266	228			278		
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	99	99	95	96	100	99			100		
cM capacity (veh/h)	436	418	697	391	425	739	1283			1230		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	37	236	178
Volume Left	0	20	8	0
Volume Right	7	0	23	0
cSH	545	406	1283	1230
Volume to Capacity	0.02	0.09	0.01	0.00
Queue Length 95th (m)	0.5	2.4	0.1	0.0
Control Delay (s)	11.7	14.8	0.3	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.7	14.8	0.3	0.0
Approach LOS	B	B		

Intersection Summary					
Average Delay			1.6		
Intersection Capacity Utilization			37.2%	ICU Level of Service	A
Analysis Period (min)			15		

Lanes and Geometrics
85: Street I & Street EE

05-16-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.896										
Flt Protected								0.996				
Satd. Flow (prot)	0	1688	0	0	1883	0	0	1876	0	0	1883	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1688	0	0	1883	0	0	1876	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.5			332.9			217.2			229.8	
Travel Time (s)		19.8			24.0			15.6			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
85: Street I & Street EE

05-16-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	17	0	17	0	20	221	0	0	191	0
Future Volume (Veh/h)	0	5	17	0	17	0	20	221	0	0	191	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	5	17	0	17	0	20	221	0	0	191	0
Pedestrians		50			50			50			50	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		4			4			4			4	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								342				
pX, platoon unblocked												
vC, conflicting volume	560	552	291	572	552	321	241			271		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560	552	291	572	552	321	241			271		
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	99	98	100	96	100	98			100		
cM capacity (veh/h)	360	398	685	353	398	659	1269			1237		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	17	241	191
Volume Left	0	0	20	0
Volume Right	17	0	0	0
cSH	589	398	1269	1237
Volume to Capacity	0.04	0.04	0.02	0.00
Queue Length 95th (m)	0.9	1.1	0.4	0.0
Control Delay (s)	11.3	14.4	0.8	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.3	14.4	0.8	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00	
Frt					0.997	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1872	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1872	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					2	
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	5	1228	799
Future Volume (vph)	5	1228	799
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	25.0	65.0	65.0
Total Split (%)	27.8%	72.2%	72.2%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	10.9	77.6	77.6
Actuated g/C Ratio	0.12	0.86	0.86
v/c Ratio	0.02	0.76	0.51
Control Delay	29.8	13.4	5.2
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	13.4	5.2
LOS	C	B	A
Approach Delay	29.8	13.4	5.2
Approach LOS	C	B	A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.76		
Intersection Signal Delay: 10.2	Intersection LOS: B	
Intersection Capacity Utilization 78.8%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-16-2023

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	5	1228	816
v/c Ratio	0.02	0.76	0.51
Control Delay	29.8	13.4	5.2
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	13.4	5.2
Queue Length 50th (m)	0.9	0.0	0.0
Queue Length 95th (m)	3.6	#308.5	90.4
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	377	1623	1614
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.76	0.51

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-16-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	0	1228	799	17
Future Volume (vph)	5	0	0	1228	799	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	1.00			1.00	1.00	
Frpb, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			1883	1873	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			1883	1873	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	0	0	1228	799	17
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	5	0	0	1228	816	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	7.6			70.4	70.4	
Effective Green, g (s)	7.6			70.4	70.4	
Actuated g/C Ratio	0.08			0.78	0.78	
Clearance Time (s)	6.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	151			1472	1465	
v/s Ratio Prot	c0.00			c0.65	0.44	
v/s Ratio Perm						
v/c Ratio	0.03			0.83	0.56	
Uniform Delay, d1	37.8			6.1	3.8	
Progression Factor	1.00			1.00	0.76	
Incremental Delay, d2	0.1			5.7	1.5	
Delay (s)	37.9			11.9	4.4	
Level of Service	D			B	A	
Approach Delay (s)	37.9			11.9	4.4	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.94		0.86	0.93		0.86	0.99		0.91	0.94		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	3318	1585	1681	3380	1633	1261	3650	1432	1681	3650	1633
Flt Permitted	0.441			0.496			0.132			0.630		
Satd. Flow (perm)	684	3318	1359	818	3380	1400	173	3650	1310	1051	3650	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			71			33			163			195
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

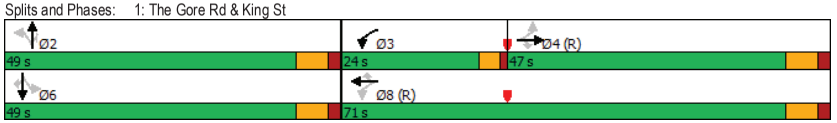
Timings
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	342	171	306	562	27	11	194	163	100	849	256
Future Volume (vph)	94	342	171	306	562	27	11	194	163	100	849	256
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6	18.6	18.6
Minimum Split (s)	30.6	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Total Split (s)	47.0	47.0	47.0	24.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	39.2%	39.2%	39.2%	20.0%	59.2%	59.2%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%
Yellow Time (s)	4.6	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	51.1	51.1	51.1	74.0	71.4	71.4	35.4	35.4	35.4	35.4	35.4	35.4
Actuated g/C Ratio	0.43	0.43	0.43	0.62	0.60	0.60	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.32	0.24	0.28	0.49	0.28	0.03	0.22	0.18	0.33	0.32	0.79	0.44
Control Delay	31.2	24.9	16.8	14.7	13.0	3.6	40.9	30.8	6.0	34.5	44.2	10.7
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	31.2	24.9	16.8	14.7	13.0	3.6	40.9	30.8	6.0	34.5	44.2	10.7
LOS	C	C	B	B	B	A	D	C	A	C	D	B
Approach Delay		23.6			13.3			20.1			36.3	
Approach LOS		C			B			C			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
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: 0.79		
Intersection Signal Delay: 25.2	Intersection LOS: C	
Intersection Capacity Utilization 95.8%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	94	342	171	306	562	27	11	194	163	100	849	256
v/c Ratio	0.32	0.24	0.28	0.49	0.28	0.03	0.22	0.18	0.33	0.32	0.79	0.44
Control Delay	31.2	24.9	16.8	14.7	13.0	3.6	40.9	30.8	6.0	34.5	44.2	10.7
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	31.2	24.9	16.8	14.7	13.0	3.6	40.9	30.8	6.0	34.5	44.2	10.7
Queue Length 50th (m)	15.0	27.5	14.9	33.2	33.4	0.0	2.0	18.5	0.0	19.0	100.0	10.9
Queue Length 95th (m)	36.4	47.6	38.6	57.7	50.7	3.8	7.4	25.6	14.6	32.0	113.7	30.6
Internal Link Dist (m)		339.2			183.4			604.6			554.8	
Turn Bay Length (m)				139.9		25.0	199.9		50.0	175.0		50.0
Base Capacity (vph)	295	1434	627	653	2012	846	61	1291	569	371	1291	654
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	0.32	0.24	0.27	0.47	0.28	0.03	0.18	0.15	0.29	0.27	0.66	0.39

Intersection Summary

HCM Signalized Intersection Capacity Analysis
1: The Gore Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	342	171	306	562	27	11	194	163	100	849	256
Future Volume (vph)	94	342	171	306	562	27	11	194	163	100	849	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	6.6	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	1.00	0.91	1.00	1.00	0.91
Flpb, ped/bikes	0.94	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.94	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1472	3318	1359	1626	3380	1400	1244	3650	1310	1585	3650	1493
Flt Permitted	0.44	1.00	1.00	0.50	1.00	1.00	0.13	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	684	3318	1359	849	3380	1400	173	3650	1310	1050	3650	1493
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	94	342	171	306	562	27	11	194	163	100	849	256
RTOR Reduction (vph)	0	0	41	0	0	11	0	0	115	0	0	137
Lane Group Flow (vph)	94	342	130	306	562	16	11	194	48	100	849	119
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	51.1	51.1	51.1	71.4	71.4	71.4	35.4	35.4	35.4	35.4	35.4	35.4
Effective Green, g (s)	51.1	51.1	51.1	71.4	71.4	71.4	35.4	35.4	35.4	35.4	35.4	35.4
Actuated g/C Ratio	0.43	0.43	0.43	0.60	0.60	0.60	0.29	0.29	0.29	0.29	0.29	0.29
Clearance Time (s)	6.6	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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	3.0
Lane Grp Cap (vph)	291	1412	578	610	2011	833	51	1076	386	309	1076	440
v/s Ratio Prot		0.10		c0.07	0.17			0.05			c0.23	
v/s Ratio Perm	0.14		0.10	c0.23		0.01	0.06		0.04	0.10		0.08
v/c Ratio	0.32	0.24	0.23	0.50	0.28	0.02	0.22	0.18	0.12	0.32	0.79	0.27
Uniform Delay, d1	22.9	22.1	21.9	12.3	11.8	10.0	31.8	31.5	31.0	33.0	38.9	32.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	0.4	0.9	0.7	0.3	0.0	2.1	0.1	0.1	0.6	3.9	0.3
Delay (s)	25.9	22.5	22.8	12.9	12.2	10.0	34.0	31.6	31.1	33.6	42.8	32.7
Level of Service	C	C	C	B	B	A	C	C	C	C	D	C
Approach Delay (s)		23.1			12.4			31.4			39.9	
Approach LOS		C			B			C			D	

Intersection Summary				
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.62			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2	
Intersection Capacity Utilization	95.8%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.5			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.97		0.93	0.98		0.93	0.97		0.88	0.93		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1765	3349	1555	1697	3476	1633	1089	3650	1002	1226	3444	1306
Flt Permitted	0.446			0.318			0.387			0.444		
Satd. Flow (perm)	804	3349	1441	556	3476	1513	432	3650	880	533	3444	1211
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			325			113			170			170
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

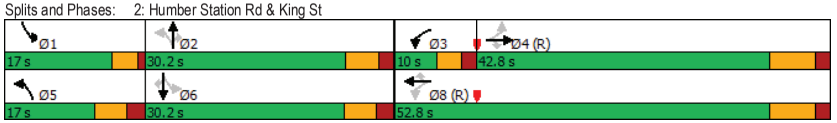
Timings
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	600	474	73	550	119	107	283	18	236	493	155
Future Volume (vph)	134	600	474	73	550	119	107	283	18	236	493	155
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	4	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	31.4	31.4	31.4	10.0	31.4	31.4	11.2	30.0	30.0	11.0	30.2	30.2
Total Split (s)	42.8	42.8	42.8	10.0	52.8	52.8	17.0	30.2	30.2	17.0	30.2	30.2
Total Split (%)	42.8%	42.8%	42.8%	10.0%	52.8%	52.8%	17.0%	30.2%	30.2%	17.0%	30.2%	30.2%
Yellow Time (s)	5.4	5.4	5.4	3.0	5.4	5.4	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.0	1.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	5.0	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	Min	Min	None	Min	Min
Act Effct Green (s)	38.7	38.7	38.7	50.1	47.7	47.7	28.8	18.3	18.3	39.9	21.8	21.8
Actuated g/C Ratio	0.39	0.39	0.39	0.50	0.48	0.48	0.29	0.18	0.18	0.40	0.22	0.22
v/c Ratio	0.43	0.46	0.63	0.21	0.33	0.15	0.55	0.42	0.06	0.72	0.66	0.39
Control Delay	30.8	26.0	12.8	16.1	17.8	4.2	31.8	37.4	0.4	36.3	39.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	26.0	12.8	16.1	17.8	4.2	31.8	37.4	0.4	36.3	39.9	7.0
LOS	C	C	B	B	B	A	C	D	A	D	D	A
Approach Delay		21.4			15.4			34.3			33.1	
Approach LOS		C			B			C			C	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 85		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.72		
Intersection Signal Delay: 24.8	Intersection LOS: C	
Intersection Capacity Utilization 79.7%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	134	600	474	73	550	119	107	283	18	236	493	155
v/c Ratio	0.43	0.46	0.63	0.21	0.33	0.15	0.55	0.42	0.06	0.72	0.66	0.39
Control Delay	30.8	26.0	12.8	16.1	17.8	4.2	31.8	37.4	0.4	36.3	39.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.8	26.0	12.8	16.1	17.8	4.2	31.8	37.4	0.4	36.3	39.9	7.0
Queue Length 50th (m)	20.9	50.0	22.5	7.4	35.1	0.6	14.4	28.2	0.0	34.0	48.7	0.0
Queue Length 95th (m)	39.7	66.3	59.2	15.6	49.4	10.3	26.5	36.6	0.0	#53.7	63.7	13.2
Internal Link Dist (m)		305.7			816.4			324.5			323.2	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		50.0	50.0		50.0
Base Capacity (vph)	321	1340	771	347	1696	796	203	883	341	327	847	426
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	0.42	0.45	0.61	0.21	0.32	0.15	0.53	0.32	0.05	0.72	0.58	0.36

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	600	474	73	550	119	107	283	18	236	493	155
Future Volume (vph)	134	600	474	73	550	119	107	283	18	236	493	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	7.4	7.4	7.4	5.0	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.93	1.00	1.00	0.93	1.00	1.00	0.88	1.00	1.00	0.93
Flpb, ped/bikes	0.97	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1714	3349	1441	1687	3476	1513	1078	3650	880	1194	3444	1211
Flt Permitted	0.45	1.00	1.00	0.32	1.00	1.00	0.39	1.00	1.00	0.44	1.00	1.00
Satd. Flow (perm)	805	3349	1441	564	3476	1513	440	3650	880	557	3444	1211
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	134	600	474	73	550	119	107	283	18	236	493	155
RTOR Reduction (vph)	0	0	202	0	0	59	0	0	15	0	0	121
Lane Group Flow (vph)	134	600	272	73	550	60	107	283	3	236	493	34
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	37.8	37.8	37.8	47.7	47.7	47.7	29.0	18.3	18.3	38.4	21.8	21.8
Effective Green, g (s)	37.8	37.8	37.8	47.7	47.7	47.7	29.0	18.3	18.3	38.4	21.8	21.8
Actuated g/C Ratio	0.38	0.38	0.38	0.48	0.48	0.48	0.29	0.18	0.18	0.38	0.22	0.22
Clearance Time (s)	7.4	7.4	7.4	5.0	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
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	3.0
Lane Grp Cap (vph)	304	1265	544	324	1658	721	195	667	161	319	750	263
v/s Ratio Prot		0.18		0.01	c0.16		0.06	0.08		c0.12	0.14	
v/s Ratio Perm	0.17		c0.19	0.10		0.04	0.10		0.00	c0.16		0.03
v/c Ratio	0.44	0.47	0.50	0.23	0.33	0.08	0.55	0.42	0.02	0.74	0.66	0.13
Uniform Delay, d1	23.2	23.6	23.8	14.9	16.2	14.2	28.0	36.2	33.5	23.8	35.7	31.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.6	1.3	3.3	0.4	0.5	0.2	3.1	0.4	0.1	8.7	2.1	0.2
Delay (s)	27.8	24.8	27.1	15.3	16.8	14.5	31.2	36.6	33.6	32.5	37.8	31.7
Level of Service	C	C	C	B	B	B	C	D	C	C	D	C
Approach Delay (s)		26.1			16.3			35.1			35.3	
Approach LOS		C			B			D			D	

Intersection Summary

HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
6: King St & Street JJ

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.97			0.85	0.94	
Frt				0.850	0.960	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1730	3579	3579	1601	1712	0
Flt Permitted	0.316				0.966	
Satd. Flow (perm)	557	3579	3579	1361	1644	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				47	30	
Link Speed (k/h)		50	50		50	
Link Distance (m)		110.9	300.5		262.0	
Travel Time (s)		8.0	21.6		18.9	

Intersection Summary	
Area Type:	Other

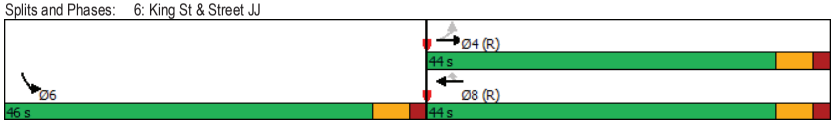
Timings
6: King St & Street JJ

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	33	598	788	68	293
Future Volume (vph)	33	598	788	68	293
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0
Total Split (s)	44.0	44.0	44.0	44.0	46.0
Total Split (%)	48.9%	48.9%	48.9%	48.9%	51.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	51.5	51.5	51.5	51.5	26.5
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.29
v/c Ratio	0.10	0.29	0.38	0.09	0.79
Control Delay	12.5	11.5	12.0	4.1	37.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	11.5	12.0	4.1	37.6
LOS	B	B	B	A	D
Approach Delay		11.5	11.3		37.6
Approach LOS		B	B		D

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 36 (40%), Referenced to phase 4:EBTL and 8:WBT, Start of Green		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.79		
Intersection Signal Delay: 17.1	Intersection LOS: B	
Intersection Capacity Utilization 62.3%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	33	598	788	68	415
v/c Ratio	0.10	0.29	0.38	0.09	0.79
Control Delay	12.5	11.5	12.0	4.1	37.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	11.5	12.0	4.1	37.6
Queue Length 50th (m)	2.5	27.1	53.4	4.8	63.4
Queue Length 95th (m)	9.0	46.6	82.7	m9.3	84.6
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	318	2047	2047	798	777
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	0.10	0.29	0.38	0.09	0.53

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
6: King St & Street JJ

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	598	788	68	293	122
Future Volume (vph)	33	598	788	68	293	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.85	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1666	3579	3579	1361	1713	
Flt Permitted	0.32	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	553	3579	3579	1361	1713	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	33	598	788	68	293	122
RTOR Reduction (vph)	0	0	0	20	21	0
Lane Group Flow (vph)	33	598	788	48	394	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	51.5	51.5	51.5	51.5	26.5	
Effective Green, g (s)	51.5	51.5	51.5	51.5	26.5	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.29	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	316	2047	2047	778	504	
v/s Ratio Prot		0.17	c0.22		c0.23	
v/s Ratio Perm	0.06			0.04		
v/c Ratio	0.10	0.29	0.38	0.06	0.78	
Uniform Delay, d1	8.8	9.9	10.6	8.5	29.1	
Progression Factor	1.00	1.00	0.97	0.73	1.00	
Incremental Delay, d2	0.7	0.4	0.5	0.1	7.7	
Delay (s)	9.4	10.3	10.7	6.4	36.8	
Level of Service	A	B	B	A	D	
Approach Delay (s)		10.2	10.4		36.8	
Approach LOS		B	B		D	

Intersection Summary				
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.96			0.85	0.94	
Frt				0.850	0.960	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1730	3579	3579	1601	1712	0
Flt Permitted	0.340				0.966	
Satd. Flow (perm)	597	3579	3579	1361	1644	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				52	29	
Link Speed (k/h)		50	50		50	
Link Distance (m)		300.5	329.7		125.2	
Travel Time (s)		21.6	23.7		9.0	

Intersection Summary	
Area Type:	Other

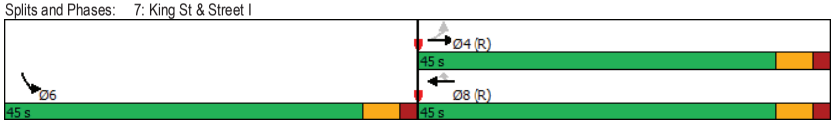
Timings
7: King St & Street I

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	33	859	734	68	293
Future Volume (vph)	33	859	734	68	293
Turn Type	Perm	NA	NA	Perm	Prot
Protected Phases		4	8		6
Permitted Phases	4			8	
Detector Phase	4	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0
Total Split (s)	45.0	45.0	45.0	45.0	45.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	51.6	51.6	51.6	51.6	26.4
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.29
v/c Ratio	0.10	0.42	0.36	0.08	0.79
Control Delay	16.3	16.9	12.1	5.1	38.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	16.9	12.1	5.1	38.0
LOS	B	B	B	A	D
Approach Delay		16.9	11.5		38.0
Approach LOS		B	B		D

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.79		
Intersection Signal Delay: 19.0	Intersection LOS: B	
Intersection Capacity Utilization 62.3%	ICU Level of Service B	
Analysis Period (min) 15		

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	33	859	734	68	415
v/c Ratio	0.10	0.42	0.36	0.08	0.79
Control Delay	16.3	16.9	12.1	5.1	38.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	16.9	12.1	5.1	38.0
Queue Length 50th (m)	3.4	53.7	34.7	1.2	63.7
Queue Length 95th (m)	m9.7	77.3	58.3	8.4	85.1
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	341	2050	2050	801	758
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	0.10	0.42	0.36	0.08	0.55

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
7: King St & Street I

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	33	859	734	68	293	122
Future Volume (vph)	33	859	734	68	293	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.85	0.98	
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1659	3579	3579	1361	1713	
Flt Permitted	0.34	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	594	3579	3579	1361	1713	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	33	859	734	68	293	122
RTOR Reduction (vph)	0	0	0	22	20	0
Lane Group Flow (vph)	33	859	734	46	395	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	51.6	51.6	51.6	51.6	26.4	
Effective Green, g (s)	51.6	51.6	51.6	51.6	26.4	
Actuated g/C Ratio	0.57	0.57	0.57	0.57	0.29	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	340	2051	2051	780	502	
v/s Ratio Prot		c0.24	0.21		c0.23	
v/s Ratio Perm	0.06			0.03		
v/c Ratio	0.10	0.42	0.36	0.06	0.79	
Uniform Delay, d1	8.7	10.8	10.3	8.5	29.2	
Progression Factor	1.35	1.35	1.00	1.00	1.00	
Incremental Delay, d2	0.5	0.6	0.5	0.1	7.9	
Delay (s)	12.3	15.1	10.8	8.6	37.1	
Level of Service	B	B	B	A	D	
Approach Delay (s)		15.0	10.6		37.1	
Approach LOS		B	B		D	

Intersection Summary				
HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.54			
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	62.3%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		25.0	0.0	
Storage Lanes	1	0		1	1	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.93		1.00	0.85	0.92	
Frt	0.987		0.998	0.850		
Flt Protected	0.957				0.950	
Satd. Flow (prot)	1759	0	1781	1521	1730	1883
Flt Permitted	0.957				0.562	
Satd. Flow (perm)	1661	0	1781	1293	938	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		2	48		
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	258	298	53	17	1050
Future Volume (vph)	258	298	53	17	1050
Turn Type	Prot	NA	Perm	Perm	NA
Protected Phases	8	2			6
Permitted Phases			2	6	
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	18.5	59.5	59.5	59.5	59.5
Actuated g/C Ratio	0.21	0.66	0.66	0.66	0.66
v/c Ratio	0.78	0.26	0.06	0.03	0.84
Control Delay	47.7	7.5	2.2	6.8	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	7.5	2.2	6.8	16.7
LOS	D	A	A	A	B
Approach Delay	47.7	6.7			16.5
Approach LOS	D	A			B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 80		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.84		
Intersection Signal Delay: 19.7	Intersection LOS: B	
Intersection Capacity Utilization 83.2%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	285	303	48	17	1050
v/c Ratio	0.78	0.26	0.06	0.03	0.84
Control Delay	47.7	7.5	2.2	6.8	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	47.7	7.5	2.2	6.8	16.7
Queue Length 50th (m)	47.2	21.2	0.0	0.8	71.9
Queue Length 95th (m)	72.7	37.1	4.1	m2.0	#247.2
Internal Link Dist (m)	110.7	554.8			187.4
Turn Bay Length (m)			25.0		
Base Capacity (vph)	434	1177	870	619	1244
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	0.66	0.26	0.06	0.03	0.84

Intersection Summary

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	258	27	298	53	17	1050
Future Volume (vph)	258	27	298	53	17	1050
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		0.95	0.95	1.00	1.00
Frpb, ped/bikes	0.99		1.00	0.85	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	0.91	1.00
Frt	0.99		1.00	0.85	1.00	1.00
Flt Protected	0.96		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1759		1780	1293	1582	1883
Flt Permitted	0.96		1.00	1.00	0.56	1.00
Satd. Flow (perm)	1759		1780	1293	936	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	258	27	298	53	17	1050
RTOR Reduction (vph)	5	0	1	16	0	0
Lane Group Flow (vph)	280	0	302	32	17	1050
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	18.5		59.5	59.5	59.5	59.5
Effective Green, g (s)	18.5		59.5	59.5	59.5	59.5
Actuated g/C Ratio	0.21		0.66	0.66	0.66	0.66
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	361		1176	854	618	1244
v/s Ratio Prot	c0.16		0.17			c0.56
v/s Ratio Perm				0.02	0.02	
v/c Ratio	0.78		0.26	0.04	0.03	0.84
Uniform Delay, d1	33.8		6.2	5.3	5.3	11.7
Progression Factor	1.00		1.00	1.00	1.04	0.77
Incremental Delay, d2	10.0		0.5	0.1	0.1	5.5
Delay (s)	43.8		6.8	5.4	5.5	14.5
Level of Service	D		A	A	A	B
Approach Delay (s)	43.8		6.6			14.3
Approach LOS	D		A			B

Intersection Summary

HCM 2000 Control Delay	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
9: The Gore Rd & Street DDD

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.982			
Flt Protected						
Satd. Flow (prot)	1629	0	1850	0	1821	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1850	0	1821	1883
Link Speed (k/h)	50		50			50
Link Distance (m)	209.0		211.4			265.4
Travel Time (s)	15.0		15.2			19.1

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
9: The Gore Rd & Street DDD

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	20	283	43	0	1067
Future Volume (Veh/h)	0	20	283	43	0	1067
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	20	283	43	0	1067
Pedestrians	50		50			50
Lane Width (m)	3.7		3.7			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		4			4
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			212			265
pX, platoon unblocked	0.70	0.96			0.96	
vC, conflicting volume	1472	404			376	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1326	357			327	
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			100	
cM capacity (veh/h)	110	605			1131	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	20	326	0	1067
Volume Left	0	0	0	0
Volume Right	20	43	0	0
cSH	605	1700	1700	1700
Volume to Capacity	0.03	0.19	0.00	0.63
Queue Length 95th (m)	0.8	0.0	0.0	0.0
Control Delay (s)	11.2	0.0	0.0	0.0
Lane LOS	B			
Approach Delay (s)	11.2	0.0	0.0	
Approach LOS	B			

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		74.6%	ICU Level of Service	D
Analysis Period (min)		15		

Lanes and Geometrics
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.97		0.92	
Frt	0.986		0.977			
Flt Protected	0.957				0.950	
Satd. Flow (prot)	1755	0	1793	0	1730	1883
Flt Permitted	0.957				0.573	
Satd. Flow (perm)	1594	0	1793	0	956	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		21			
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	262	250	43	805
Future Volume (vph)	262	250	43	805
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	29.0	61.0	61.0	61.0
Total Split (%)	32.2%	67.8%	67.8%	67.8%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	19.1	58.9	58.9	58.9
Actuated g/C Ratio	0.21	0.65	0.65	0.65
v/c Ratio	0.78	0.26	0.07	0.65
Control Delay	47.0	8.6	7.1	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.0	8.6	7.1	13.4
LOS	D	A	A	B
Approach Delay	47.0	8.6		13.1
Approach LOS	D	A		B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.78		
Intersection Signal Delay: 19.1	Intersection LOS: B	
Intersection Capacity Utilization 70.4%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	293	302	43	805
v/c Ratio	0.78	0.26	0.07	0.65
Control Delay	47.0	8.6	7.1	13.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	47.0	8.6	7.1	13.4
Queue Length 50th (m)	48.4	32.4	2.6	79.9
Queue Length 95th (m)	73.7	29.6	7.1	133.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	452	1180	625	1232
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	0.65	0.26	0.07	0.65

Intersection Summary

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-15-2023

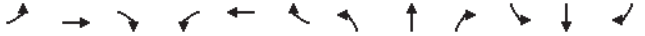
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	262	31	250	52	43	805
Future Volume (vph)	262	31	250	52	43	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.99		0.97		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.91	1.00
Frt	0.99		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1754		1792		1581	1883
Flt Permitted	0.96		1.00		0.57	1.00
Satd. Flow (perm)	1754		1792		954	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	262	31	250	52	43	805
RTOR Reduction (vph)	5	0	7	0	0	0
Lane Group Flow (vph)	288	0	295	0	43	805
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	19.1		58.9		58.9	58.9
Effective Green, g (s)	19.1		58.9		58.9	58.9
Actuated g/C Ratio	0.21		0.65		0.65	0.65
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	372		1172		624	1232
v/s Ratio Prot	c0.16		0.16			c0.43
v/s Ratio Perm					0.05	
v/c Ratio	0.77		0.25		0.07	0.65
Uniform Delay, d1	33.4		6.4		5.6	9.4
Progression Factor	1.00		1.21		1.00	1.00
Incremental Delay, d2	9.7		0.5		0.2	2.7
Delay (s)	43.1		8.3		5.8	12.1
Level of Service	D		A		A	B
Approach Delay (s)	43.1		8.3			11.8
Approach LOS	D		A			B

Intersection Summary			
HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-15-2023

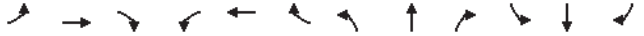


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.999			0.987						0.972	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1882	0	0	1859	0	0	1789	0	0	1761	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1882	0	0	1859	0	0	1789	0	0	1761	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-15-2023



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	120	1	0	270	29	8	0	0	19	0	5
Future Volume (vph)	0	120	1	0	270	29	8	0	0	19	0	5
Peak Hour 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
Hourly flow rate (vph)	0	120	1	0	270	29	8	0	0	19	0	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	121	299	8	24
Volume Left (vph)	0	0	8	19
Volume Right (vph)	1	29	0	5
Hadj (s)	0.03	-0.02	0.23	0.07
Departure Headway (s)	4.3	4.1	5.1	4.9
Degree Utilization, x	0.14	0.34	0.01	0.03
Capacity (veh/h)	818	871	648	670
Control Delay (s)	8.0	9.2	8.1	8.0
Approach Delay (s)	8.0	9.2	8.1	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	34.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
14: Street JJ & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.977						0.985			0.963	
Flt Protected					0.996			0.964				
Satd. Flow (prot)	0	1840	0	0	1876	0	0	1788	0	0	1814	0
Flt Permitted					0.996			0.964				
Satd. Flow (perm)	0	1840	0	0	1876	0	0	1788	0	0	1814	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	125	26	19	242	0	27	5	4	0	24	9
Future Volume (vph)	1	125	26	19	242	0	27	5	4	0	24	9
Peak Hour 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
Hourly flow rate (vph)	1	125	26	19	242	0	27	5	4	0	24	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	152	261	36	33
Volume Left (vph)	1	19	27	0
Volume Right (vph)	26	0	4	9
Hadj (s)	-0.07	0.05	0.12	-0.13
Departure Headway (s)	4.3	4.3	5.0	4.7
Degree Utilization, x	0.18	0.31	0.05	0.04
Capacity (veh/h)	816	815	662	688
Control Delay (s)	8.2	9.2	8.2	8.0
Approach Delay (s)	8.2	9.2	8.2	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.7			
Level of Service	A			
Intersection Capacity Utilization	45.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
15: Street I & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.993						0.975			0.958	
Flt Protected					0.994			0.966				
Satd. Flow (prot)	0	1870	0	0	1872	0	0	1774	0	0	1804	0
Flt Permitted					0.994			0.966				
Satd. Flow (perm)	0	1870	0	0	1872	0	0	1774	0	0	1804	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	116	6	29	210	0	27	4	7	0	20	9
Future Volume (vph)	1	116	6	29	210	0	27	4	7	0	20	9
Peak Hour 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
Hourly flow rate (vph)	1	116	6	29	210	0	27	4	7	0	20	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	123	239	38	29
Volume Left (vph)	1	29	27	0
Volume Right (vph)	6	0	7	9
Hadj (s)	0.01	0.06	0.07	-0.15
Departure Headway (s)	4.3	4.3	4.8	4.6
Degree Utilization, x	0.15	0.28	0.05	0.04
Capacity (veh/h)	809	830	690	713
Control Delay (s)	8.1	8.9	8.1	7.8
Approach Delay (s)	8.1	8.9	8.1	7.8
Approach LOS	A	A	A	A

Intersection Summary					
Delay	8.5				
Level of Service	A				
Intersection Capacity Utilization	41.2%	ICU Level of Service	A		
Analysis Period (min)	15				

Lanes and Geometrics
18: Humber Station Rd & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.923			0.989			0.983			0.994	
Flt Protected		0.999			0.980			0.973			0.995	
Satd. Flow (prot)	0	1737	0	0	1825	0	0	1801	0	0	1863	0
Flt Permitted		0.999			0.980			0.973			0.995	
Satd. Flow (perm)	0	1737	0	0	1825	0	0	1801	0	0	1863	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			361.3			173.8	
Travel Time (s)		29.2			9.5			26.0			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	75	102	60	75	12	100	57	22	19	166	9
Future Volume (vph)	3	75	102	60	75	12	100	57	22	19	166	9
Peak Hour 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
Hourly flow rate (vph)	3	75	102	60	75	12	100	57	22	19	166	9

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	180	147	179	194
Volume Left (vph)	3	60	100	19
Volume Right (vph)	102	12	22	9
Hadj (s)	-0.30	0.07	0.07	0.03
Departure Headway (s)	4.8	5.2	5.1	5.0
Degree Utilization, x	0.24	0.21	0.25	0.27
Capacity (veh/h)	687	634	656	663
Control Delay (s)	9.3	9.6	9.8	9.9
Approach Delay (s)	9.3	9.6	9.8	9.9
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.6			
Level of Service	A			
Intersection Capacity Utilization	58.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.92			0.94		0.95		0.86	0.91	1.00	
Frt		0.875			0.996				0.850			
Flt Protected		0.998			0.954		0.950			0.950		
Satd. Flow (prot)	0	1520	0	0	1783	0	1789	1883	1601	1789	1883	0
Flt Permitted		0.983			0.641		0.472			0.616		
Satd. Flow (perm)	0	1491	0	0	1132	0	844	1883	1383	1061	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			2				385			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		140.6			116.4			153.1			361.3	
Travel Time (s)		10.1			8.4			11.0			26.0	

Intersection Summary	
Area Type:	Other

Timings
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	6	3	177	1	40	228	385	1	439
Future Volume (vph)	6	3	177	1	40	228	385	1	439
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	8	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	38.0	38.0	38.0	38.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	42.2%	42.2%	42.2%	42.2%	57.8%	57.8%	57.8%	57.8%	57.8%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)		19.1		19.1	58.9	58.9	58.9	58.9	58.9
Actuated g/C Ratio		0.21		0.21	0.65	0.65	0.65	0.65	0.65
v/c Ratio		0.31		0.76	0.07	0.18	0.37	0.00	0.36
Control Delay		8.0		51.8	8.1	7.7	3.2	8.0	9.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		8.0		51.8	8.1	7.7	3.2	8.0	9.1
LOS		A		D	A	A	A	A	A
Approach Delay		8.0		51.8		5.1			9.1
Approach LOS		A		D		A			A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.76		
Intersection Signal Delay: 12.7	Intersection LOS: B	
Intersection Capacity Utilization 77.1%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 48: Humber Station Rd & Street E

Queues
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	127	183	40	228	385	1	440
v/c Ratio	0.31	0.76	0.07	0.18	0.37	0.00	0.36
Control Delay	8.0	51.8	8.1	7.7	3.2	8.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.0	51.8	8.1	7.7	3.2	8.0	9.1
Queue Length 50th (m)	1.3	30.8	2.5	15.3	1.0	0.1	31.6
Queue Length 95th (m)	13.6	48.6	8.1	30.2	12.7	0.8	63.2
Internal Link Dist (m)	116.6	92.4		129.1			337.3
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	606	403	552	1233	1038	694	1233
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	0.21	0.45	0.07	0.18	0.37	0.00	0.36

Intersection Summary

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	3	118	177	1	5	40	228	385	1	439	1
Future Volume (vph)	6	3	118	177	1	5	40	228	385	1	439	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.92			1.00		1.00	1.00	0.86	1.00	1.00	
Flpb, ped/bikes		1.00			0.95		0.94	1.00	1.00	0.91	1.00	
Frt		0.87			1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1513			1689		1687	1883	1383	1635	1882	
Flt Permitted		0.98			0.64		0.47	1.00	1.00	0.62	1.00	
Satd. Flow (perm)		1491			1135		839	1883	1383	1061	1882	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	6	3	118	177	1	5	40	228	385	1	439	1
RTOR Reduction (vph)	0	93	0	0	2	0	0	0	133	0	0	0
Lane Group Flow (vph)	0	34	0	0	181	0	40	228	252	1	440	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		19.1			19.1		58.9	58.9	58.9	58.9	58.9	
Effective Green, g (s)		19.1			19.1		58.9	58.9	58.9	58.9	58.9	
Actuated g/C Ratio		0.21			0.21		0.65	0.65	0.65	0.65	0.65	
Clearance Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		316			240		549	1232	905	694	1231	
v/s Ratio Prot								0.12			c0.23	
v/s Ratio Perm		0.02			c0.16		0.05		0.18	0.00		
v/c Ratio		0.11			0.76		0.07	0.19	0.28	0.00	0.36	
Uniform Delay, d1		28.6			33.3		5.6	6.1	6.6	5.4	7.0	
Progression Factor		1.00			1.00		1.02	1.00	2.03	1.00	1.00	
Incremental Delay, d2		0.2			12.7		0.3	0.3	0.8	0.0	0.8	
Delay (s)		28.7			46.0		6.0	6.5	14.1	5.4	7.8	
Level of Service		C			D		A	A	B	A	A	
Approach Delay (s)		28.7			46.0			10.9			7.8	
Approach LOS		C			D			B			A	

Intersection Summary					
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service		B	
HCM 2000 Volume to Capacity ratio	0.45				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)		12.0	
Intersection Capacity Utilization	77.1%	ICU Level of Service		D	
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.94	0.99		0.97		0.92	0.96	0.99		0.97	1.00	
Frt		0.975				0.850		0.975			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1811	0	1789	1883	1601	1789	3441	0	1789	3552	0
Flt Permitted	0.687			0.248			0.355			0.430		
Satd. Flow (perm)	1215	1811	0	453	1883	1470	645	3441	0	786	3552	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				133		32			3	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			153.1	
Travel Time (s)		5.9			58.6			14.0			11.0	

Intersection Summary	
Area Type:	Other

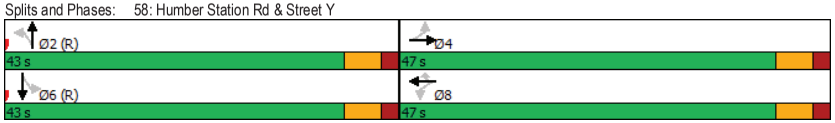
Timings
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	41	361	130	108	133	74	461	93	681
Future Volume (vph)	41	361	130	108	133	74	461	93	681
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4		8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	47.0	47.0	47.0	47.0	47.0	43.0	43.0	43.0	43.0
Total Split (%)	52.2%	52.2%	52.2%	52.2%	52.2%	47.8%	47.8%	47.8%	47.8%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	27.1	27.1	27.1	27.1	27.1	50.9	50.9	50.9	50.9
Actuated g/C Ratio	0.30	0.30	0.30	0.30	0.30	0.57	0.57	0.57	0.57
v/c Ratio	0.11	0.78	0.96	0.19	0.25	0.20	0.28	0.21	0.35
Control Delay	20.7	37.2	98.5	22.1	4.7	13.6	10.7	15.5	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	37.2	98.5	22.1	4.7	13.6	10.7	15.5	14.5
LOS	C	D	F	C	A	B	B	B	B
Approach Delay		35.8		42.6			11.1		14.6
Approach LOS		D		D			B		B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.96		
Intersection Signal Delay: 22.6	Intersection LOS: C	
Intersection Capacity Utilization 74.9%	ICU Level of Service D	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y



Queues
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	41	433	130	108	133	74	555	93	699
v/c Ratio	0.11	0.78	0.96	0.19	0.25	0.20	0.28	0.21	0.35
Control Delay	20.7	37.2	98.5	22.1	4.7	13.6	10.7	15.5	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.7	37.2	98.5	22.1	4.7	13.6	10.7	15.5	14.5
Queue Length 50th (m)	5.3	68.4	22.8	14.3	0.0	6.0	23.4	10.0	42.2
Queue Length 95th (m)	11.1	88.0	#50.3	22.7	10.7	16.0	38.5	25.8	69.6
Internal Link Dist (m)		57.8		789.2			170.3		129.1
Turn Bay Length (m)	45.0		25.0		25.0	50.0		50.0	
Base Capacity (vph)	553	833	206	857	742	364	1960	444	2011
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	0.07	0.52	0.63	0.13	0.18	0.20	0.28	0.21	0.35

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	361	72	130	108	133	74	461	94	93	681	18
Future Volume (vph)	41	361	72	130	108	133	74	461	94	93	681	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.94	1.00		0.98	1.00	1.00	0.96	1.00		0.97	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1680	1812		1745	1883	1470	1718	3439		1733	3552	
Flt Permitted	0.69	1.00		0.25	1.00	1.00	0.36	1.00		0.43	1.00	
Satd. Flow (perm)	1215	1812		456	1883	1470	642	3439		785	3552	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	361	72	130	108	133	74	461	94	93	681	18
RTOR Reduction (vph)	0	10	0	0	0	93	0	14	0	0	1	0
Lane Group Flow (vph)	41	423	0	130	108	40	74	541	0	93	698	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	27.1	27.1		27.1	27.1	27.1	50.9	50.9		50.9	50.9	
Effective Green, g (s)	27.1	27.1		27.1	27.1	27.1	50.9	50.9		50.9	50.9	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.57	0.57		0.57	0.57	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	365	545		137	566	442	363	1944		443	2008	
v/s Ratio Prot		0.23			0.06			0.16			c0.20	
v/s Ratio Perm	0.03			c0.28		0.03	0.12			0.12		
v/c Ratio	0.11	0.78		0.95	0.19	0.09	0.20	0.28		0.21	0.35	
Uniform Delay, d1	22.7	28.7		30.8	23.3	22.6	9.6	10.1		9.6	10.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.97	0.97		1.17	1.19	
Incremental Delay, d2	0.1	6.8		60.6	0.2	0.1	1.3	0.4		1.0	0.5	
Delay (s)	22.9	35.5		91.4	23.5	22.7	10.6	10.1		12.3	13.0	
Level of Service	C	D		F	C	C	B	B		B	B	
Approach Delay (s)		34.4			47.0			10.2			13.0	
Approach LOS		C			D			B			B	

Intersection Summary

HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C		
HCM 2000 Volume to Capacity ratio	0.56				
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0		
Intersection Capacity Utilization	74.9%	ICU Level of Service	D		
Analysis Period (min)	15				

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.987	
Flt Protected					0.957	
Satd. Flow (prot)	0	1883	1853	0	1779	0
Flt Permitted					0.957	
Satd. Flow (perm)	0	1883	1853	0	1779	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	117	284	38	47	5
Future Volume (vph)	0	117	284	38	47	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	117	284	38	47	5

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	117	322	52
Volume Left (vph)	0	0	47
Volume Right (vph)	0	38	5
Hadj (s)	0.03	-0.04	0.16
Departure Headway (s)	4.4	4.1	5.0
Degree Utilization, x	0.14	0.37	0.07
Capacity (veh/h)	796	849	660
Control Delay (s)	8.1	9.5	8.4
Approach Delay (s)	8.1	9.5	8.4
Approach LOS	A	A	A

Intersection Summary				
Delay	9.1			
Level of Service	A			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
64: Street JJ & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991			0.994			0.945			0.991	
Flt Protected					0.994			0.988			0.994	
Satd. Flow (prot)	0	1866	0	0	1861	0	0	1758	0	0	1855	0
Flt Permitted					0.994			0.988			0.994	
Satd. Flow (perm)	0	1866	0	0	1861	0	0	1758	0	0	1855	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	221	15	43	284	16	36	53	62	32	217	17
Future Volume (vph)	2	221	15	43	284	16	36	53	62	32	217	17
Peak Hour 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
Hourly flow rate (vph)	2	221	15	43	284	16	36	53	62	32	217	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	238	343	151	266
Volume Left (vph)	2	43	36	32
Volume Right (vph)	15	16	62	17
Hadj (s)	0.00	0.03	-0.16	0.02
Departure Headway (s)	5.8	5.6	6.0	5.9
Degree Utilization, x	0.38	0.54	0.25	0.44
Capacity (veh/h)	565	599	517	556
Control Delay (s)	12.4	15.0	11.0	13.4
Approach Delay (s)	12.4	15.0	11.0	13.4
Approach LOS	B	C	B	B

Intersection Summary				
Delay	13.3			
Level of Service	B			
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
65: Street I & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt		0.985			0.990			0.995			0.993	
Flt Protected					0.997			0.987			0.992	
Satd. Flow (prot)	0	1855	0	0	1859	0	0	1850	0	0	1855	0
Flt Permitted					0.997			0.987			0.992	
Satd. Flow (perm)	0	1855	0	0	1859	0	0	1850	0	0	1855	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	296	37	20	265	23	22	61	3	54	250	17
Future Volume (vph)	2	296	37	20	265	23	22	61	3	54	250	17
Peak Hour 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
Hourly flow rate (vph)	2	296	37	20	265	23	22	61	3	54	250	17

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	335	308	86	321
Volume Left (vph)	2	20	22	54
Volume Right (vph)	37	23	3	17
Hadj (s)	-0.03	0.00	0.06	0.04
Departure Headway (s)	5.8	5.8	6.6	6.0
Degree Utilization, x	0.54	0.50	0.16	0.54
Capacity (veh/h)	588	577	446	558
Control Delay (s)	15.2	14.5	10.8	15.7
Approach Delay (s)	15.2	14.5	10.8	15.7
Approach LOS	C	B	B	C

Intersection Summary				
Delay	14.8			
Level of Service	B			
Intersection Capacity Utilization	56.9%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
84: Street JJ & Street EE

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.939						0.988				
Flt Protected					0.955			0.998				
Satd. Flow (prot)	0	1769	0	0	1799	0	0	1857	0	0	1883	0
Flt Permitted					0.955			0.998				
Satd. Flow (perm)	0	1769	0	0	1799	0	0	1857	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		174.8			275.5			262.0			229.7	
Travel Time (s)		12.6			19.8			18.9			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
84: Street JJ & Street EE

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	16	13	36	2	0	3	77	8	0	316	0
Future Volume (Veh/h)	0	16	13	36	2	0	3	77	8	0	316	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	16	13	36	2	0	3	77	8	0	316	0
Pedestrians		50			50			50				
Lane Width (m)		3.7			3.7			3.7				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		4			4			4				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								262				
pX, platoon unblocked												
vC, conflicting volume	454	507	416	524	503	131	366			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	454	507	416	524	503	131	366			135		
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	96	98	90	100	100	100			100		
cM capacity (veh/h)	460	428	583	377	430	879	1141			1387		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	29	38	88	316
Volume Left	0	36	3	0
Volume Right	13	0	8	0
cSH	486	380	1141	1387
Volume to Capacity	0.06	0.10	0.00	0.00
Queue Length 95th (m)	1.5	2.6	0.1	0.0
Control Delay (s)	12.9	15.5	0.3	0.0
Lane LOS	B	C	A	
Approach Delay (s)	12.9	15.5	0.3	0.0
Approach LOS	B	C		

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
85: Street I & Street EE

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.911										
Flt Protected								0.996				
Satd. Flow (prot)	0	1716	0	0	1883	0	0	1876	0	0	1883	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1716	0	0	1883	0	0	1876	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.5			332.9			217.2			229.8	
Travel Time (s)		19.8			24.0			15.6			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
85: Street I & Street EE

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	16	31	0	2	0	7	83	0	0	340	0
Future Volume (Veh/h)	0	16	31	0	2	0	7	83	0	0	340	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	16	31	0	2	0	7	83	0	0	340	0
Pedestrians		50			50			50			50	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		4			4			4			4	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								342				
pX, platoon unblocked												
vC, conflicting volume	538	537	440	576	537	183	390			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	538	537	440	576	537	183	390			133		
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	96	95	100	100	100	99			100		
cM capacity (veh/h)	386	410	565	335	410	787	1118			1390		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	47	2	90	340
Volume Left	0	0	7	0
Volume Right	31	0	0	0
cSH	501	410	1118	1390
Volume to Capacity	0.09	0.00	0.01	0.00
Queue Length 95th (m)	2.4	0.1	0.1	0.0
Control Delay (s)	12.9	13.8	0.7	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.9	13.8	0.7	0.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	36.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	3579	3577	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	3579	3577	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	16	618	888
Future Volume (vph)	16	618	888
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	27.0	63.0	63.0
Total Split (%)	30.0%	70.0%	70.0%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	11.1	74.0	74.0
Actuated g/C Ratio	0.12	0.82	0.82
v/c Ratio	0.07	0.21	0.30
Control Delay	31.4	3.9	3.1
Queue Delay	0.0	0.0	0.0
Total Delay	31.4	3.9	3.1
LOS	C	A	A
Approach Delay	31.4	3.9	3.1
Approach LOS	C	A	A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 50		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.30		
Intersection Signal Delay: 3.7	Intersection LOS: A	
Intersection Capacity Utilization 38.8%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	16	618	890
v/c Ratio	0.07	0.21	0.30
Control Delay	31.4	3.9	3.1
Queue Delay	0.0	0.0	0.0
Total Delay	31.4	3.9	3.1
Queue Length 50th (m)	2.8	10.5	12.5
Queue Length 95th (m)	7.7	29.2	29.5
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	417	2941	2939
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.04	0.21	0.30

Intersection Summary

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-15-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	0	0	618	888	2
Future Volume (vph)	16	0	0	618	888	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	1.00			0.95	0.95	
Frpb, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			3579	3576	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			3579	3576	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	16	0	0	618	888	2
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	16	0	0	618	890	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	8.8			69.2	69.2	
Effective Green, g (s)	8.8			69.2	69.2	
Actuated g/C Ratio	0.10			0.77	0.77	
Clearance Time (s)	6.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	174			2751	2749	
v/s Ratio Prot	c0.01			0.17	c0.25	
v/s Ratio Perm						
v/c Ratio	0.09			0.22	0.32	
Uniform Delay, d1	37.0			2.9	3.2	
Progression Factor	1.00			1.00	0.69	
Incremental Delay, d2	0.2			0.2	0.3	
Delay (s)	37.2			3.1	2.5	
Level of Service	D			A	A	
Approach Delay (s)	37.2			3.1	2.5	
Approach LOS	D			A	A	

Intersection Summary				
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	139.9		25.0	199.9		50.0	175.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	0.0			7.6			7.6			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.96		0.86	0.94		0.86	0.96		0.91	0.99		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	3318	1585	1681	3380	1633	1261	3650	1432	1681	3650	1633
Flt Permitted	0.331			0.414			0.436			0.128		
Satd. Flow (perm)	524	3318	1359	692	3380	1400	556	3650	1310	223	3650	1493
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			105			230			144
Link Speed (k/h)		48			50			50			50	
Link Distance (m)		363.2			207.4			628.6			578.8	
Travel Time (s)		27.2			14.9			45.3			41.7	

Intersection Summary	
Area Type:	Other

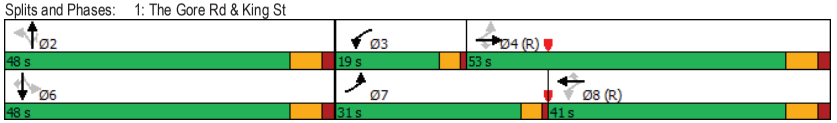
Timings
1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	581	20	213	600	101	57	861	310	38	416	144
Future Volume (vph)	284	581	20	213	600	101	57	861	310	38	416	144
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6	18.6	18.6
Minimum Split (s)	11.0	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Total Split (s)	31.0	53.0	53.0	19.0	41.0	41.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	25.8%	44.2%	44.2%	15.8%	34.2%	34.2%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	73.0	55.1	55.1	65.4	50.8	50.8	35.7	35.7	35.7	35.7	35.7	35.7
Actuated g/C Ratio	0.61	0.46	0.46	0.54	0.42	0.42	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.62	0.38	0.03	0.45	0.42	0.15	0.35	0.79	0.56	0.58	0.38	0.26
Control Delay	18.2	23.7	0.1	15.0	27.6	5.8	37.6	44.3	13.0	60.8	27.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	23.7	0.1	15.0	27.6	5.8	37.6	44.3	13.0	60.8	27.3	3.3
LOS	B	C	A	B	C	A	D	D	B	E	C	A
Approach Delay		21.4			22.3			36.1			23.7	
Approach LOS		C			C			D			C	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
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: 0.79		
Intersection Signal Delay: 27.0	Intersection LOS: C	
Intersection Capacity Utilization 94.9%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 1: The Gore Rd & King St



Queues

1: The Gore Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	284	581	20	213	600	101	57	861	310	38	416	144
v/c Ratio	0.62	0.38	0.03	0.45	0.42	0.15	0.35	0.79	0.56	0.58	0.38	0.26
Control Delay	18.2	23.7	0.1	15.0	27.6	5.8	37.6	44.3	13.0	60.8	27.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	23.7	0.1	15.0	27.6	5.8	37.6	44.3	13.0	60.8	27.3	3.3
Queue Length 50th (m)	30.9	48.2	0.0	21.7	53.0	0.0	10.9	101.6	14.6	6.4	37.1	3.1
Queue Length 95th (m)	54.7	73.2	0.0	39.8	85.4	12.3	22.1	114.9	39.7	m19.7	41.8	7.4
Internal Link Dist (m)		339.2			183.4			604.6			554.8	
Turn Bay Length (m)				139.9		25.0	199.9		50.0	175.0		50.0
Base Capacity (vph)	555	1532	665	516	1429	652	193	1269	605	77	1269	613
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	0.51	0.38	0.03	0.41	0.42	0.15	0.30	0.68	0.51	0.49	0.33	0.23

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: The Gore Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	581	20	213	600	101	57	861	310	38	416	144
Future Volume (vph)	284	581	20	213	600	101	57	861	310	38	416	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	1.00	0.91	1.00	1.00	0.91
Flpb, ped/bikes	0.99	1.00	1.00	0.98	1.00	1.00	0.96	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1543	3318	1359	1647	3380	1400	1213	3650	1310	1660	3650	1493
Flt Permitted	0.33	1.00	1.00	0.41	1.00	1.00	0.44	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	537	3318	1359	717	3380	1400	557	3650	1310	224	3650	1493
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	284	581	20	213	600	101	57	861	310	38	416	144
RTOR Reduction (vph)	0	0	11	0	0	58	0	0	162	0	0	101
Lane Group Flow (vph)	284	581	9	213	600	43	57	861	148	38	416	43
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	71.1	55.1	55.1	62.7	50.7	50.7	35.7	35.7	35.7	35.7	35.7	35.7
Effective Green, g (s)	71.1	55.1	55.1	62.7	50.7	50.7	35.7	35.7	35.7	35.7	35.7	35.7
Actuated g/C Ratio	0.59	0.46	0.46	0.52	0.42	0.42	0.30	0.30	0.30	0.30	0.30	0.30
Clearance Time (s)	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
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	3.0
Lane Grp Cap (vph)	455	1523	624	467	1428	591	165	1085	389	66	1085	444
v/s Ratio Prot	c0.09	0.18		0.05	0.18			c0.24			0.11	
v/s Ratio Perm	c0.28		0.01	0.19		0.03	0.10		0.11	0.17		0.03
v/c Ratio	0.62	0.38	0.01	0.46	0.42	0.07	0.35	0.79	0.38	0.58	0.38	0.10
Uniform Delay, d1	13.3	21.3	17.7	15.7	24.3	20.6	33.0	38.8	33.4	35.7	33.4	30.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.82	0.81	0.50
Incremental Delay, d2	2.7	0.7	0.0	0.7	0.9	0.2	1.3	4.1	0.6	10.8	0.2	0.1
Delay (s)	15.9	22.0	17.7	16.5	25.2	20.9	34.3	42.8	34.0	40.1	27.2	15.5
Level of Service	B	C	B	B	C	C	C	D	C	D	C	B
Approach Delay (s)		20.0			22.7			40.2			25.2	
Approach LOS		B			C			D			C	

Intersection Summary				
HCM 2000 Control Delay	28.4	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.70			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2	
Intersection Capacity Utilization	94.9%	ICU Level of Service	F	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	50.0		25.0	50.0		25.0	50.0		50.0	50.0		50.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.6			7.6			7.5			7.6		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.98		0.91	0.97		0.91	0.97		0.86	0.96		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1765	3349	1555	1697	3476	1633	1089	3650	1002	1226	3444	1306
Flt Permitted	0.209			0.410			0.229			0.290		
Satd. Flow (perm)	381	3349	1422	710	3476	1493	255	3650	859	358	3444	1195
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128			176			131			194
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		329.7			840.4			348.5			347.2	
Travel Time (s)		23.7			60.5			25.1			25.0	

Intersection Summary	
Area Type:	Other

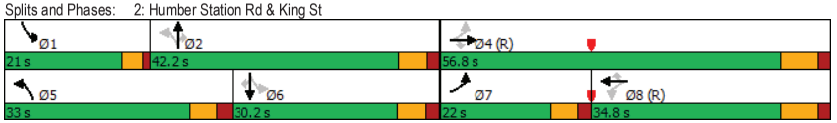
Timings
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	637	202	18	638	256	261	710	68	179	435	194
Future Volume (vph)	279	637	202	18	638	256	261	710	68	179	435	194
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	8	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	5.0	14.4	14.4
Minimum Split (s)	11.0	31.4	31.4	31.4	31.4	31.4	11.2	30.0	30.0	11.0	30.2	30.2
Total Split (s)	22.0	56.8	56.8	34.8	34.8	34.8	33.0	42.2	42.2	21.0	30.2	30.2
Total Split (%)	18.3%	47.3%	47.3%	29.0%	29.0%	29.0%	27.5%	35.2%	35.2%	17.5%	25.2%	25.2%
Yellow Time (s)	4.0	5.4	5.4	5.4	5.4	5.4	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.2	2.0	2.0	1.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	7.4	7.4	7.4	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None	None
Act Effct Green (s)	55.9	54.5	54.5	32.2	32.2	32.2	51.9	32.6	32.6	38.1	20.4	20.4
Actuated g/C Ratio	0.47	0.45	0.45	0.27	0.27	0.27	0.43	0.27	0.27	0.32	0.17	0.17
v/c Ratio	0.76	0.42	0.28	0.09	0.68	0.48	0.91	0.72	0.21	0.80	0.74	0.53
Control Delay	37.3	24.1	9.7	38.3	45.2	16.5	63.3	43.7	1.4	49.2	55.3	11.5
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	37.3	24.1	9.7	38.3	45.2	16.5	63.3	43.7	1.4	49.2	55.3	11.5
LOS	D	C	A	D	D	B	E	D	A	D	E	B
Approach Delay		24.8			37.0			45.8			43.4	
Approach LOS		C			D			D			D	

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green		
Natural Cycle: 95		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.91		
Intersection Signal Delay: 37.2	Intersection LOS: D	
Intersection Capacity Utilization 89.9%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 2: Humber Station Rd & King St



Queues
2: Humber Station Rd & King St

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	279	637	202	18	638	256	261	710	68	179	435	194
v/c Ratio	0.76	0.42	0.28	0.09	0.68	0.48	0.91	0.72	0.21	0.80	0.74	0.53
Control Delay	37.3	24.1	9.7	38.3	45.2	16.5	63.3	43.7	1.4	49.2	55.3	11.5
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	37.3	24.1	9.7	38.3	45.2	16.5	63.3	43.7	1.4	49.2	55.3	11.5
Queue Length 50th (m)	43.3	55.3	10.4	3.5	78.2	16.1	46.2	83.0	0.0	26.9	53.8	0.0
Queue Length 95th (m)	#79.8	75.6	28.2	10.2	100.4	43.1	#91.8	100.3	0.0	#52.5	69.6	20.8
Internal Link Dist (m)		305.7			816.4			324.5			323.2	
Turn Bay Length (m)	50.0		25.0	50.0		25.0	50.0		50.0	50.0		50.0
Base Capacity (vph)	372	1520	715	190	932	529	296	1101	350	240	688	394
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	0.75	0.42	0.28	0.09	0.68	0.48	0.88	0.64	0.19	0.75	0.63	0.49

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	637	202	18	638	256	261	710	68	179	435	194
Future Volume (vph)	279	637	202	18	638	256	261	710	68	179	435	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Total Lost time (s)	6.0	7.4	7.4	7.4	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.91	1.00	1.00	0.86	1.00	1.00	0.91
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	0.99	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1759	3349	1422	1644	3476	1493	1084	3650	859	1213	3444	1195
Flt Permitted	0.21	1.00	1.00	0.41	1.00	1.00	0.23	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	387	3349	1422	710	3476	1493	261	3650	859	370	3444	1195
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	279	637	202	18	638	256	261	710	68	179	435	194
RTOR Reduction (vph)	0	0	70	0	0	129	0	0	50	0	0	161
Lane Group Flow (vph)	279	637	132	18	638	127	261	710	18	179	435	33
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	54.5	54.5	54.5	32.2	32.2	32.2	52.1	32.6	32.6	35.9	20.4	20.4
Effective Green, g (s)	54.5	54.5	54.5	32.2	32.2	32.2	52.1	32.6	32.6	35.9	20.4	20.4
Actuated g/C Ratio	0.45	0.45	0.45	0.27	0.27	0.27	0.43	0.27	0.27	0.30	0.17	0.17
Clearance Time (s)	6.0	7.4	7.4	7.4	7.4	7.4	6.2	6.0	6.0	4.0	6.2	6.2
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	3.0
Lane Grp Cap (vph)	362	1521	645	190	932	400	286	991	233	219	585	203
v/s Ratio Prot	c0.10	0.19			0.18		c0.19	0.19		0.11	0.13	
v/s Ratio Perm	c0.25		0.09	0.03		0.09	c0.20		0.02	0.14		0.03
v/c Ratio	0.77	0.42	0.20	0.09	0.68	0.32	0.91	0.72	0.08	0.82	0.74	0.16
Uniform Delay, d1	23.6	22.1	19.7	33.0	39.3	35.1	26.9	39.5	32.5	34.7	47.3	42.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.7	0.9	0.7	1.0	4.1	2.1	31.3	2.5	0.1	20.5	5.1	0.4
Delay (s)	33.3	22.9	20.4	33.9	43.4	37.2	58.2	42.0	32.7	55.2	52.4	42.9
Level of Service	C	C	C	C	D	D	E	D	C	E	D	D
Approach Delay (s)		25.1			41.5			45.5			50.7	
Approach LOS		C			D			D			D	

Intersection Summary

HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	25.8
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
6: King St & Street JJ

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.98			0.84	0.94	
Frt				0.850	0.958	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	3579	3579	1601	1705	0
Flt Permitted	0.268				0.967	
Satd. Flow (perm)	477	3579	3579	1338	1632	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				106	23	
Link Speed (k/h)		50	50		50	
Link Distance (m)		110.9	300.5		262.0	
Travel Time (s)		8.0	21.6		18.9	

Intersection Summary	
Area Type:	Other

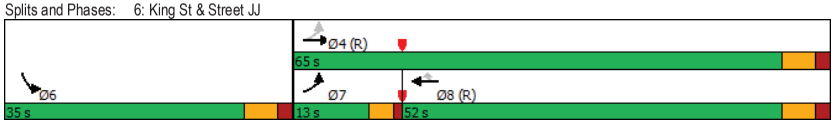
Timings
6: King St & Street JJ

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	95	848	862	174	160
Future Volume (vph)	95	848	862	174	160
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	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0
Total Split (s)	13.0	65.0	52.0	52.0	35.0
Total Split (%)	13.0%	65.0%	52.0%	52.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	C-Min	None
Act Effct Green (s)	71.6	69.6	60.2	60.2	18.4
Actuated g/C Ratio	0.72	0.70	0.60	0.60	0.18
v/c Ratio	0.22	0.34	0.40	0.21	0.70
Control Delay	6.5	7.2	8.6	3.2	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	7.2	8.6	3.2	45.0
LOS	A	A	A	A	D
Approach Delay		7.1	7.7		45.0
Approach LOS		A	A		D

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 11.4	Intersection LOS: B
Intersection Capacity Utilization 61.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	95	848	862	174	233
v/c Ratio	0.22	0.34	0.40	0.21	0.70
Control Delay	6.5	7.2	8.6	3.2	45.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	7.2	8.6	3.2	45.0
Queue Length 50th (m)	4.8	30.6	28.3	2.3	40.4
Queue Length 95th (m)	11.9	50.2	36.0	7.1	61.5
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	454	2490	2155	847	510
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	0.21	0.34	0.40	0.21	0.46

Intersection Summary

HCM Signalized Intersection Capacity Analysis
6: King St & Street JJ

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	95	848	862	174	160	73
Future Volume (vph)	95	848	862	174	160	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.84	0.98	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1719	3579	3579	1338	1704	
Flt Permitted	0.27	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	485	3579	3579	1338	1704	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	95	848	862	174	160	73
RTOR Reduction (vph)	0	0	0	43	19	0
Lane Group Flow (vph)	95	848	862	131	214	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	69.6	69.6	59.4	59.4	18.4	
Effective Green, g (s)	69.6	69.6	59.4	59.4	18.4	
Actuated g/C Ratio	0.70	0.70	0.59	0.59	0.18	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	414	2490	2125	794	313	
v/s Ratio Prot	0.01	c0.24	c0.24		c0.13	
v/s Ratio Perm	0.15			0.10		
v/c Ratio	0.23	0.34	0.41	0.16	0.68	
Uniform Delay, d1	5.7	6.1	10.9	9.1	38.1	
Progression Factor	1.00	1.00	0.66	0.51	1.00	
Incremental Delay, d2	0.3	0.4	0.5	0.4	6.1	
Delay (s)	6.0	6.4	7.7	5.1	44.2	
Level of Service	A	A	A	A	D	
Approach Delay (s)		6.4	7.3		44.2	
Approach LOS		A	A		D	

Intersection Summary				
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.47			
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0	
Intersection Capacity Utilization	61.4%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor				0.84	0.94	
Frt				0.850	0.957	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	3579	3579	1601	1703	0
Flt Permitted	0.232				0.967	
Satd. Flow (perm)	423	3579	3579	1338	1630	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				97	23	
Link Speed (k/h)		50	50		50	
Link Distance (m)		300.5	329.7		125.2	
Travel Time (s)		21.6	23.7		9.0	

Intersection Summary	
Area Type:	Other

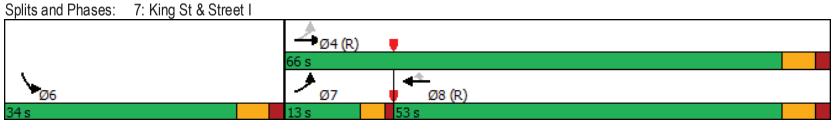
Timings
7: King St & Street I

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Traffic Volume (vph)	96	912	962	174	160
Future Volume (vph)	96	912	962	174	160
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	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0
Total Split (s)	13.0	66.0	53.0	53.0	34.0
Total Split (%)	13.0%	66.0%	53.0%	53.0%	34.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	C-Min	None
Act Effct Green (s)	71.5	69.5	60.2	60.2	18.5
Actuated g/C Ratio	0.72	0.70	0.60	0.60	0.18
v/c Ratio	0.24	0.37	0.45	0.21	0.70
Control Delay	5.4	5.2	13.4	6.3	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	5.2	13.4	6.3	45.1
LOS	A	A	B	A	D
Approach Delay		5.2	12.3		45.1
Approach LOS		A	B		D

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.70		
Intersection Signal Delay: 12.5		Intersection LOS: B
Intersection Capacity Utilization 64.2%		ICU Level of Service C
Analysis Period (min) 15		

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	96	912	962	174	234
v/c Ratio	0.24	0.37	0.45	0.21	0.70
Control Delay	5.4	5.2	13.4	6.3	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	5.2	13.4	6.3	45.1
Queue Length 50th (m)	3.2	22.3	53.0	6.3	40.6
Queue Length 95th (m)	7.8	33.7	84.7	19.8	61.7
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	420	2488	2153	843	493
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	0.37	0.45	0.21	0.47

Intersection Summary

HCM Signalized Intersection Capacity Analysis
7: King St & Street I

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	96	912	962	174	160	74
Future Volume (vph)	96	912	962	174	160	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	0.84	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.96	
Flt Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1723	3579	3579	1338	1703	
Flt Permitted	0.23	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	421	3579	3579	1338	1703	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	96	912	962	174	160	74
RTOR Reduction (vph)	0	0	0	39	19	0
Lane Group Flow (vph)	96	912	962	135	215	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	69.5	69.5	59.3	59.3	18.5	
Effective Green, g (s)	69.5	69.5	59.3	59.3	18.5	
Actuated g/C Ratio	0.70	0.70	0.59	0.59	0.18	
Clearance Time (s)	4.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	373	2487	2122	793	315	
v/s Ratio Prot	0.02	c0.25	c0.27		c0.13	
v/s Ratio Perm	0.16			0.10		
v/c Ratio	0.26	0.37	0.45	0.17	0.68	
Uniform Delay, d1	6.1	6.2	11.3	9.2	38.0	
Progression Factor	0.76	0.69	1.00	1.00	1.00	
Incremental Delay, d2	0.3	0.4	0.7	0.5	6.0	
Delay (s)	5.0	4.7	12.0	9.7	44.0	
Level of Service	A	A	B	A	D	
Approach Delay (s)		4.7	11.7		44.0	
Approach LOS		A	B		D	

Intersection Summary				
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		25.0	0.0	
Storage Lanes	1	0		1	1	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Ped Bike Factor	0.91		1.00	0.81		
Frt	0.976		0.998	0.850		
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1717	0	1781	1521	1730	1883
Flt Permitted	0.960				0.059	
Satd. Flow (perm)	1601	0	1781	1227	107	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	8		2	56		
Link Speed (k/h)	50		50			48
Link Distance (m)	134.7		578.8			211.4
Travel Time (s)	9.7		41.7			15.9

Intersection Summary	
Area Type:	Other

Timings
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Configurations					
Traffic Volume (vph)	170	1184	176	47	472
Future Volume (vph)	170	1184	176	47	472
Turn Type	Prot	NA	Perm	Perm	NA
Protected Phases	8	2			6
Permitted Phases			2	6	
Detector Phase	8	2	2	6	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0	25.0
Total Split (s)	30.0	90.0	90.0	90.0	90.0
Total Split (%)	25.0%	75.0%	75.0%	75.0%	75.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0
Lead/Lag					
Lead-Lag Optimize?					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	18.7	89.3	89.3	89.3	89.3
Actuated g/C Ratio	0.16	0.74	0.74	0.74	0.74
v/c Ratio	0.75	0.91	0.17	0.59	0.34
Control Delay	63.1	43.8	10.3	45.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	43.8	10.3	45.3	6.5
LOS	E	D	B	D	A
Approach Delay	63.1	39.9			10.0
Approach LOS	E	D			B

Intersection Summary		
Cycle Length: 120		
Actuated Cycle Length: 120		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 100		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.91		
Intersection Signal Delay: 34.7	Intersection LOS: C	
Intersection Capacity Utilization 93.3%	ICU Level of Service F	
Analysis Period (min) 15		

Splits and Phases: 8: The Gore Rd & Street Y

Queues
8: The Gore Rd & Street Y

05-15-2023

Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	206	1202	158	47	472
v/c Ratio	0.75	0.91	0.17	0.59	0.34
Control Delay	63.1	43.8	10.3	45.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	43.8	10.3	45.3	6.5
Queue Length 50th (m)	46.8	256.2	11.2	4.6	34.8
Queue Length 95th (m)	70.3	#389.1	m36.4	#30.9	58.1
Internal Link Dist (m)	110.7	554.8			187.4
Turn Bay Length (m)			25.0		
Base Capacity (vph)	349	1325	927	79	1401
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	0.59	0.91	0.17	0.59	0.34

Intersection Summary
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
8: The Gore Rd & Street Y

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	170	36	1184	176	47	472
Future Volume (vph)	170	36	1184	176	47	472
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0	6.0	6.0	6.0
Lane Util. Factor	1.00		0.95	0.95	1.00	1.00
Frpb, ped/bikes	0.97		1.00	0.81	1.00	1.00
Flpb, ped/bikes	1.00		1.00	1.00	1.00	1.00
Frt	0.98		1.00	0.85	1.00	1.00
Flt Protected	0.96		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1719		1780	1227	1730	1883
Flt Permitted	0.96		1.00	1.00	0.06	1.00
Satd. Flow (perm)	1719		1780	1227	108	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	170	36	1184	176	47	472
RTOR Reduction (vph)	7	0	1	14	0	0
Lane Group Flow (vph)	199	0	1201	144	47	472
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	18.7		89.3	89.3	89.3	89.3
Effective Green, g (s)	18.7		89.3	89.3	89.3	89.3
Actuated g/C Ratio	0.16		0.74	0.74	0.74	0.74
Clearance Time (s)	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	267		1324	913	80	1401
v/s Ratio Prot	c0.12		c0.67			0.25
v/s Ratio Perm				0.12	0.43	
v/c Ratio	0.75		0.91	0.16	0.59	0.34
Uniform Delay, d1	48.4		12.1	4.4	7.0	5.2
Progression Factor	1.00		2.65	2.93	1.00	1.00
Incremental Delay, d2	10.8		9.2	0.3	27.9	0.7
Delay (s)	59.2		41.2	13.3	34.8	5.9
Level of Service	E		D	B	C	A
Approach Delay (s)	59.2		38.0			8.5
Approach LOS	E		D			A

Intersection Summary				
HCM 2000 Control Delay	32.7	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.88			
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0	
Intersection Capacity Utilization	93.3%	ICU Level of Service	F	
Analysis Period (min)	15			
c Critical Lane Group				

Lanes and Geometrics
9: The Gore Rd & Street DDD

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865		0.982			
Flt Protected						
Satd. Flow (prot)	1629	0	1850	0	1821	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1850	0	1821	1883
Link Speed (k/h)	50		50			50
Link Distance (m)	209.0		211.4			265.4
Travel Time (s)	15.0		15.2			19.1

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
9: The Gore Rd & Street DDD

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	12	1052	167	0	520
Future Volume (Veh/h)	0	12	1052	167	0	520
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	12	1052	167	0	520
Pedestrians	50		50			50
Lane Width (m)	3.7		3.7			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		4			4
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			212			265
pX, platoon unblocked	0.30	0.28			0.28	
vC, conflicting volume	1756	1236			1269	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2027	565			684	
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	91			100	
cM capacity (veh/h)	18	136			246	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	12	1219	0	520
Volume Left	0	0	0	0
Volume Right	12	167	0	0
cSH	136	1700	1700	1700
Volume to Capacity	0.09	0.72	0.00	0.31
Queue Length 95th (m)	2.2	0.0	0.0	0.0
Control Delay (s)	34.0	0.0	0.0	0.0
Lane LOS	D			
Approach Delay (s)	34.0	0.0	0.0	
Approach LOS	D			

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		84.4%	ICU Level of Service	E
Analysis Period (min)		15		

Lanes and Geometrics
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.4	3.7
Grade (%)	0%		0%			0%
Storage Length (m)	0.0	0.0		0.0	50.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.6	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.90		0.97			
Frt	0.969		0.976			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1709	0	1790	0	1730	1883
Flt Permitted	0.963				0.128	
Satd. Flow (perm)	1574	0	1790	0	233	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	16		23			
Link Speed (k/h)	50		50			50
Link Distance (m)	319.0		265.4			374.2
Travel Time (s)	23.0		19.1			26.9

Intersection Summary	
Area Type:	Other

Timings
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	166	876	53	353
Future Volume (vph)	166	876	53	353
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0	25.0
Total Split (s)	28.0	62.0	62.0	62.0
Total Split (%)	31.1%	68.9%	68.9%	68.9%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	15.8	62.2	62.2	62.2
Actuated g/C Ratio	0.18	0.69	0.69	0.69
v/c Ratio	0.69	0.86	0.33	0.27
Control Delay	43.0	20.7	14.2	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	43.0	20.7	14.2	6.6
LOS	D	C	B	A
Approach Delay	43.0	20.7		7.6
Approach LOS	D	C		A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.86		
Intersection Signal Delay: 20.4	Intersection LOS: C	
Intersection Capacity Utilization 85.6%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 10: The Gore Rd & Street A

Queues
10: The Gore Rd & Street A

05-15-2023

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	215	1064	53	353
v/c Ratio	0.69	0.86	0.33	0.27
Control Delay	43.0	20.7	14.2	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	43.0	20.7	14.2	6.6
Queue Length 50th (m)	33.8	122.2	3.3	20.8
Queue Length 95th (m)	52.9	#264.6	14.2	41.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	429	1244	161	1301
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	0.50	0.86	0.33	0.27

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A

05-15-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	166	49	876	188	53	353
Future Volume (vph)	166	49	876	188	53	353
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frpb, ped/bikes	0.97		0.97		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1709		1790		1730	1883
Flt Permitted	0.96		1.00		0.13	1.00
Satd. Flow (perm)	1709		1790		233	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	166	49	876	188	53	353
RTOR Reduction (vph)	13	0	7	0	0	0
Lane Group Flow (vph)	202	0	1057	0	53	353
Confl. Peds. (#/hr)	50	50		50	50	
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	15.8		62.2		62.2	62.2
Effective Green, g (s)	15.8		62.2		62.2	62.2
Actuated g/C Ratio	0.18		0.69		0.69	0.69
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	300		1237		161	1301
v/s Ratio Prot	c0.12		c0.59			0.19
v/s Ratio Perm					0.23	
v/c Ratio	0.67		0.85		0.33	0.27
Uniform Delay, d1	34.7		10.5		5.6	5.3
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	5.8		7.6		5.4	0.5
Delay (s)	40.5		18.1		10.9	5.8
Level of Service	D		B		B	A
Approach Delay (s)	40.5		18.1			6.5
Approach LOS	D		B			A

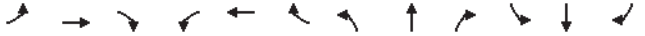
Intersection Summary

HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

05-15-2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.997			0.997						0.973	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1878	0	0	1878	0	0	1789	0	0	1763	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1878	0	0	1878	0	0	1789	0	0	1763	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		319.0			314.6			187.1			204.6	
Travel Time (s)		23.0			22.7			13.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
12: Street VV & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	240	6	0	233	5	5	0	0	4	0	1
Future Volume (vph)	0	240	6	0	233	5	5	0	0	4	0	1
Peak Hour 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
Hourly flow rate (vph)	0	240	6	0	233	5	5	0	0	4	0	1

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	246	238	5	5
Volume Left (vph)	0	0	5	4
Volume Right (vph)	6	5	0	1
Hadj (s)	0.02	0.02	0.23	0.07
Departure Headway (s)	4.2	4.2	5.2	5.0
Degree Utilization, x	0.29	0.28	0.01	0.01
Capacity (veh/h)	849	839	629	643
Control Delay (s)	8.8	8.8	8.2	8.1
Approach Delay (s)	8.8	8.8	8.2	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	31.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
14: Street JJ & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.987						0.968			0.962	
Flt Protected		0.999			0.998			0.978				
Satd. Flow (prot)	0	1857	0	0	1880	0	0	1783	0	0	1812	0
Flt Permitted		0.999			0.998			0.978				
Satd. Flow (perm)	0	1857	0	0	1880	0	0	1783	0	0	1812	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		314.6			275.2			590.8			204.6	
Travel Time (s)		22.7			19.8			42.5			14.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
14: Street JJ & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	206	23	10	207	0	23	15	12	0	13	5
Future Volume (vph)	7	206	23	10	207	0	23	15	12	0	13	5
Peak Hour 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
Hourly flow rate (vph)	7	206	23	10	207	0	23	15	12	0	13	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	236	217	50	18
Volume Left (vph)	7	10	23	0
Volume Right (vph)	23	0	12	5
Hadj (s)	-0.02	0.04	-0.02	-0.13
Departure Headway (s)	4.3	4.4	4.9	4.8
Degree Utilization, x	0.28	0.26	0.07	0.02
Capacity (veh/h)	819	796	667	664
Control Delay (s)	9.0	8.9	8.3	8.0
Approach Delay (s)	9.0	8.9	8.3	8.0
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.8			
Level of Service	A			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
15: Street I & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.992						0.951			0.958	
Flt Protected		0.998			0.996			0.980				
Satd. Flow (prot)	0	1865	0	0	1876	0	0	1755	0	0	1804	0
Flt Permitted		0.998			0.996			0.980				
Satd. Flow (perm)	0	1865	0	0	1876	0	0	1755	0	0	1804	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.2			405.9			599.1			178.2	
Travel Time (s)		19.8			29.2			43.1			12.8	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
15: Street I & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	186	12	16	190	0	21	12	19	0	11	5
Future Volume (vph)	7	186	12	16	190	0	21	12	19	0	11	5
Peak Hour 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
Hourly flow rate (vph)	7	186	12	16	190	0	21	12	19	0	11	5

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	205	206	52	16
Volume Left (vph)	7	16	21	0
Volume Right (vph)	12	0	19	5
Hadj (s)	0.01	0.05	-0.10	-0.15
Departure Headway (s)	4.3	4.3	4.7	4.7
Degree Utilization, x	0.24	0.25	0.07	0.02
Capacity (veh/h)	818	803	697	684
Control Delay (s)	8.7	8.8	8.1	7.8
Approach Delay (s)	8.7	8.8	8.1	7.8
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.6			
Level of Service	A			
Intersection Capacity Utilization	34.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
18: Humber Station Rd & Street A

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			7.5			0.0		
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
Ped Bike Factor												
Frt		0.939			0.978			0.976			0.992	
Flt Protected		0.998			0.989			0.985			0.992	
Satd. Flow (prot)	0	1765	0	0	1822	0	0	1811	0	0	1853	0
Flt Permitted		0.998			0.989			0.985			0.992	
Satd. Flow (perm)	0	1765	0	0	1822	0	0	1811	0	0	1853	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		405.9			132.6			361.3			173.8	
Travel Time (s)		29.2			9.5			26.0			12.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
18: Humber Station Rd & Street A

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	7	87	77	38	109	28	135	233	79	21	95	7
Future Volume (vph)	7	87	77	38	109	28	135	233	79	21	95	7
Peak Hour 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
Hourly flow rate (vph)	7	87	77	38	109	28	135	233	79	21	95	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	171	175	447	123
Volume Left (vph)	7	38	135	21
Volume Right (vph)	77	28	79	7
Hadj (s)	-0.23	-0.02	-0.01	0.03
Departure Headway (s)	5.5	5.7	5.1	5.6
Degree Utilization, x	0.26	0.28	0.63	0.19
Capacity (veh/h)	579	563	677	572
Control Delay (s)	10.5	10.9	16.5	10.0
Approach Delay (s)	10.5	10.9	16.5	10.0
Approach LOS	B	B	C	A

Intersection Summary				
Delay	13.4			
Level of Service	B			
Intersection Capacity Utilization	62.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	25.0		0.0	25.0		0.0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.93			0.94		0.92		0.86		1.00	
Frt		0.895			0.999				0.850		0.997	
Flt Protected		0.996			0.953		0.950			0.950		
Satd. Flow (prot)	0	1572	0	0	1791	0	1789	1883	1601	1789	1873	0
Flt Permitted		0.962			0.701		0.580			0.231		
Satd. Flow (perm)	0	1511	0	0	1238	0	1008	1883	1383	435	1873	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		82			1				386		1	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		140.6			116.4			153.1			361.3	
Travel Time (s)		10.1			8.4			11.0			26.0	

Intersection Summary	
Area Type:	Other

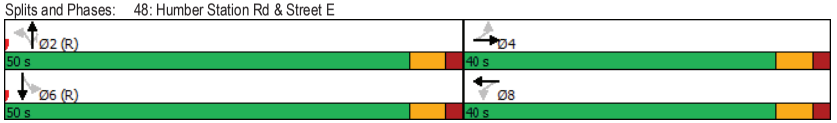
Timings
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	9	14	344	1	151	704	386	5	262
Future Volume (vph)	9	14	344	1	151	704	386	5	262
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2			6
Permitted Phases	4		8		2		2	6	
Detector Phase	4	4	8	8	2	2	2	6	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	40.0	40.0	40.0	40.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	44.4%	44.4%	44.4%	44.4%	55.6%	55.6%	55.6%	55.6%	55.6%
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)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0		6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		29.2		29.2	48.8	48.8	48.8	48.8	48.8
Actuated g/C Ratio		0.32		0.32	0.54	0.54	0.54	0.54	0.54
v/c Ratio		0.19		0.87	0.28	0.69	0.42	0.02	0.26
Control Delay		7.4		49.6	14.3	20.9	3.0	12.2	13.0
Queue Delay		0.0		0.0	0.0	2.3	0.0	0.0	0.0
Total Delay		7.4		49.6	14.3	23.2	3.0	12.2	13.0
LOS		A		D	B	C	A	B	B
Approach Delay		7.4		49.6		15.8			13.0
Approach LOS		A		D		B			B

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 60		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.87		
Intersection Signal Delay: 21.0	Intersection LOS: C	
Intersection Capacity Utilization 82.2%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 48: Humber Station Rd & Street E



Queues
48: Humber Station Rd & Street E

05-15-2023

Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	105	348	151	704	386	5	267
v/c Ratio	0.19	0.87	0.28	0.69	0.42	0.02	0.26
Control Delay	7.4	49.6	14.3	20.9	3.0	12.2	13.0
Queue Delay	0.0	0.0	0.0	2.3	0.0	0.0	0.0
Total Delay	7.4	49.6	14.3	23.2	3.0	12.2	13.0
Queue Length 50th (m)	2.7	56.2	14.5	91.2	0.0	0.4	25.2
Queue Length 95th (m)	12.9	#95.9	29.3	145.8	14.2	2.3	43.5
Internal Link Dist (m)	116.6	92.4		129.1			337.3
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	621	468	546	1020	926	235	1015
Starvation Cap Reductn	0	0	0	191	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	0.74	0.28	0.85	0.42	0.02	0.26

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
48: Humber Station Rd & Street E

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	14	82	344	1	3	151	704	386	5	262	5
Future Volume (vph)	9	14	82	344	1	3	151	704	386	5	262	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes		0.94			1.00		1.00	1.00	0.86	1.00	1.00	
Flpb, ped/bikes		1.00			0.94		0.92	1.00	1.00	1.00	1.00	
Frt		0.89			1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		1.00			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1564			1684		1648	1883	1383	1789	1873	
Flt Permitted		0.96			0.70		0.58	1.00	1.00	0.23	1.00	
Satd. Flow (perm)		1511			1238		1007	1883	1383	435	1873	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	9	14	82	344	1	3	151	704	386	5	262	5
RTOR Reduction (vph)	0	55	0	0	1	0	0	0	177	0	0	0
Lane Group Flow (vph)	0	50	0	0	347	0	151	704	209	5	267	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)		29.2			29.2		48.8	48.8	48.8	48.8	48.8	
Effective Green, g (s)		29.2			29.2		48.8	48.8	48.8	48.8	48.8	
Actuated g/C Ratio		0.32			0.32		0.54	0.54	0.54	0.54	0.54	
Clearance Time (s)		6.0			6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		490			401		546	1021	749	235	1015	
v/s Ratio Prot								c0.37			0.14	
v/s Ratio Perm		0.03			c0.28		0.15		0.15	0.01		
v/c Ratio		0.10			0.87		0.28	0.69	0.28	0.02	0.26	
Uniform Delay, d1		21.2			28.6		11.1	15.1	11.1	9.5	11.0	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			17.5		1.3	3.8	0.9	0.2	0.6	
Delay (s)		21.3			46.0		12.3	18.9	12.0	9.7	11.6	
Level of Service		C			D		B	B	B	A	B	
Approach Delay (s)		21.3			46.0			16.0			11.6	
Approach LOS		C			D			B			B	

Intersection Summary

HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	45.0		0.0	25.0		25.0	50.0		0.0	50.0		0.0
Storage Lanes	1		0	1		1	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.97	0.98		0.95		0.91	0.94	0.98			0.99	
Frt		0.975				0.850		0.969			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1809	0	1789	1883	1601	1789	3404	0	1789	3536	0
Flt Permitted	0.227			0.421			0.463			0.121		
Satd. Flow (perm)	414	1809	0	757	1883	1458	816	3404	0	228	3536	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		10				76		41			7	
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		81.8			813.2			194.3			153.1	
Travel Time (s)		5.9			58.6			14.0			11.0	

Intersection Summary	
Area Type:	Other

Timings
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	60	216	88	367	109	126	967	210	492
Future Volume (vph)	60	216	88	367	109	126	967	210	492
Turn Type	Perm	NA	Perm	NA	Perm	Perm	NA	pm+pt	NA
Protected Phases		4		8			2	1	6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	8	8	8	2	2	1	6
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	11.0	25.0
Total Split (s)	33.0	33.0	33.0	33.0	33.0	50.0	50.0	17.0	67.0
Total Split (%)	33.0%	33.0%	33.0%	33.0%	33.0%	50.0%	50.0%	17.0%	67.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0
Lead/Lag						Lag	Lag	Lead	
Lead-Lag Optimize?						Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	23.4	23.4	23.4	23.4	23.4	49.9	49.9	66.6	64.6
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.50	0.50	0.67	0.65
v/c Ratio	0.62	0.60	0.50	0.83	0.27	0.31	0.71	0.66	0.22
Control Delay	61.9	38.4	42.5	52.8	12.8	19.6	22.8	21.5	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	38.4	42.5	52.8	12.8	19.6	22.8	21.5	8.0
LOS	E	D	D	D	B	B	C	C	A
Approach Delay		42.8		43.4			22.5		11.9
Approach LOS		D		D			C		B

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green		
Natural Cycle: 65		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.83		
Intersection Signal Delay: 26.1	Intersection LOS: C	
Intersection Capacity Utilization 89.0%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 58: Humber Station Rd & Street Y

Queues
58: Humber Station Rd & Street Y

05-15-2023

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	60	260	88	367	109	126	1217	210	512
v/c Ratio	0.62	0.60	0.50	0.83	0.27	0.31	0.71	0.66	0.22
Control Delay	61.9	38.4	42.5	52.8	12.8	19.6	22.8	21.5	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.9	38.4	42.5	52.8	12.8	19.6	22.8	21.5	8.0
Queue Length 50th (m)	10.7	44.3	15.2	69.5	5.2	15.0	96.8	15.0	20.8
Queue Length 95th (m)	#27.9	68.0	30.6	100.1	18.4	31.6	133.7	38.3	30.6
Internal Link Dist (m)		57.8		789.2			170.3		129.1
Turn Bay Length (m)	45.0		25.0		25.0	50.0		50.0	
Base Capacity (vph)	111	495	204	508	449	407	1719	354	2285
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	0.54	0.53	0.43	0.72	0.24	0.31	0.71	0.59	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
58: Humber Station Rd & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	216	44	88	367	109	126	967	250	210	492	20
Future Volume (vph)	60	216	44	88	367	109	126	967	250	210	492	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.91	1.00	0.98		1.00	0.99	
Flpb, ped/bikes	0.97	1.00		0.96	1.00	1.00	0.94	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	1808		1709	1883	1458	1674	3405		1789	3537	
Flt Permitted	0.23	1.00		0.42	1.00	1.00	0.46	1.00		0.12	1.00	
Satd. Flow (perm)	414	1808		758	1883	1458	816	3405		228	3537	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	216	44	88	367	109	126	967	250	210	492	20
RTOR Reduction (vph)	0	8	0	0	0	58	0	21	0	0	2	0
Lane Group Flow (vph)	60	252	0	88	367	51	126	1197	0	210	510	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.4	23.4		23.4	23.4	23.4	50.0	50.0		64.6	64.6	
Effective Green, g (s)	23.4	23.4		23.4	23.4	23.4	50.0	50.0		64.6	64.6	
Actuated g/C Ratio	0.23	0.23		0.23	0.23	0.23	0.50	0.50		0.65	0.65	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	6.0	6.0		4.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	96	423		177	440	341	408	1702		312	2284	
v/s Ratio Prot		0.14			c0.19			0.35		c0.07	0.14	
v/s Ratio Perm	0.14			0.12		0.03	0.15			c0.36		
v/c Ratio	0.62	0.60		0.50	0.83	0.15	0.31	0.70		0.67	0.22	
Uniform Delay, d1	34.4	34.1		33.2	36.5	30.4	14.8	19.3		13.5	7.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	12.0	2.3		2.2	12.8	0.2	2.0	2.5		5.6	0.2	
Delay (s)	46.4	36.4		35.4	49.2	30.6	16.7	21.7		19.1	7.5	
Level of Service	D	D		D	D	C	B	C		B	A	
Approach Delay (s)		38.2			43.5			21.3			10.9	
Approach LOS		D			D			C			B	

Intersection Summary

HCM 2000 Control Delay	24.8	HCM 2000 Level of Service		C	
HCM 2000 Volume to Capacity ratio	0.74				
Actuated Cycle Length (s)	100.0	Sum of lost time (s)		16.0	
Intersection Capacity Utilization	89.0%	ICU Level of Service		E	
Analysis Period (min)	15				
c Critical Lane Group					

Lanes and Geometrics
62: Street Y & Street VV

05-15-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.994	
Flt Protected					0.954	
Satd. Flow (prot)	0	1883	1853	0	1786	0
Flt Permitted					0.954	
Satd. Flow (perm)	0	1883	1853	0	1786	0
Link Speed (k/h)		50	50		50	
Link Distance (m)		82.2	318.6		162.9	
Travel Time (s)		5.9	22.9		11.7	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
62: Street Y & Street VV

05-15-2023

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	251	257	34	21	1
Future Volume (vph)	0	251	257	34	21	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	251	257	34	21	1

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	251	291	22
Volume Left (vph)	0	0	21
Volume Right (vph)	0	34	1
Hadj (s)	0.03	-0.04	0.20
Departure Headway (s)	4.3	4.2	5.3
Degree Utilization, x	0.30	0.34	0.03
Capacity (veh/h)	826	840	618
Control Delay (s)	9.1	9.3	8.4
Approach Delay (s)	9.1	9.3	8.4
Approach LOS	A	A	A

Intersection Summary				
Delay	9.2			
Level of Service	A			
Intersection Capacity Utilization	34.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Lanes and Geometrics
64: Street JJ & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.993			0.990			0.967			0.991	
Flt Protected		0.998			0.995			0.994			0.994	
Satd. Flow (prot)	0	1867	0	0	1855	0	0	1810	0	0	1855	0
Flt Permitted		0.998			0.995			0.994			0.994	
Satd. Flow (perm)	0	1867	0	0	1855	0	0	1810	0	0	1855	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		318.6			90.0			229.7			590.8	
Travel Time (s)		22.9			6.5			16.5			42.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
64: Street JJ & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	270	16	44	326	30	28	141	55	18	122	10
Future Volume (vph)	10	270	16	44	326	30	28	141	55	18	122	10
Peak Hour 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
Hourly flow rate (vph)	10	270	16	44	326	30	28	141	55	18	122	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	296	400	224	150
Volume Left (vph)	10	44	28	18
Volume Right (vph)	16	30	55	10
Hadj (s)	0.01	0.01	-0.09	0.02
Departure Headway (s)	5.9	5.7	6.2	6.5
Degree Utilization, x	0.48	0.63	0.39	0.27
Capacity (veh/h)	569	604	515	471
Control Delay (s)	14.2	18.0	13.0	11.9
Approach Delay (s)	14.2	18.0	13.0	11.9
Approach LOS	B	C	B	B

Intersection Summary				
Delay	15.0			
Level of Service	C			
Intersection Capacity Utilization	61.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
65: Street I & Street Y

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			7.5			0.0			0.0		
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
Ped Bike Factor												
Frt		0.983			0.985			0.995			0.993	
Flt Protected		0.999			0.997			0.993			0.992	
Satd. Flow (prot)	0	1850	0	0	1850	0	0	1861	0	0	1855	0
Flt Permitted		0.999			0.997			0.993			0.992	
Satd. Flow (perm)	0	1850	0	0	1850	0	0	1861	0	0	1855	0
Link Speed (k/h)		50			50			48			50	
Link Distance (m)		189.0			137.6			229.8			599.1	
Travel Time (s)		13.6			9.9			17.2			43.1	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
65: Street I & Street Y

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	282	42	32	381	53	29	162	8	31	141	10
Future Volume (vph)	10	282	42	32	381	53	29	162	8	31	141	10
Peak Hour 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
Hourly flow rate (vph)	10	282	42	32	381	53	29	162	8	31	141	10

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	334	466	199	182
Volume Left (vph)	10	32	29	31
Volume Right (vph)	42	53	8	10
Hadj (s)	-0.04	-0.02	0.04	0.04
Departure Headway (s)	6.1	5.9	6.9	6.9
Degree Utilization, x	0.57	0.77	0.38	0.35
Capacity (veh/h)	546	581	460	454
Control Delay (s)	17.0	25.6	14.0	13.6
Approach Delay (s)	17.0	25.6	14.0	13.6
Approach LOS	C	D	B	B

Intersection Summary				
Delay	19.4			
Level of Service	C			
Intersection Capacity Utilization	58.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Lanes and Geometrics
84: Street JJ & Street EE

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.921						0.987				
Flt Protected					0.974			0.998				
Satd. Flow (prot)	0	1735	0	0	1834	0	0	1855	0	0	1883	0
Flt Permitted					0.974			0.998				
Satd. Flow (perm)	0	1735	0	0	1834	0	0	1855	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		174.8			275.5			262.0			229.7	
Travel Time (s)		12.6			19.8			18.9			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
84: Street JJ & Street EE

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	7	20	17	0	8	205	23	0	178	0
Future Volume (Veh/h)	0	5	7	20	17	0	8	205	23	0	178	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	5	7	20	17	0	8	205	23	0	178	0
Pedestrians		50			50			50				
Lane Width (m)		3.7			3.7			3.7				
Walking Speed (m/s)		1.2			1.2			1.2				
Percent Blockage		4			4			4				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								262				
pX, platoon unblocked												
vC, conflicting volume	469	522	278	520	510	266	228			278		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	469	522	278	520	510	266	228			278		
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	99	99	95	96	100	99			100		
cM capacity (veh/h)	436	418	697	391	425	739	1283			1230		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	12	37	236	178
Volume Left	0	20	8	0
Volume Right	7	0	23	0
cSH	545	406	1283	1230
Volume to Capacity	0.02	0.09	0.01	0.00
Queue Length 95th (m)	0.5	2.4	0.1	0.0
Control Delay (s)	11.7	14.8	0.3	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.7	14.8	0.3	0.0
Approach LOS	B	B		

Intersection Summary					
Average Delay			1.6		
Intersection Capacity Utilization			37.2%	ICU Level of Service	A
Analysis Period (min)			15		

Lanes and Geometrics
85: Street I & Street EE

05-15-2023

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
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
Ped Bike Factor												
Frt		0.896										
Flt Protected								0.996				
Satd. Flow (prot)	0	1688	0	0	1883	0	0	1876	0	0	1883	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1688	0	0	1883	0	0	1876	0	0	1883	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		275.5			332.9			217.2			229.8	
Travel Time (s)		19.8			24.0			15.6			16.5	

Intersection Summary	
Area Type:	Other

HCM Unsignalized Intersection Capacity Analysis
85: Street I & Street EE

05-15-2023

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	5	17	0	17	0	20	221	0	0	191	0
Future Volume (Veh/h)	0	5	17	0	17	0	20	221	0	0	191	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	0	5	17	0	17	0	20	221	0	0	191	0
Pedestrians		50			50			50			50	
Lane Width (m)		3.7			3.7			3.7			3.7	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		4			4			4			4	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)								342				
pX, platoon unblocked												
vC, conflicting volume	560	552	291	572	552	321	241			271		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	560	552	291	572	552	321	241			271		
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	99	98	100	96	100	98			100		
cM capacity (veh/h)	360	398	685	353	398	659	1269			1237		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	17	241	191
Volume Left	0	0	20	0
Volume Right	17	0	0	0
cSH	589	398	1269	1237
Volume to Capacity	0.04	0.04	0.02	0.00
Queue Length 95th (m)	0.9	1.1	0.4	0.0
Control Delay (s)	11.3	14.4	0.8	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.3	14.4	0.8	0.0
Approach LOS	B	B		

Intersection Summary					
Average Delay			1.5		
Intersection Capacity Utilization			46.5%	ICU Level of Service	A
Analysis Period (min)			15		

Lanes and Geometrics
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt					0.997	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	3579	3558	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	3579	3558	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					5	
Link Speed (k/h)	50			50	50	
Link Distance (m)	332.9			347.2	128.1	
Travel Time (s)	24.0			25.0	9.2	

Intersection Summary	
Area Type:	Other

Timings
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	NBT	SBT
Lane Configurations			
Traffic Volume (vph)	5	1228	799
Future Volume (vph)	5	1228	799
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	25.0	65.0	65.0
Total Split (%)	27.8%	72.2%	72.2%
Yellow Time (s)	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	None	C-Max	C-Max
Act Effct Green (s)	10.9	77.6	77.6
Actuated g/C Ratio	0.12	0.86	0.86
v/c Ratio	0.02	0.40	0.27
Control Delay	29.8	4.5	3.7
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	4.5	3.7
LOS	C	A	A
Approach Delay	29.8	4.5	3.7
Approach LOS	C	A	A

Intersection Summary		
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 55		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.40		
Intersection Signal Delay: 4.3	Intersection LOS: A	
Intersection Capacity Utilization 48.1%	ICU Level of Service A	
Analysis Period (min) 15		

Splits and Phases: 88: Humber Station Rd & Street EE

Queues
88: Humber Station Rd & Street EE

05-15-2023

Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	5	1228	816
v/c Ratio	0.02	0.40	0.27
Control Delay	29.8	4.5	3.7
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	4.5	3.7
Queue Length 50th (m)	0.9	0.0	0.0
Queue Length 95th (m)	3.6	69.1	40.0
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	377	3086	3068
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.40	0.27

Intersection Summary

HCM Signalized Intersection Capacity Analysis
88: Humber Station Rd & Street EE

05-15-2023

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	0	0	1228	799	17
Future Volume (vph)	5	0	0	1228	799	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0			6.0	6.0	
Lane Util. Factor	1.00			0.95	0.95	
Frpb, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			3579	3557	
Flt Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			3579	3557	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	0	0	1228	799	17
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	5	0	0	1228	815	0
Confl. Peds. (#/hr)			50			50
Turn Type	Prot			NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	7.6			70.4	70.4	
Effective Green, g (s)	7.6			70.4	70.4	
Actuated g/C Ratio	0.08			0.78	0.78	
Clearance Time (s)	6.0			6.0	6.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	151			2799	2782	
v/s Ratio Prot	c0.00			c0.34	0.23	
v/s Ratio Perm						
v/c Ratio	0.03			0.44	0.29	
Uniform Delay, d1	37.8			3.2	2.8	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.1			0.5	0.3	
Delay (s)	37.9			3.8	3.0	
Level of Service	D			A	A	
Approach Delay (s)	37.9			3.8	3.0	
Approach LOS	D			A	A	

Intersection Summary				
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: Bolton King&Emil - 1h.j9
Path: G:\0 DEMASIMULATIONS\01 BA Group\7694-01 Bolton\Analysis\01 May_2023\ARCADY ROUNDABOUT
Report generation date: 16/05/2023 20:55:34

Summary of junction performance

	AM								PM							
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
[Lane Simulation] - EX_2022																
Arm 1	0.5	1.7	3.88		A	3.96	A	% [ ]	0.4	1.6	3.70		A	4.65	A	% [ ]
Arm 2	0.5	1.6	4.47		A				1.1	3.2	5.48		A			
Arm 3	0.6	1.7	3.64		A				0.2	1.1	3.87		A			
[Lane Simulation] - FB_2041																
Arm 1	0.6	1.9	3.63		A	3.82	A	% [ ]	0.5	1.8	3.85		A	4.48	A	% [ ]
Arm 2	0.6	1.8	4.26		A				1.4	4.0	5.36		A			
Arm 3	0.5	1.4	3.50		A				0.4	1.6	3.47		A			
[Lane Simulation] - FT_2041																
Arm 1	1.1	2.7	4.67		A	4.48	A	% [ ]	1.1	2.8	4.40		A	7.60	A	% [ ]
Arm 2	1.3	3.7	4.82		A				4.9	11.7	10.56		B			
Arm 3	0.8	3.0	3.97		A				0.8	2.3	4.15		A			

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	30/10/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	BACTOR\DMA
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1844813358	101	2.47

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D1	EX_2022	AM	EX	FLAT	08:00	09:00	60	✓	✓
D2	EX_2022	PM	EX	FLAT	16:00	17:00	60	✓	✓
D7	FB_2041	AM	FB	FLAT	08:00	09:00	60	✓	✓
D8	FB_2041	PM	FB	FLAT	16:00	17:00	60	✓	✓
D9	FT_2041	AM	FT	FLAT	08:00	09:00	60	✓	✓
D10	FT_2041	PM	FT	FLAT	16:00	17:00	60	✓	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

EX_2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	3.96	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Arms

Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.17	8.29	30.0	22.0	55.0	20.0	
2	6.87	7.55	30.0	21.6	55.0	20.0	
3	7.09	8.65	30.0	21.5	55.0	20.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.738	2487
2	0.715	2361
3	0.768	2651

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00

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Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	1 [Give-way line]	1	2		Infinity	0	99999
		2	2,3		Infinity	0	99999
2	1 [Give-way line]	1	3		Infinity	0	99999
		2	1,3		Infinity	0	99999
3	1 [Give-way line]	1	1,2		Infinity	0	99999
		2	2		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	1 [Give-way line]	1	0.369	1244
		2	0.369	1244
2	1 [Give-way line]	1	0.358	1180
		2	0.358	1180
3	1 [Give-way line]	1	0.384	1325
		2	0.384	1325

Lane Movements

Arm	Lane Level	Lane	Destination arm		
			1	2	3
1	1 [Give-way line]	1		✓	
		2		✓	✓
2	1 [Give-way line]	1			✓
		2	✓		✓
3	1 [Give-way line]	1	✓	✓	
		2		✓	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D1	EX_2022	AM	EX	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	418	100.000
2		FLAT	✓	315	100.000
3		FLAT	✓	406	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	302	116
	2	244	0	71
	3	180	226	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	12	6
	2	8	0	25
	3	4	9	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.88	0.5	1.7	A	433	433
2	4.47	0.5	1.6	A	310	310
3	3.64	0.6	1.7	A	409	409

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	432	432	228	430	421	0.0	0.5	3.884	A
2	310	310	124	308	534	0.0	0.5	4.469	A
3	409	409	241	408	191	0.0	0.6	3.638	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.54	0.00	0.00	1.39	1.74
2	0.54	0.00	0.00	1.33	1.65
3	0.60	0.00	0.00	0.93	1.72

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	169	1030	0.164	169	0.0	0.2	3.706	A
			2	2,3	263	1055	0.249	262	0.0	0.3	3.999	A
	Exit	1	1		421			421	0.0	0.0	0.000	A
2	Entry	1	1	3	44	897	0.048	44	0.0	0.0	4.057	A
			2	1,3	267	1026	0.260	264	0.0	0.5	4.535	A
	Exit	1	1		534			534	0.0	0.0	0.000	A
3	Entry	1	1	1,2	278	1170	0.238	277	0.0	0.4	3.746	A
			2	2	131	1126	0.117	130	0.0	0.2	3.404	A
	Exit	1	1		191			191	0.0	0.0	0.000	A

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Lanes: Queue Variation Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.19	0.00	0.00	0.49	1.06
			2	0.34	0.00	0.00	0.91	1.42
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.05	0.00	0.00	0.00	-0.01
			2	0.49	0.00	0.00	1.29	1.61
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.41	0.00	0.00	0.81	1.18
			2	0.19	0.00	0.00	0.48	0.75
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

EX_2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	4.65	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D2	EX_2022	PM	EX	FLAT	16:00	17:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	491	100.000
2		FLAT	✓	731	100.000
3		FLAT	✓	165	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	315	176
	2	415	0	316
	3	91	74	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	6	7
	2	8	0	6
	3	9	22	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.70	0.4	1.6	A	495	495
2	5.48	1.1	3.2	A	725	725
3	3.87	0.2	1.1	A	158	158

Main Results for each time segment

16:00 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	495	495	74	496	496	0.0	0.4	3.699	A
2	725	725	174	728	395	0.0	1.0	5.478	A
3	157	157	413	157	489	0.0	0.2	3.872	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.42	0.00	0.00	1.22	1.59
2	1.06	0.00	0.24	2.42	3.25
3	0.20	0.00	0.00	0.42	1.15

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	178	1137	0.157	179	0.0	0.1	3.412	A
			2	2,3	317	1139	0.278	317	0.0	0.3	3.860	A
	Exit	1	1		496			496	0.0	0.0	0.000	A
2	Entry	1	1	3	209	1054	0.198	209	0.0	0.2	3.935	A
			2	1,3	517	1037	0.499	519	0.0	0.8	6.112	A
	Exit	1	1		395			395	0.0	0.0	0.000	A
3	Entry	1	1	1,2	118	1030	0.115	118	0.0	0.1	3.879	A
			2	2	39	947	0.042	39	0.0	0.0	3.852	A
	Exit	1	1		489			489	0.0	0.0	0.000	A

Lanes: Queue Variation Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.09	0.00	0.00	0.00	0.37
			2	0.33	0.00	0.00	0.93	1.46
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.24	0.00	0.00	0.64	1.89
			2	0.81	0.00	0.00	1.85	2.63
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.19	0.00	0.00	0.43	1.06
			2	0.02	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

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FB_2041, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	3.82	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D7	FB_2041	AM	FB	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	505	100.000
2		FLAT	✓	594	100.000
3		FLAT	✓	527	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	365	140
	2	338	0	256
	3	206	321	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.63	0.6	1.9	A	504	504
2	4.26	0.6	1.8	A	596	596
3	3.50	0.5	1.4	A	533	533

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	504	504	330	502	546	0.0	0.6	3.634	A
2	596	596	136	599	696	0.0	0.6	4.261	A
3	533	533	341	535	394	0.0	0.5	3.502	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.56	0.00	0.00	1.13	1.85
2	0.60	0.00	0.00	1.35	1.81
3	0.49	0.00	0.00	0.93	1.42

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	202	1122	0.180	202	0.0	0.2	3.393	A
			2	2,3	302	1122	0.269	300	0.0	0.4	3.794	A
	Exit	1	1		546			546	0.0	0.0	0.000	A
2	Entry	1	1	3	159	1132	0.140	159	0.0	0.1	3.411	A
			2	1,3	438	1132	0.387	440	0.0	0.5	4.578	A
	Exit	1	1		696			696	0.0	0.0	0.000	A
3	Entry	1	1	1,2	346	1195	0.290	349	0.0	0.3	3.673	A
			2	2	187	1195	0.156	187	0.0	0.2	3.183	A
	Exit	1	1		394			394	0.0	0.0	0.000	A

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Lanes: Queue Variation Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.17	0.00	0.00	0.38	0.77
			2	0.40	0.00	0.00	0.80	0.97
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.13	0.00	0.00	1.00	1.00
			2	0.48	0.00	0.00	0.96	1.66
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.32	0.00	0.00	0.72	0.92
			2	0.17	0.00	0.00	0.39	0.73
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

FB_2041, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	4.48	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D8	FB_2041	PM	FB	FLAT	16:00	17:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	594	100.000
2		FLAT	✓	889	100.000
3		FLAT	✓	410	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	381	213
	2	488	0	401
	3	104	306	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.85	0.5	1.8	A	593	593
2	5.36	1.4	4.0	A	905	905
3	3.47	0.4	1.6	A	415	415

Main Results for each time segment

16:00 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	593	593	311	595	598	0.0	0.5	3.846	A
2	905	905	213	905	692	0.0	1.4	5.364	A
3	415	415	494	414	625	0.0	0.4	3.470	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.51	0.00	0.00	0.98	1.83
2	1.39	0.00	0.38	3.15	3.98
3	0.40	0.00	0.00	0.95	1.56

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	218	1129	0.193	219	0.0	0.2	3.457	A
			2	2,3	375	1129	0.332	376	0.0	0.3	4.074	A
	Exit	1	1		598			598	0.0	0.0	0.000	A
2	Entry	1	1	3	282	1104	0.255	282	0.0	0.4	3.854	A
			2	1,3	623	1104	0.565	624	0.0	1.0	6.041	A
	Exit	1	1		692			692	0.0	0.0	0.000	A
3	Entry	1	1	1,2	254	1136	0.223	253	0.0	0.2	3.557	A
			2	2	161	1136	0.142	161	0.0	0.1	3.339	A
	Exit	1	1		625			625	0.0	0.0	0.000	A

Lanes: Queue Variation Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.19	0.00	0.00	0.46	0.80
			2	0.33	0.00	0.00	0.83	1.33
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.37	0.00	0.00	0.89	1.49
			2	1.02	0.00	0.02	2.43	2.98
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.25	0.00	0.00	0.64	0.94
			2	0.15	0.00	0.00	0.30	0.69
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

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FT_2041, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	4.48	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D9	FT_2041	AM	FT	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	817	100.000
2		FLAT	✓	787	100.000
3		FLAT	✓	850	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	677	140
	2	434	0	353
	3	206	644	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
From	1	2	3
1	0	0	0
2	0	0	0
3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	4.67	1.1	2.7	A	819	819
2	4.82	1.3	3.7	A	784	784
3	3.97	0.8	3.0	A	836	836

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	819	819	635	819	628	0.0	1.1	4.671	A
2	784	784	133	778	1320	0.0	1.3	4.817	A
3	836	836	421	841	490	0.0	0.8	3.973	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	1.06	0.00	0.38	2.11	2.74
2	1.34	0.00	0.43	2.85	3.74
3	0.81	0.00	0.00	1.84	2.99

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	375	1009	0.371	375	0.0	0.4	4.492	A
			2	2,3	444	1009	0.440	444	0.0	0.6	4.821	A
	Exit	1	1		628			628	0.0	0.0	0.000	A
2	Entry	1	1	3	234	1133	0.207	234	0.0	0.3	3.653	A
			2	1,3	549	1133	0.485	544	0.0	1.0	5.316	A
	Exit	1	1		1320			1320	0.0	0.0	0.000	A
3	Entry	1	1	1,2	482	1164	0.414	486	0.0	0.5	4.184	A
			2	2	354	1164	0.304	356	0.0	0.4	3.691	A
	Exit	1	1		490			490	0.0	0.0	0.000	A

Lanes: Queue Variation Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.43	0.00	0.00	0.92	2.00
			2	0.63	0.00	0.04	1.09	1.60
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.31	0.00	0.00	0.86	2.00
			2	1.03	0.00	0.21	2.32	2.88
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.46	0.00	0.00	0.92	1.49
			2	0.36	0.00	0.00	0.83	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

FT_2041, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	7.60	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D10	FT_2041	PM	FT	FLAT	16:00	17:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	789	100.000
2		FLAT	✓	1536	100.000
3		FLAT	✓	599	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	576	213
	2	812	0	724
	3	104	495	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	4.40	1.1	2.8	A	788	788
2	10.56	4.9	11.7	B	1536	1536
3	4.15	0.8	2.3	A	588	588

Main Results for each time segment

16:00 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	788	788	482	787	906	0.0	1.1	4.402	A
2	1536	1536	214	1521	1055	0.0	4.9	10.555	B
3	588	588	802	586	934	0.0	0.8	4.150	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	1.06	0.00	0.38	1.98	2.83
2	4.92	0.00	3.44	10.99	11.71
3	0.78	0.00	0.12	1.66	2.33

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	323	1066	0.303	324	0.0	0.4	4.072	A
			2	2,3	465	1066	0.436	463	0.0	0.7	4.639	A
	Exit	1	1		906			906	0.0	0.0	0.000	A
2	Entry	1	1	3	586	1104	0.531	585	0.0	1.1	6.201	A
			2	1,3	950	1104	0.861	936	0.0	3.8	13.249	B
	Exit	1	1		1055			1055	0.0	0.0	0.000	A
3	Entry	1	1	1,2	326	1018	0.321	325	0.0	0.5	4.261	A
			2	2	261	1018	0.257	261	0.0	0.3	4.011	A
	Exit	1	1		934			934	0.0	0.0	0.000	A

Lanes: Queue Variation Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.36	0.00	0.00	0.80	2.00
			2	0.70	0.00	0.12	1.13	1.85
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	1.10	0.00	0.00	2.78	3.98
			2	3.82	0.00	2.65	7.30	8.98
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.49	0.00	0.00	0.93	1.42
			2	0.30	0.00	0.00	0.68	0.86
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: Bolton GO Access - 1h.j9
Path: G:\0 DEMASIMULATIONS\01 BA Group\7694-01 Bolton\Analysis\01 May_2023\ARCADY ROUNDABOUT
Report generation date: 16/05/2023 11:07:02

Summary of junction performance

	AM								PM							
	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity	Queue (Veh)	95% Queue (Veh)	Delay (s)	RFC	LOS	Junction Delay (s)	Junction LOS	Network Residual Capacity
[Lane Simulation] - 2041 FB																
Arm 1	0.0	~1	3.57		A	3.32	A	%	0.2	0.8	3.65		A	3.39	A	%
Arm 2	0.4	1.6	3.53		A				0.6	2.0	3.48		A			
Arm 3	0.5	2.0	3.13		A			[ ]	0.1	0.6	2.79		A			[ ]
[Lane Simulation] - 2041 FT																
Arm 1	0.7	2.0	4.82		A	4.03	A	%	0.6	1.9	4.47		A	4.48	A	%
Arm 2	0.6	1.9	4.03		A				1.3	4.0	4.88		A			
Arm 3	0.5	1.7	3.30		A			[ ]	0.3	0.9	3.41		A			[ ]

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

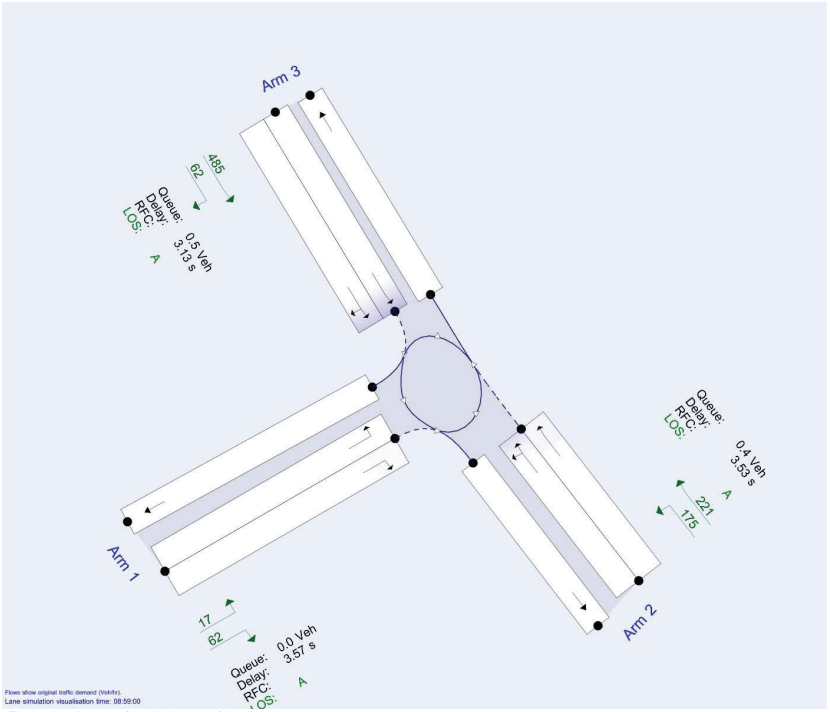
File summary

File Description

Title	(untitled)
Location	Emil Kolb & GOAccess
Site number	
Date	30/10/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	BACTOR\DMA
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin



The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓		✓	Delay	0.85	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	148573274	101	1.33

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D5	2041 FB	AM	FB 2041	FLAT	08:00	09:00	60	✓	✓
D6	2041 FB	PM	FB 2041	FLAT	16:00	17:00	60	✓	✓
D7	2041 FT	AM	FT 2041	FLAT	08:00	09:00	60	✓	✓
D8	2041 FT	PM	FT 2041	FLAT	16:00	17:00	60	✓	✓

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Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	✓	100.000	100.000

2041 FB, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	3.32	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Arms

Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.17	8.29	30.0	22.0	55.0	20.0	
2	6.87	7.55	30.0	21.6	55.0	20.0	
3	7.09	8.65	30.0	21.5	55.0	20.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.738	2487
2	0.715	2361
3	0.768	2651

The slope and intercept shown above include any corrections and adjustments.

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
1	Evenly split	10.00
2	Evenly split	10.00
3	Evenly split	10.00

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Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	1 [Give-way line]	1	2		Infinity	0	99999
		2	3		Infinity	0	99999
2	1 [Give-way line]	1	3		Infinity	0	99999
		2	1,3		Infinity	0	99999
3	1 [Give-way line]	1	1,2		Infinity	0	99999
		2	2		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	1 [Give-way line]	1	0.369	1244
		2	0.369	1244
2	1 [Give-way line]	1	0.358	1180
		2	0.358	1180
3	1 [Give-way line]	1	0.384	1325
		2	0.384	1325

Lane Movements

Arm	Lane Level	Lane	Destination arm		
			1	2	3
1	1 [Give-way line]	1		✓	
		2			✓
2	1 [Give-way line]	1			✓
		2	✓		✓
3	1 [Give-way line]	1	✓	✓	
		2		✓	

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D5	2041 FB	AM	FB 2041	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	79	100.000
2		FLAT	✓	396	100.000
3		FLAT	✓	547	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	62	17
	2	175	0	221
	3	62	485	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
From	1	2	3
1	0	0	0
2	0	0	0
3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.57	0.0	~1	A	79	79
2	3.53	0.4	1.6	A	392	392
3	3.13	0.5	2.0	A	543	543

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	79	79	482	80	241	0.0	0.0	3.569	A
2	392	392	18	392	544	0.0	0.4	3.532	A
3	543	543	181	542	229	0.0	0.5	3.125	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.05	0.00	0.00	0.00	0.00
2	0.41	0.00	0.00	0.99	1.55
3	0.47	0.00	0.00	1.36	1.99

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	61	1065	0.057	62	0.0	0.0	3.588	A
			2	3	18	1065	0.017	18	0.0	0.0	3.498	A
	Exit	1	1		241			241	0.0	0.0	0.000	A
2	Entry	1	1	3	119	1174	0.101	119	0.0	0.1	3.173	A
			2	1,3	273	1174	0.233	274	0.0	0.3	3.693	A
	Exit	1	1		544			544	0.0	0.0	0.000	A
3	Entry	1	1	1,2	294	1256	0.234	293	0.0	0.3	3.169	A
			2	2	250	1256	0.199	249	0.0	0.1	3.073	A
	Exit	1	1		229			229	0.0	0.0	0.000	A

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Lanes: Queue Variation Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.04	0.00	0.00	0.00	0.00
			2	0.01	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.08	0.00	0.00	0.00	1.00
			2	0.33	0.00	0.00	0.84	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.32	0.00	0.00	0.99	1.55
			2	0.15	0.00	0.00	0.30	0.69
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041 FB, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	3.39	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D6	2041 FB	PM	FB 2041	FLAT	16:00	17:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	280	100.000
2		FLAT	✓	613	100.000
3		FLAT	✓	203	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	221	59
	2	39	0	574
	3	14	189	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.65	0.2	0.8	A	282	282
2	3.48	0.6	2.0	A	609	609
3	2.79	0.1	0.6	A	209	209

Main Results for each time segment

16:00 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	282	282	195	284	53	0.0	0.2	3.647	A
2	609	609	61	610	417	0.0	0.6	3.481	A
3	209	209	39	209	633	0.0	0.1	2.791	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.24	0.00	0.00	0.59	0.82
2	0.63	0.00	0.00	1.36	1.99
3	0.13	0.00	0.00	0.17	0.63

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	221	1172	0.189	222	0.0	0.2	3.755	A
			2	3	61	1172	0.052	61	0.0	0.0	3.246	A
	Exit	1	1		53			53	0.0	0.0	0.000	A
2	Entry	1	1	3	295	1158	0.254	295	0.0	0.4	3.454	A
			2	1,3	315	1158	0.272	316	0.0	0.3	3.505	A
	Exit	1	1		417			417	0.0	0.0	0.000	A
3	Entry	1	1	1,2	110	1311	0.084	111	0.0	0.0	2.785	A
			2	2	99	1311	0.075	98	0.0	0.1	2.796	A
	Exit	1	1		633			633	0.0	0.0	0.000	A

Lanes: Queue Variation Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.20	0.00	0.00	0.49	0.78
			2	0.04	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.36	0.00	0.00	0.76	0.93
			2	0.28	0.00	0.00	0.63	0.86
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.05	0.00	0.00	0.00	1.00
			2	0.08	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

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2041 FT, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	4.03	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D7	2041 FT	AM	FT 2041	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	530	100.000
2		FLAT	✓	492	100.000
3		FLAT	✓	566	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	386	144
	2	271	0	221
	3	101	465	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
From	1	2	3
1	0	0	0
2	0	0	0
3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	4.82	0.7	2.0	A	523	523
2	4.03	0.6	1.9	A	483	483
3	3.30	0.5	1.7	A	566	566

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	523	523	470	521	364	0.0	0.7	4.823	A
2	483	483	137	482	854	0.0	0.6	4.028	A
3	566	566	267	566	352	0.0	0.5	3.303	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.74	0.00	0.01	1.58	1.99
2	0.58	0.00	0.00	1.45	1.90
3	0.46	0.00	0.00	0.99	1.71

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	386	1070	0.360	384	0.0	0.6	5.171	A
			2	3	138	1070	0.129	137	0.0	0.1	3.890	A
	Exit	1	1		364			364	0.0	0.0	0.000	A
2	Entry	1	1	3	131	1131	0.116	132	0.0	0.1	3.375	A
			2	1,3	352	1131	0.311	350	0.0	0.5	4.273	A
	Exit	1	1		854			854	0.0	0.0	0.000	A
3	Entry	1	1	1,2	311	1223	0.254	311	0.0	0.3	3.383	A
			2	2	255	1223	0.209	255	0.0	0.2	3.199	A
	Exit	1	1		352			352	0.0	0.0	0.000	A

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Lanes: Queue Variation Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.60	0.00	0.00	1.11	1.74
			2	0.14	0.00	0.00	0.24	0.66
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.08	0.00	0.00	0.00	1.00
			2	0.50	0.00	0.00	1.24	1.87
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.26	0.00	0.00	0.62	0.93
			2	0.20	0.00	0.00	1.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041 FT, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	4.48	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D8	2041 FT	PM	FT 2041	FLAT	16:00	17:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	606	100.000
2		FLAT	✓	937	100.000
3		FLAT	✓	333	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	425	181
	2	407	0	530
	3	159	174	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		1	2	3
From	1	0	0	0
	2	0	0	0
	3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 95th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	4.47	0.6	1.9	A	595	595
2	4.88	1.3	4.0	A	922	922
3	3.41	0.3	0.9	A	339	339

Main Results for each time segment

16:00 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	595	595	177	596	562	0.0	0.6	4.472	A
2	922	922	180	922	593	0.0	1.3	4.876	A
3	339	339	398	340	703	0.0	0.3	3.411	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.64	0.00	0.00	1.53	1.92
2	1.31	0.00	0.49	2.98	3.98
3	0.29	0.00	0.00	0.68	0.91

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	416	1178	0.353	416	0.0	0.5	4.832	A
			2	3	179	1178	0.152	180	0.0	0.1	3.618	A
	Exit	1	1		562			562	0.0	0.0	0.000	A
2	Entry	1	1	3	329	1116	0.295	329	0.0	0.4	4.012	A
			2	1,3	593	1116	0.531	593	0.0	0.9	5.367	A
	Exit	1	1		593			593	0.0	0.0	0.000	A
3	Entry	1	1	1,2	239	1172	0.203	240	0.0	0.2	3.538	A
			2	2	100	1172	0.085	100	0.0	0.1	3.103	A
	Exit	1	1		703			703	0.0	0.0	0.000	A

Lanes: Queue Variation Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	Entry	1	1	0.50	0.00	0.00	1.29	1.80
			2	0.14	0.00	0.00	0.19	0.70
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.43	0.00	0.00	0.95	1.56
			2	0.88	0.00	0.11	1.81	2.49
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.22	0.00	0.00	0.52	0.79
			2	0.07	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

APPENDIX G:
Signal Warrants

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision | GO TO Justification:

What are the intersecting roadways? Gore Rd & South Site access

What is the direction of the Main Road street? North-South

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 1

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban **Population >= 10,000** **AND** **Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00		149	27				9	525		129		14	10
8:00	0	398	71	0	0	0	14	858	0	211	0	37	10
9:00		299	53				17	1,050		259		28	10
10:00		149	27				9	525		129		14	10
15:00		592	88				24	236		85		18	10
16:00	0	934	140	0	0	0	42	418	0	151	0	29	10
17:00		1,184	177				48	472		170		36	10
18:00		592	88				24	236		85		18	10
Total	**0**	**4,297**	**671**	**0**	**0**	**0**	**187**	**4,320**	**0**	**1,219**	**0**	**194**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Gore Rd & South Site access Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	68	%		
2. Delay to Cross Traffic	A	Main Road	100	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	68	%	☐	☑
	B	Justification 2	100	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Humber & Steet Y

What is the direction of the Main Road street? North-South

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban **Population >= 10,000** **AND** **Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	37	231	47	21	181	35	47	317	9	65	54	67	10
8:00	66	412	84	37	316	60	80	542	16	112	95	119	10
9:00	74	461	94	42	362	70	93	634	19	131	109	133	10
10:00	37	231	47	21	181	35	47	317	9	65	54	67	10
15:00	63	491	125	30	108	22	105	235	10	44	184	55	10
16:00	113	877	224	54	189	37	180	402	17	76	321	98	10
17:00	126	982	251	60	216	44	211	470	20	88	367	110	10
18:00	63	491	125	30	108	22	105	235	10	44	184	55	10
Total	**581**	**4,176**	**998**	**295**	**1,661**	**323**	**867**	**3,153**	**112**	**625**	**1,368**	**703**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

***** Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Humber & Steet Y

Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☑	☐
	B	Crossing Volume	100	%		
2. Delay to Cross Traffic	A	Main Road	94	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	100	%	☑	☐
	B	Justification 2	94	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision | GO TO Justification:

What are the intersecting roadways? King & East Site access

What is the direction of the Main Road street? East-West

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Eastbound Approach			Minor Northbound Approach			Main Westbound Approach			Minor Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	17	414						367	34	132		61	10
8:00	26	663						604	57	211		101	10
9:00	33	829						735	69	263		123	10
10:00	17	414						367	34	132		61	10
15:00	48	446						481	87	70		37	10
16:00	77	715						791	144	113		61	10
17:00	96	893						962	175	141		75	10
18:00	48	446						481	87	70		37	10
Total	**362**	**4,821**	**0**	**0**	**0**	**0**	**0**	**4,789**	**688**	**1,131**	**0**	**557**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: King & East Site access

Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	74	%		
2. Delay to Cross Traffic	A	Main Road	98	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	74	%	☐	☑
	B	Justification 2	98	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? King & West Site access

What is the direction of the Main Road street? East-West

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Eastbound Approach			Minor Northbound Approach			Main Westbound Approach			Minor Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	17	299						394	34	132		61	10
8:00	26	479						648	57	211		101	10
9:00	33	599						789	69	263		123	10
10:00	17	299						394	34	132		61	10
15:00	48	424						431	87	70		37	10
16:00	76	679						709	144	113		61	10
17:00	95	848						862	175	141		74	10
18:00	48	424						431	87	70		37	10
Total	**360**	**4,051**	**0**	**0**	**0**	**0**	**0**	**4,658**	**688**	**1,131**	**0**	**554**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: King & West Site access

Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	73	%		
2. Delay to Cross Traffic	A	Main Road	96	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	73	%	☐	☑
	B	Justification 2	96	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Humber Station Rd & Street EE

What is the direction of the Main Road street? North-South

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban **Population >= 10,000 AND Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00		309		8				415	1				10
8:00		552		15				709	2				10
9:00		619		17				829	3				10
10:00		309		8				415	1				10
15:00		614		3				384	9				10
16:00		1,097		5				656	15				10
17:00		1,229		5				767	17				10
18:00		614		3				384	9				10
Total	**0**	**5,344**	**0**	**64**	**0**	**0**	**0**	**4,559**	**57**	**0**	**0**	**0**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Humber Station Rd & Street EE Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	95	%	☐	☑
	B	Crossing Volume	3	%		
2. Delay to Cross Traffic	A	Main Road	95	%	☐	☑
	B	Crossing Road	24	%		
3. Combination	A	Justificaton 1	3	%	☐	☑
	B	Justification 2	24	%		
4. 4-Hr Volume			9	%	☐	☑
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision

GO TO Justification:

What are the intersecting roadways? Humber Station & Street E

What is the direction of the Main Road street? North-South

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 1

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 4

d.- What is the operating environment? Urban **Population >= 10,000 AND Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	20	114	193	3	2	54	1	206	1	83	1	3	10
8:00	36	204	344	6	3	93	1	353	1	143	1	5	10
9:00	41	229	386	7	4	109	2	412	2	167	2	5	10
10:00	20	114	193	3	2	54	1	206	1	83	1	3	10
15:00	76	352	193	5	7	38	3	124	3	169	1	2	10
16:00	135	629	346	9	12	66	5	212	4	290	1	3	10
17:00	151	704	387	10	14	77	5	247	5	339	1	3	10
18:00	76	352	193	5	7	38	3	124	3	169	1	2	10
Total	**555**	**2,698**	**2,236**	**48**	**51**	**530**	**20**	**1,884**	**19**	**1,443**	**8**	**24**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Humber Station & Street E Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	99	%	☐	☑
	B	Crossing Volume	97	%		
2. Delay to Cross Traffic	A	Main Road	94	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	97	%	☑	☐
	B	Justification 2	94	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision | GO TO Justification:

What are the intersecting roadways? Emil Kolb Parkway & GO Station Rd

What is the direction of the Main Road street? North-South

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 2 or more

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban Population >= 10,000 AND Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	136	111		72		193		232	51				10
8:00	183	149		97		305		367	80				10
9:00	271	221		144		386		465	101				10
10:00	136	111		72		193		232	51				10
15:00	203	265		90		213		87	79				10
16:00	331	431		147		502		206	187				10
17:00	407	530		181		425		174	159				10
18:00	203	265		90		213		87	79				10
Total	**1,870**	**2,083**	**0**	**893**	**0**	**2,429**	**0**	**1,851**	**787**	**0**	**0**	**0**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Emil Kolb Parkway & GO Station Rd Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	97	%	☐	☑
	B	Crossing Volume	100	%		
2. Delay to Cross Traffic	A	Main Road	81	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	97	%	☑	☐
	B	Justification 2	81	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			

Input Data Sheet

Analysis Sheet | Results Sheet | Proposed Collision | GO TO Justification:

What are the intersecting roadways? Gore Rd & North Site access

What is the direction of the Main Road street? North-South

When was the data collected? 2022

Justification 1 - 4: Volume Warrants

a.- Number of lanes on the Main Road? 1

b.- Number of lanes on the Minor Road? 1

c.- How many approaches? 3

d.- What is the operating environment? Urban **Population >= 10,000 AND Speed < 70 km/hr**

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Northbound Approach			Minor Eastbound Approach			Main Southbound Approach			Minor Westbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00		125	26				22	403		131		16	10
8:00	0	334	70	0	0	0	36	658	0	214	0	42	10
9:00		251	53				44	805		262		32	10
10:00		125	26				22	403		131		16	10
15:00		438	94				27	177		83		25	10
16:00	0	691	149	0	0	0	48	313	0	147	0	39	10
17:00		876	189				54	354		166		49	10
18:00		438	94				27	177		83		25	10
Total	**0**	**3,278**	**701**	**0**	**0**	**0**	**280**	**3,290**	**0**	**1,217**	**0**	**244**	**80**

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptable to correction through the installation of traffic signal control

Justification 6: Pedestrian Volume

a.- Please fill in table below summarizing total pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Factored 8 hour pedestrian volume	120		15		7		0		
% Assigned to crossing rate	100%		50%		0%		0%		
Net 8 Hour Pedestrian Volume at Crossing									128
Net 8 Hour Vehicular Volume on Street Being Crossed									6,411

b.- Please fill in table below summarizing delay to pedestrians crossing major roadway at the intersection or in proximity to the intersection (zones). Please reference Section 4.8 of the Manual for further explanation and graphical representation.

	Zone 1		Zone 2		Zone 3 (if needed)		Zone 4 (if needed)		Total
	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	Assisted	Unassisted	
Total 8 hour pedestrian volume	20	80	0	15	1	5	0	0	
Total 8 hour pedestrians delayed greater than 10 seconds	10	10	1	6	2	4	0	0	
Factored volume of total pedestrians	120		15		7		0		
Factored volume of delayed pedestrians	30		8		8		0		
% Assigned to Crossing Rate	100%		50%		0%		0%		
Net 8 Hour Volume of Total Pedestrians									128
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

Input Sheet | Analysis Sheet | Proposed Collision

GO TO Justification:

Intersection: Gore Rd & North Site access Count Date: 2022

Summary Results

Justification			Compliance		Signal Justified? YES	Signal Justified? NO
1. Minimum Vehicular Volume	A	Total Volume	100	%	☐	☑
	B	Crossing Volume	70	%		
2. Delay to Cross Traffic	A	Main Road	95	%	☐	☑
	B	Crossing Road	100	%		
3. Combination	A	Justificaton 1	70	%	☐	☑
	B	Justification 2	95	%		
4. 4-Hr Volume			100	%	☑	☐
5. Collision Experience			73	%	☐	☑
6. Pedestrians	A	Volume	Justification not met		☐	☑
	B	Delay	Justification not met			