



CALEDON STATION SECONDARY PLAN

Transportation Study – Update

Prepared For: Caledon Community Partners

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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 CPKC 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 location of the Subject Lands is illustrated in **Figure 1**.

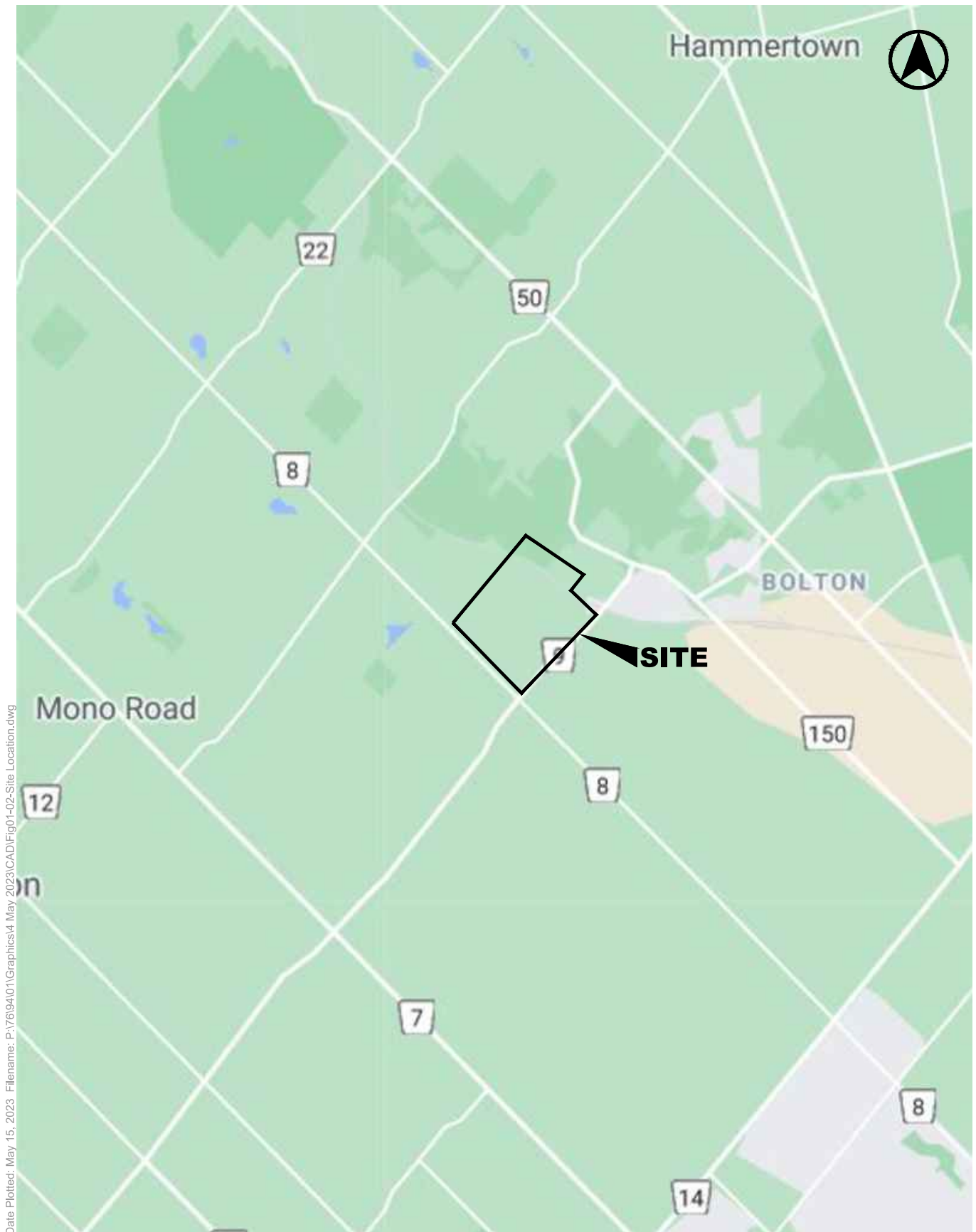
The Subject Lands are entirely within the Region of Peel Official Plan's 2051 Urban Area (ROP, Nov 2022) and partially in the Region's Major Transit Station Area (MTSA).

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 Zones 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 Transportation Study (consistent with prior studies submitted in 2021, 2022, 2023 and 2024) 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.

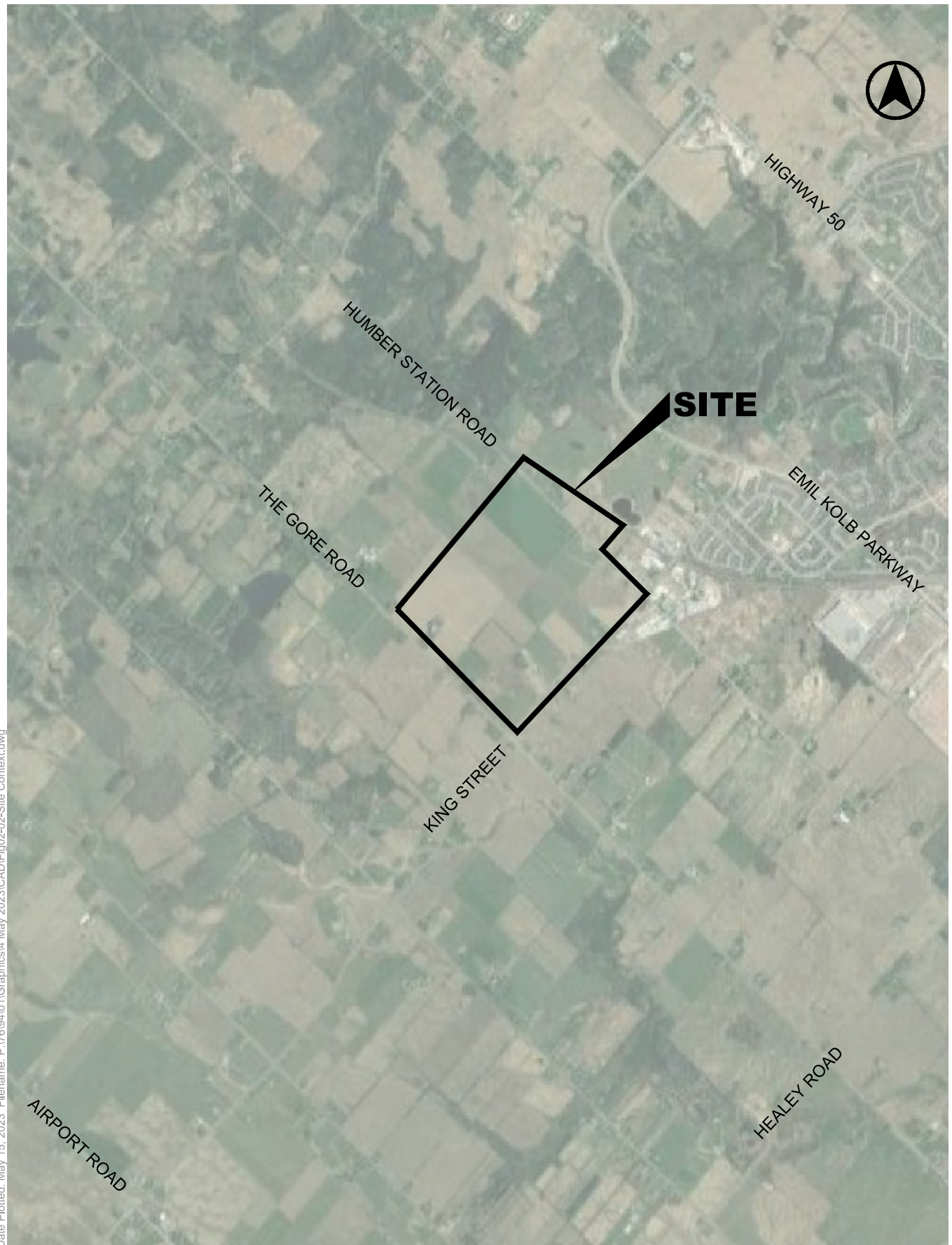
The latest Secondary Plan framework is provided in **Appendix A**.

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 (this “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 the Subject 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 was prepared in support of the LOPA process to create the Caledon Station Secondary Plan for the Subject Lands and continues to be updated to reflect the latest in support of the DSSP and Draft Plan submissions as a comprehensive document. This Transportation Study focusses 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 also 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 is also 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.
- Development Phasing

Caledon Community Partners have collaborated with Town and Region staff over the course of several submissions. The latest available comments from Town staff are provided and responded to in Section 1.3 of this study.



1.2.1 This Update

This July 2024 update considers the following changes as they relate to the Caledon Station Secondary Plan:

- Latest Framework Plan and related site statistics (Appendix A)
- Road Cross-Sections (proposed sections, summary of ongoing discussions, and proposed active transportation facilities)
- Proposed Road Configuration for the Main Street area; and,
- Phasing (as informed by the Development Staging and Sequencing Plan)

1.2.1.1 Framework Plan

The latest Framework Plan is provided in Appendix A, showing the latest considerations for lotting and land use implementation being considered by the landowners group. The Framework Plan and related Land Use Plan and Transportation Schedules were updated in the March 2024 version of this study to reflect a realignment of Humber Station Road that considers:

- Maintaining the character and alignment of existing Humber Station Road north of the Secondary Plan through the Greenbelt Lands; and
- Realigning Humber Station Road within the Secondary Plan to orient northwest towards the lands identified for urban expansion west of the CPKC (formerly named CPR).

A concept sketch that considers realignment of Humber Station Road is presented in **Appendix C** along with the Town's comments on the concept plan. A sightline design will be prepared with detailed design.

1.2.1.2 Road Cross-Sections

Further discussion on road cross-sections have commenced with the Town and are expected to continue as part of subsequent planning processes. Road cross-sections presented in Section 4.2 represent the latest considerations being considered with the Town as well as feedback documented as part of that process.

Overall cross-sections widths remain consistent with those identified for the Secondary Plan and related policies. Further discussion has been focussed on allocation of and programming of functions within the right-of-way.

Cycling facilities within the proposed cross-sections have also been further identified throughout the framework plan.



1.2.1.3 Main Street Road Configuration (Humber Station and Street D)

In coordination with the development of the proposed cross-sections and active transportation facilities, a propose “Main Street’ configuration has been identified for Humber Station Road and Street D within the Major Transit Station Area that will provide:

- a vibrant and close-knit environment;
- continuous cycling and pedestrian facilities;
- traffic calming measures that will deter cut-through traffic;
- on-street parking directly adjacent future street fronting commercial and restaurant uses; and,
- a design that allows for full closures of the Main Street area for community events and festivals.

The proposed design of this area is presented in Section 4.2. Humber Station Road is proposed to have a directional one-way closure between Street E and Street C that will deter cut-through traffic while maintaining access to main street businesses, allowing for a close-knit environment and suitably protecting for cycling and pedestrians throughout. When combined with limiting driveway access to parallel streets and because of the expansive grid-network provided within the Secondary Plan, the character and design of Humber Station in this Main Street section will also allow for full closures for community events and festivals.

1.2.1.4 Phasing

Sections 5.0 to 7.0 of this study (Traffic Volume Projections, Operations Analysis, and Signal Warrants) have been updated to reflect the latest Framework Plan statistics and phasing considerations proposed as part of the Development Staging and Sequencing Plan (DSSP).



1.3 RESPONSE TO COMMENTS

The latest available comments from Town of Caledon Transportation Engineering staff on the Caledon Station Secondary Plan and Transportation Study were received on November 7, 2023 and are summarized below with responses on behalf of Caledon Community Partners, consistent with the prior March 2024 update. Where progress has been made on phasing and cross-section design further details are provided.

The Town's comments are presented in four parts:

1. Introductory Comments
2. Urban Design Guidelines
3. Caledon Station Secondary Plan
4. General Comments

The Caledon Station Secondary Policies and related Schedules have been considerably progressed to incorporate the collaborative efforts of all parties providing input to the Secondary Plan. Where applicable, specific policies or policy sections have been referenced in Table 1 to complement the Response to Town staff and provide direct reference to related Secondary Plan level measures.

TABLE 1 TOWN COMMENT AND RESPONSE


Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
Introductory Comments / Context	Transportation Engineering has conducted an initial review of the Caledon Station Secondary Plan (June 2023) documents and provides the following general comments. Please be aware that more detailed technical comments may be provided during subsequent application phases, as applicable to each specific phase.	No further action is required at this time.	<i>7.16.4.3 Community-Wide Development Staging and Sequencing Plan (DSSP)</i>
	As part of subsequent applications, traffic management measures at intersections should be further reviewed and developed to ensure that they operate at an acceptable LOS to the Town's satisfaction.	Phasing analysis is presented in Sections 5.0 to 7.0 of this updated report indicated LOS as the community builds out. Individual traffic calming measures will be considered in consultation with the Town upon finalization of cross-sections in discussion with Town of Caledon staff.	<i>7.16.13.5 Transportation Demand Management</i> <i>7.16.13.2.6 Traffic calming measures will be considered with the advancement of development and plans of subdivision within the Plan Area.</i>

Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
	<p>All collector and arterial roads should have on-boulevard cycling facilities. Preference for MUT's on both sides of collector and arterial roads to serve both pedestrians and cyclists.</p>	<p>Further discussion on cross-sections have occurred since March 2024 that have progressed review of active transportation facilities.</p> <p>Notably, consensus on providing an in-boulevard multi-use trail on at least one side of the 22m collector road cross-sections and confirmation of preference for an in-boulevard cycling facility.</p> <p>This study outlines the latest cross-sections presented to the Town along with a diagram of proposed multi-use trail locations across the Secondary Plan.</p>	<p><i>7.16.13.8.1 Generally, the provision of sidewalks and all active transportation facilities in the Plan Area will be as follows:</i></p> <ul style="list-style-type: none"> <i>a) Town arterial and Collector roads: Sidewalks or a combination of sidewalk and multi-use trail will be provided on both sides of the road;</i> <i>b) Local Streets: Sidewalks will be provided on one side of the street unless otherwise directed by the Town; and,</i> <i>c) Laneways: No sidewalks will be required.</i> <p><i>7.16.13.2.1 Roads in the Plan Area are intended to develop and function in accordance with the guidelines and classifications outlined in the Official Plan. Where there is a conflict between the guidelines and classifications outlined under the Official Plan and of this section, the policies of this section will apply.</i></p> <p><i>7.16.13.2.2 Notwithstanding Policy 7.16.13.2.1, road right-of-way widths for the Plan Area, including Humber Station Road, will be established through future planning processes and detailed review including the DSSP, draft plans of subdivision and related Transportation Study, and may be area-specific and modified from right-of-ways established through the Town's Official Plan, and shall not require an amendment to this Plan</i></p>

Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
	<p>Transformers and streetlights should not be in the cycle tracks. Furthermore wider (2.0 m+) sidewalks should be proposed in busier areas to allow two wheelchairs (or strollers) to travel in opposing directions simultaneously without collision</p>	<p>Noted. Transformers and streetlights will not be proposed within cycling facilities.</p> <p>Acknowledged that 2.0m is the Town's preferred sidewalk width in busy locations.</p> <p>Per discussion with Town staff, sidewalks may be subject to review for collector and arterials in subsequent applications for where rationale may warrant a variation. i.e. Commercial areas, school zones and direct pathways to key destinations may warrant 2.0m+ width subject to context (i.e. school routes) or overlapping active transportation facilities (e.g. MUTs).</p> <p>This study outlines the latest cross-sections presented to the Town.</p>	<p><i>7.16.13.2.1 Roads in the Plan Area are intended to develop and function in accordance with the guidelines and classifications outlined in the Official Plan. Where there is a conflict between the guidelines and classifications outlined under the Official Plan and of this section, the policies of this section will apply.</i></p> <p><i>7.16.13.2.2 Notwithstanding Policy 7.16.13.2.1, road right-of-way widths for the Plan Area, including Humber Station Road, will be established through future planning processes and detailed review including the DSSP, draft plans of subdivision and related Transportation Study, and may be area-specific and modified from right-of-ways established through the Town's Official Plan, and shall not require an amendment to this Plan.</i></p>
	<p>Transportation Engineering has provided comments on information unavailable in the Transportation Study but present in the Urban Design Guidelines. Transportation Engineering would prefer these concerns highlighted to be addressed through the Transportation Study</p>	<p>This study outlines the latest cross-sections presented to the Town along with mapping (land use plan, transportation schedule, and active transportation mapping) that incorporate recommended transportation elements of the latest land use plan.</p>	<p><i>Schedule C-8 (Land Use Plan), Schedule C-8A (Transportation Schedule)</i></p>



Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
Urban Design Guidelines	Town Transportation Staff is supportive of only off-road trail connection Emil Kolb Parkway.	Based on discussion with the Town, a MUT along the east-west road right-of-way link to Emil Kolb Parkway will satisfy this comment. This link is identified on the active transportation mapping in this Transportation Study and delivery will be sufficiently addressed during future planning stages, in collaboration with Town Staff.	<p><i>7.16.13.6 Pedestrian and Cycling Network</i></p> <p><i>7.16.13.7 Recreational Trail Network</i></p> <p><i>7.16.13.1.2 A future road connection extending east from the Plan Area to connect to Emil Kolb Parkway will be encouraged. This connection provides a direct link to the GO Station Hub, and is an important vehicular and active transportation link, providing active transportation options to the trail network in the Greenbelt Plan Area north, east and west of the Plan Area, while at the same time alleviating vehicular congestion on the adjacent King Street and Humber Station Road corridors.</i></p>
	Town Transportation Staff is supportive of the proposed trail network link to the Greenbelt trail system.	Noted. No further action is required.	<p><i>7.16.13.1.2 A future road connection extending east from the Plan Area to connect to Emil Kolb Parkway will be encouraged. This connection provides a direct link to the GO Station Hub, and is an important vehicular and active transportation link, providing active transportation options to the trail network in the Greenbelt Plan Area north, east and west of the Plan Area, while at the same time alleviating vehicular congestion on the adjacent King Street and Humber Station Road corridors.</i></p>
	Town Transportation Staff is supportive of intersection signalization at Collectors to Collectors as well as Collectors to Arterials. This can be further developed as part of subsequent applications.	Policy language has been incorporated to reflect protection for signalization.	<p><i>7.16.13.2.9 The design of Town collector and Town arterial intersections will protect for future signalization. Signal warrants, and related design details of this will be confirmed as part of future Draft Plan of Subdivision process(es).</i></p>

Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
	<p>General bicycle parking rates should be proposed in line with nearby municipalities.</p> <p>It is noted that the detailed alignment for Humber Station Road in the northeast corner is to be determined through future studies at the later stage of approval process. Under interim and ultimate, the connectivity of Humber Station to the north, should be maintained.</p> 	<p>Policy language has been incorporated to reflect protection for development of specific requirements for bicycle parking.</p> <p>A revised alignment of Humber Station Road was submitted to the Town in November 2023. The Town reviewed and provided comments in December 2023.</p> <p>The submitted concept design and Town response is provided in Appendix C of this report.</p> <p>The revised alignment of Humber Station Road has been incorporated into the Caledon Station Framework Plan for Humber Station Road to tie-into the northeast corner of the Secondary Plan.</p> <p>Detailed design of this connection will be confirmed through future Draft Plan of Subdivision process(es) per policies incorporated for the Secondary Plan.</p>	<p><i>7.16.13.5.3 The Town may establish specific requirements in its zoning by-law for maximum parking standards, shared parking, bicycle parking, carpool parking and end-of-trip facilities, such as bike racks, showers and bicycle storage, to further promote modes of transportation other than the single- occupant vehicle.</i></p> <p><i>7.16.13.2.1 Roads in the Plan Area are intended to develop and function in accordance with the guidelines and classifications outlined in the Official Plan. Where there is a conflict between the guidelines and classifications outlined under the Official Plan and of this section, the policies of this section will apply.</i></p> <p><i>7.16.13.2.2 Notwithstanding Policy 7.16.13.2.1, road right-of-way widths for the Plan Area, including Humber Station Road, will be established through future planning processes and detailed review including the DSSP, draft plans of subdivision and related Transportation Study, and may be area-specific and modified from right-of-ways established through the Town's Official Plan, and shall not require an amendment to this Plan.</i></p>

Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
Caledon Station Secondary Plan	Please revise the mentioned sidewalk policy to include all active transportation facilities. Please ensure that accurate information regarding ROW for local, collector, and arterial roads are used to inform this section.	Cross-sections presented in the Urban Design Guidelines and Transportation Study include all modes.	<p><i>7.16.13.8.1 Generally, the provision of sidewalks and all active transportation facilities in the Plan Area will be as follows:</i></p> <ul style="list-style-type: none"> <i>a) Town arterial and Collector roads: Sidewalks or a combination of sidewalk and multi-use trail will be provided on both sides of the road;</i> <i>b) Local Streets: Sidewalks will be provided on one side of the street unless otherwise directed by the Town; and,</i> <i>c) Laneways: No sidewalks will be required.</i> <p><i>7.16.13.2.4 Other implementation and design details with respect to the conceptual road network in the Plan Area, as may be suggested by the final Caledon Station Transportation Study, the respective municipal class environmental assessments if necessary and Caledon Station Community Design Plan, will be considered in the preparation of the community-wide DSSP.</i></p>
General Comments	Please note that as the applicant advances through subsequent application phases, additional comments may be provided that are specific to the nature of those applications. We encourage the applicant to proactively engage with Town Transportation for the development of advisory comments that may not be directly related to the current application	Noted. No further action is required.	N/A
	Please note that a phasing plan for the Transportation Infrastructure could be requested to be reviewed by transportation after the OPA approval.	Noted, a phasing study has been completed (DSSP) and this study incorporates an analysis of Phases.	<i>7.16.4.3 Community-Wide Development Staging and Sequencing Plan (DSSP)</i>

Topic	Town Comment (November 7, 2023, Transportation Engineering)	Response on Behalf of Caledon Community Partners	Related Secondary Plan Policy
	<p>Transportation Engineering reserves the right for additional comments based on a revised submission. Transportation Engineering requests that the Traffic Consultant provide a response letter with the re-submission package clearly reiterating the Town's comments in order and including details for how each comment has been addressed.</p>	<p>This updated report has been prepared to:</p> <ul style="list-style-type: none"> - reiterate the Town's comments; - provide updated plans and schedules; - present preferred cross-sections for the Secondary Plan; - presenting phasing analysis results for the Secondary Plan, and; - provides for the ways in which each comment has been addressed. 	N/A

1.4 PRELIMINARY FRAMEWORK PLAN

A new mixed-use community, Caledon Station, is proposed on the Subject Lands, comprising of about 6,400 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 (C-8), Preliminary Framework Plan, and Transportation Schedule (Schedule C-8a) for Caledon Station are provided in **Appendix A**. The Framework Plan (May 2024) for entirety of the lands is also illustrated below.



The proposed Caledon Station Community is bounded to the east by the Canadian Pacific Kansas City (CPKC) 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 western limits 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 adopted OP and MMTMP is also made, where applicable.

- The approved Region of Peel updated its 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 Multi Modal Transportation Master Plan (MMTMP) that includes urban boundary expansion and an MTSA associated with a Caledon GO Station.

Roads within the Secondary Plan are subject to future detailed design as part of coordination between the Community-Wide Development Staging and Sequencing Plan (DSSP), Environmental Studies (where required) and coordination with area growth related findings of the MMTMP and the RTMP 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 to 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 MMTMP has identified a new east-west collector road extending west from Emil Kolb to west of The Gore Road (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 northern municipal boundary with Simcoe County to Mayfield Road at Caledon's southern municipal boundary with the City of 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 adopted OP. Specific concept 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. The Town's MMTMP (PIC #2) also identifies Humber Station Road to have separated cycling facilities in future.

See Section 4.2 for further details on proposed Conceptual Community Cross Sections.

- The character of Humber Station Road, through the 'Main Street' portion of the Caledon Station Secondary Plan is proposed to take on a close-knit character with directional closures (one-way segments) that will maintain vehicle access, allow for continuous cycling and pedestrian access, while also allowing for full closures for community events and festivals.
- Humber Station Road is proposed to align northwest at the north end of the Secondary Plan, towards the plan urban growth areas. Existing Humber Station (that traverses the Greenbelt lands), north of the Secondary Plan is proposed to tie into future Humber Station as a local road.

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

2.1.1.5 New East-West Collector Road

The Town MMTMP has also identified a new east-west collector road extending west from Emil Kolb to west of The Gore Road (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 weekday AM and PM peak hours, operated by Brampton Transit. The nearest stop on the route is approximately 3 km southeast of the Secondary Plan lands.

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 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 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 MMTMP the need for a Transit Strategy Study to establish a governance structure and develop a long term service plan.

2.2.1 Mode Share Targets

While the 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 Town's 2024 MMTMP identifies 87% based on 2016 data. Caledon's mode share targets are to reach 68% (2041) and 60% (2051) auto. The remaining share assigned to active transportation, carpool, transit, and other.

The Caledon Station Secondary Plan and MTSA is an ideal area to build infrastructure that will directly encourage the transit and non-auto trips in alignment with the Region and Town'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 CPKC Railway. 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 its adopted OP and 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 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 Highway 413 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 employment zones located between Caledon Station Community and Mayfield Road. Not only will these bus services provide employees 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.

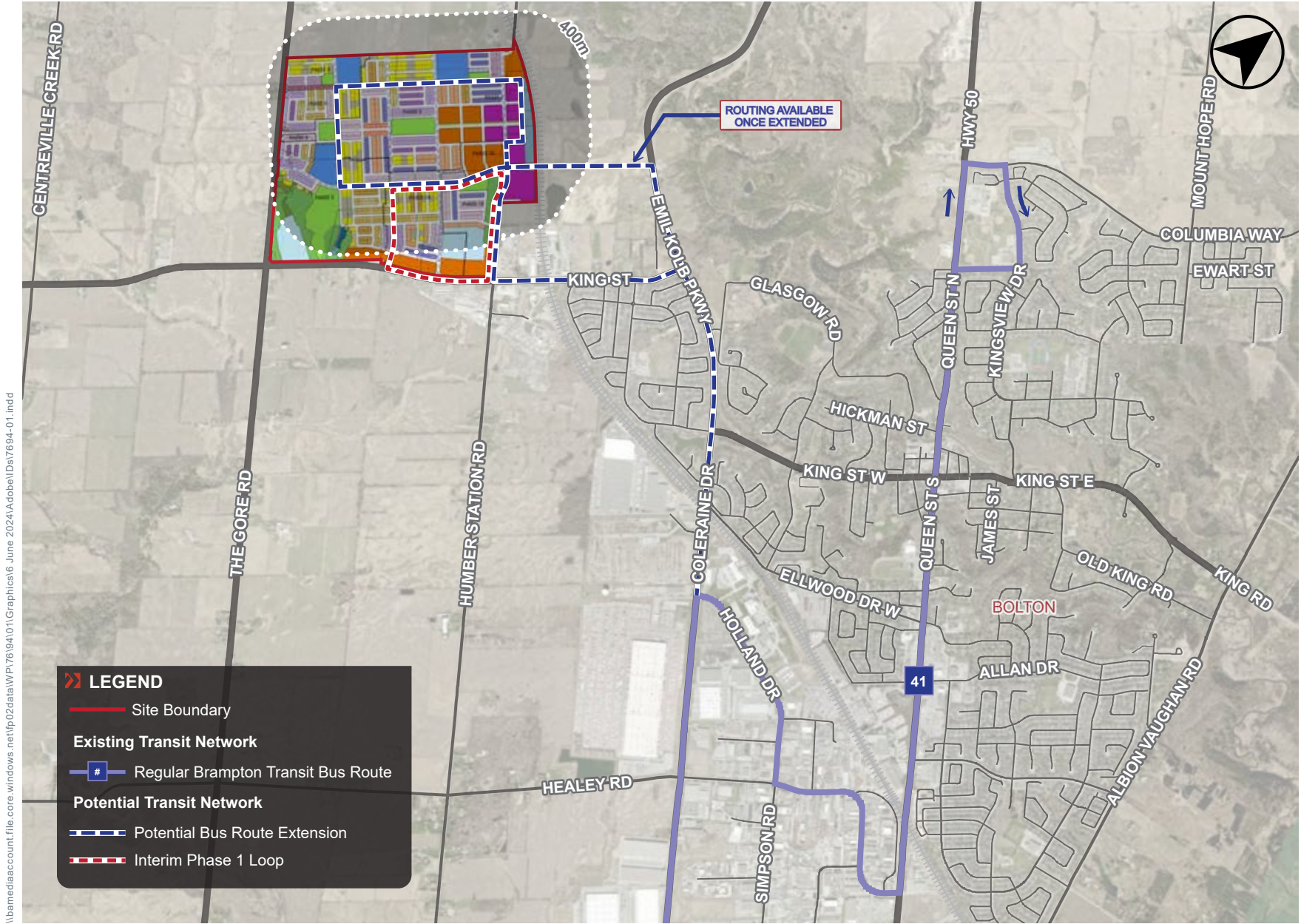
The Town has also identified several opportunities for transit routing in their MMTMP 2051 Transit Network including along The Gore, Emil Kolb Parkway, King Street, Humber Station Road and the future GO rail line.

Cross-sections for all collector roads within 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 all future residents of the community to local bus or shuttle service connecting to Caledon GO Station and Bolton/Brampton.

3.2.1 Interim Bus Service

The Town of Caledon recently launched bus service in Bolton, provided by the Brampton Transit. An extension of this service has been illustrated in Figure 3, demonstrating implementation that could occur in the near-term (Phase 1) to implement bus service within the Caledon Station Secondary Plan. More direct and frequent service would occur as the GO Station is developed and when the Town implements a transit strategy for the SABE lands that have been incorporated into the Official Plan.



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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 3 POTENTIAL INTERIM TRANSIT ROUTE

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 designed to fully support several types of cycling.

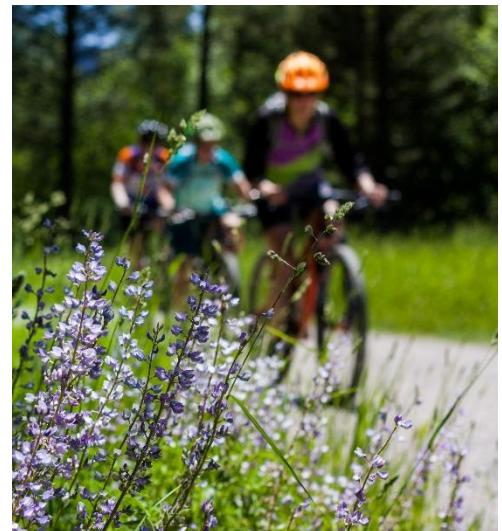
Recreational cycling connections will allow residents to fully utilize existing and future cycling facilities along Emil Kolb Parkway, the Humber Valley Heritage Trail, the Caledon Trailway and facilities in the Bolton Resource Management Tract (TRCA) located immediately north of Bolton and Albion Hills 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 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 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.
- Consistent with the Town MMTMP and ATMP, protected intersection design will be considered at collector / collector intersections.

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

Ridesharing services (such as Uber and Lyft) 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

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.

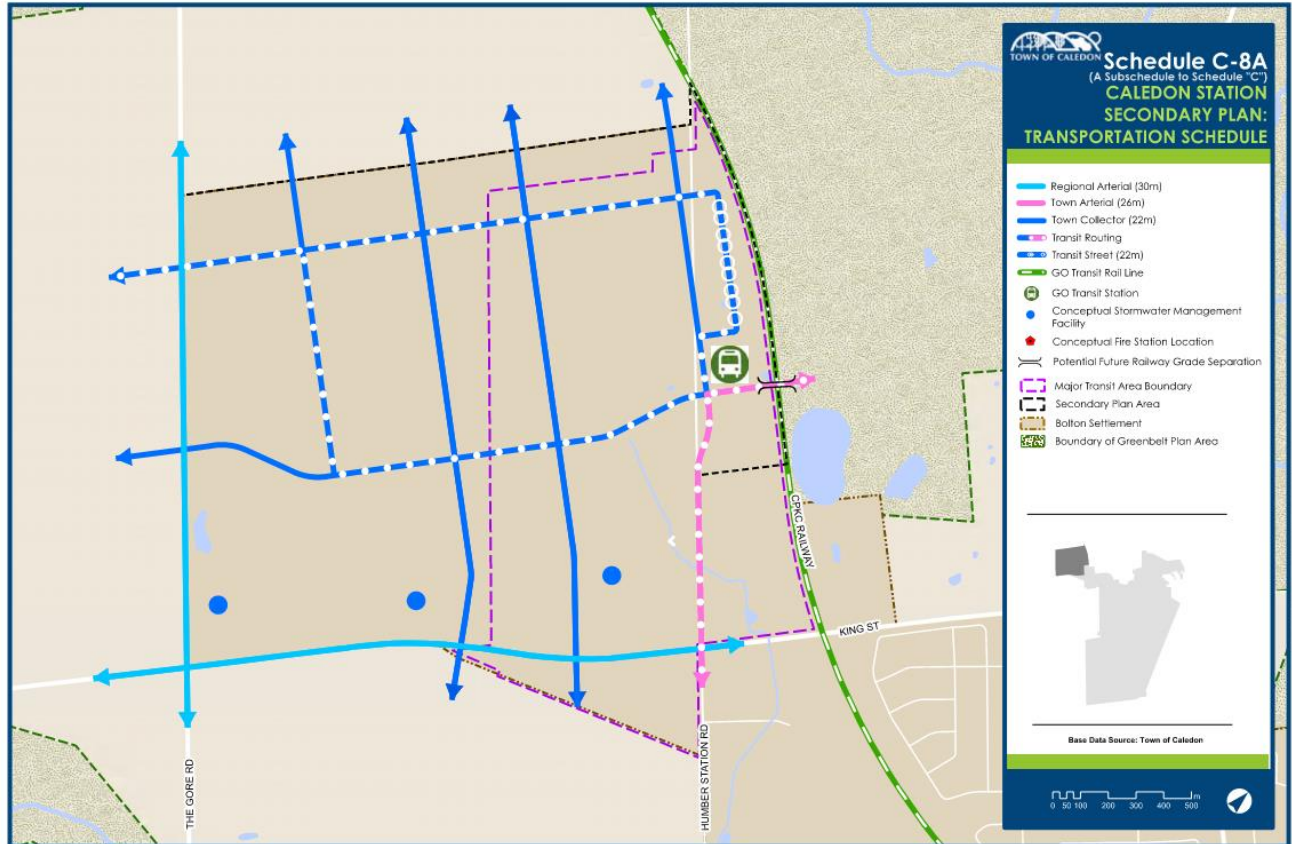
Key to the transportation infrastructure proposed for the community is:

- the layout of roads to provide direct and distributed access;
- road cross sections that have been developed in concept 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 concept 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 off road/separated cycle route 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 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 CPKC 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 and is consistent with the conceptual road connectivity identified in the Town's adopted OP (Schedule F1).

The Active Transportation Network (provided in Appendix D) 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, including a directional closure along Humber Station to support a traffic calmed 'Main Street' environment that also supports a vibrant close-knit environment, continuous cycling and pedestrian connections, and on-street parking while also allowing for occasional closures for community events and festivals. 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 OP. This also plans for minimal disruption on either side of Humber Station where it traverses the Greenbelt lands.

4.2 CONCEPTUAL 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.

The cross-sections outlined below are concepts developed on behalf of Caledon Community Partners that imagine a compact, pedestrian, cyclist-friendly and transit-oriented context. The current Secondary Plan process has not finalized the right-of-way being protected for Caledon Station and is expected to be established at a stage following Secondary Plan approval. Future planning processes (DSSP, EA, or other processes - as required) are expected to establish area-specific cross-sections for Caledon Station that will support the Secondary Plan.

These road sections are subject to ongoing discussions and future detailed design review.

Caledon Community Partners, their consultants, and the Town staff met twice in May 2024 to discuss cross-section options with the Town, and specifically the Caledon Station Secondary Plan.

A brief summary of our discussions are provided below:

- In-boulevard cycling facilities on collector and arterial roads are to be provided.
- Multi-use paths are to be considered on at least one side of collector roads. Consider multi-use paths on both sides in context with the Land Use Plan and Landscape cross-section elements. The context for which one vs. two-sides is implemented is subject to further review and this study outlines potential locations for application of these facilities.
- East-west cycling facilities are to be provided adjacent to the central park (within the 14m one-way street boulevard) to facilitate active transportation connections while maintaining a separation between commuting cyclists and programmed trails/pathways within the park.
- J.U.C may be provided beneath sidewalks.
- Soil cells may be considered in urban contexts.
- Collector Sections illustrate 3.5m multi-use pathways. A minimum of 3m may be considered where two-sides are provided.

In addition to the above, and as discussed in consultation with Town staff, we recommend implementing:

- a raised and continuous multi-use path and sidewalks where collector roads cross local roads and private driveways consistent emerging best practices for complete streets; and,
- protected intersection design at collector / collector intersections.

The latest Preferred and Proposed Cycling Facility Alignments and Location within Public Rights-of-Way are illustrated in Appendix D.

4.2.1 Arterial and Collector Roads

4.2.1.1 Humber Station Road

Humber Station Road (King Street to Street E)

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 Road 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 within the boulevards.

The latest proposed cross-section for Humber Station Road is presented in Figure 4.

Humber Station Road (Street E to Street C, Main Street District)

Humber Station Road, between Street E and Street C, is proposed to serve a 'Main Street' function with special character that is close-knit with directional closures (one-way segments) that will maintain vehicle access, allow for continuous cycling and pedestrian access, while also allowing for full closures for community events and festivals.

Driveway access is proposed to be restricted in the segment of Humber Station and Street D that make up the "Main Street" character area to allow for occasional full closures and to promote commuter traffic to utilize local roads for access.

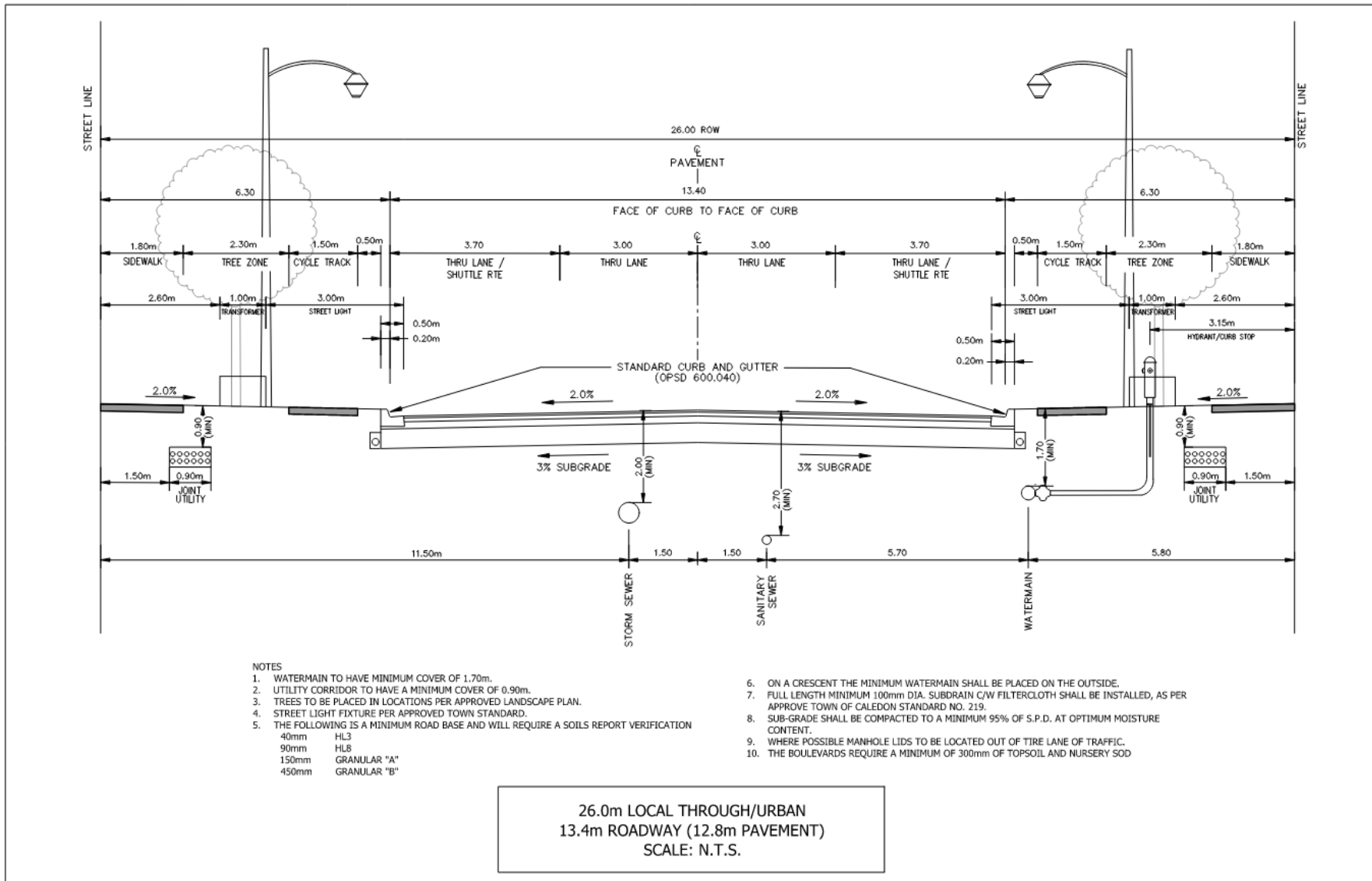
The extensive and close-knit grid-network within Caledon Station allows for directional closures to be an effective measure of traffic calming in this area of the Secondary Plan.

Humber Station Road (Street C to North Limits of Secondary Plan)

Humber Station Road is proposed to extend northwest from Street C as a 22m right-of-way, consistent with the collector cross-sections throughout the Secondary Plan that have two lanes of vehicle traffic, one side of parking, multi-use trail, and sidewalk. See Figure 5.

4.2.1.2 East-West Link Road

While the East-West link to Emil Kolb is also protected for a 26 metres right-of-way, it differs from Humber Station Road in that it is proposed to have sidewalks on one side of the East-West Link Road, multi-use path on one-side, and two-vehicular lanes.



Source: Urbantech

FIGURE 4: 26 METRE CROSS-SECTION: HUMBER STATION ROAD (SOUTH OF GO STATION)



4.2.1.3 Collector Roads, Including Multimodal Ring Road

The concept 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 and sidewalks on the other side.

In discussion with Town staff, multi-use paths are to be considered on at least one side of collector roads and consider on both sides in context with the neighbouring community, Land Use Plan and Landscape cross-section elements.

The context for which one vs. two-sides is proposed to be implemented is illustrated in Appendix D. One-sided multi-use trails are proposed within the Secondary Plan on community collector roadways. The East-West road (Street Y) is proposed to have two-sided multi-use trail facilities given it's direct connection with the GO Station and urban growth lands further west. The location of multi-use trail in all other locations has been chosen to coincide with locations that neighbour schools, parks, and medium density blocks where direct access is convenient to users and conflicts are minimized with private driveways.

The cross section also provides full 1.8 m sidewalks on one side.

The roadway is provided with 8.8 m of pavement (9.4 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.

The latest proposed cross-section for Collector Roads is presented in Figure 5.

4.2.1.4 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 concept cross-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 12.3 m of pavement (12.9 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.

The latest proposed cross-section for the Transit Mall Collector Road is presented in **Figure 6**.

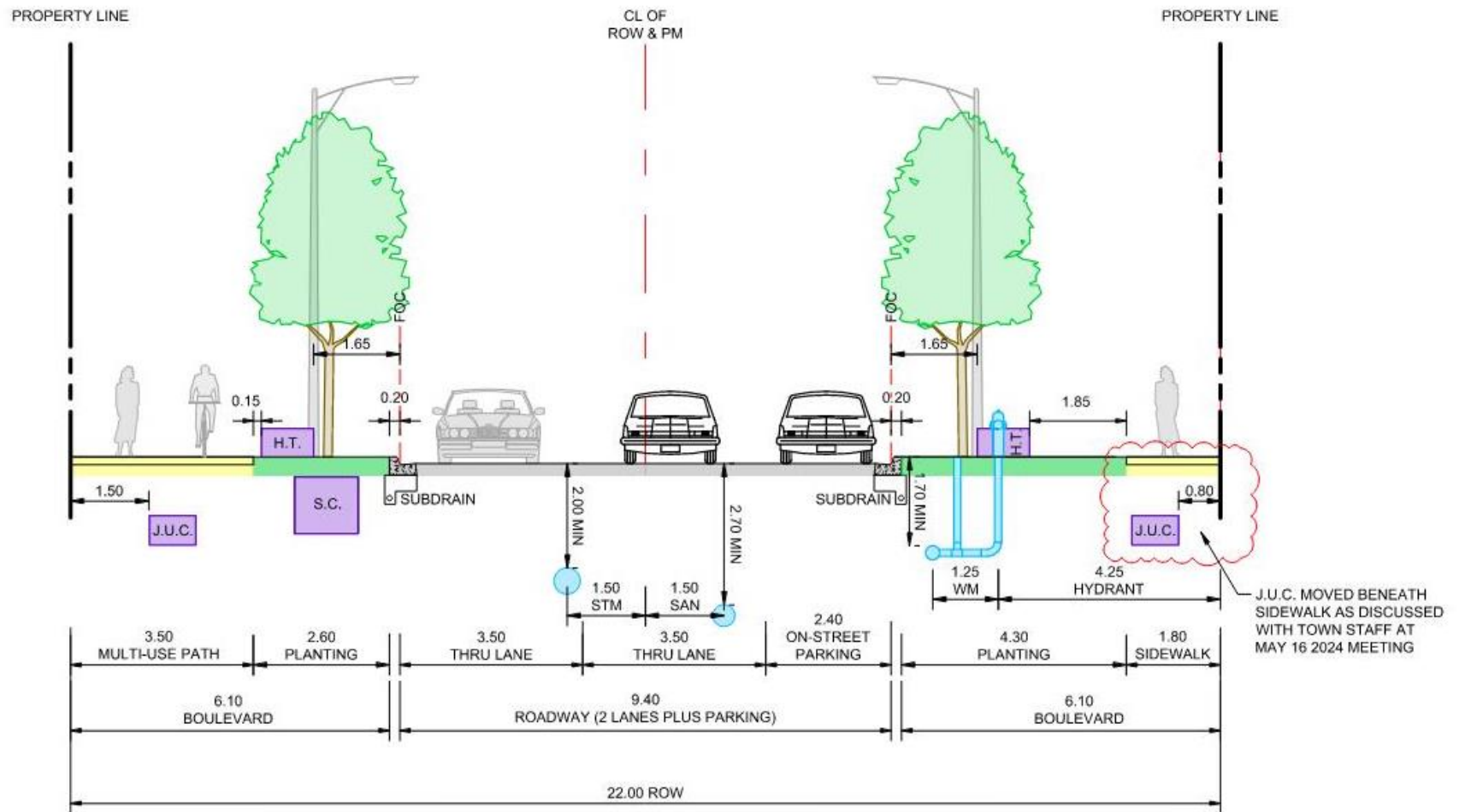


FIGURE 5: 22 METRE CROSS-SECTION: COLLECTOR ROADS

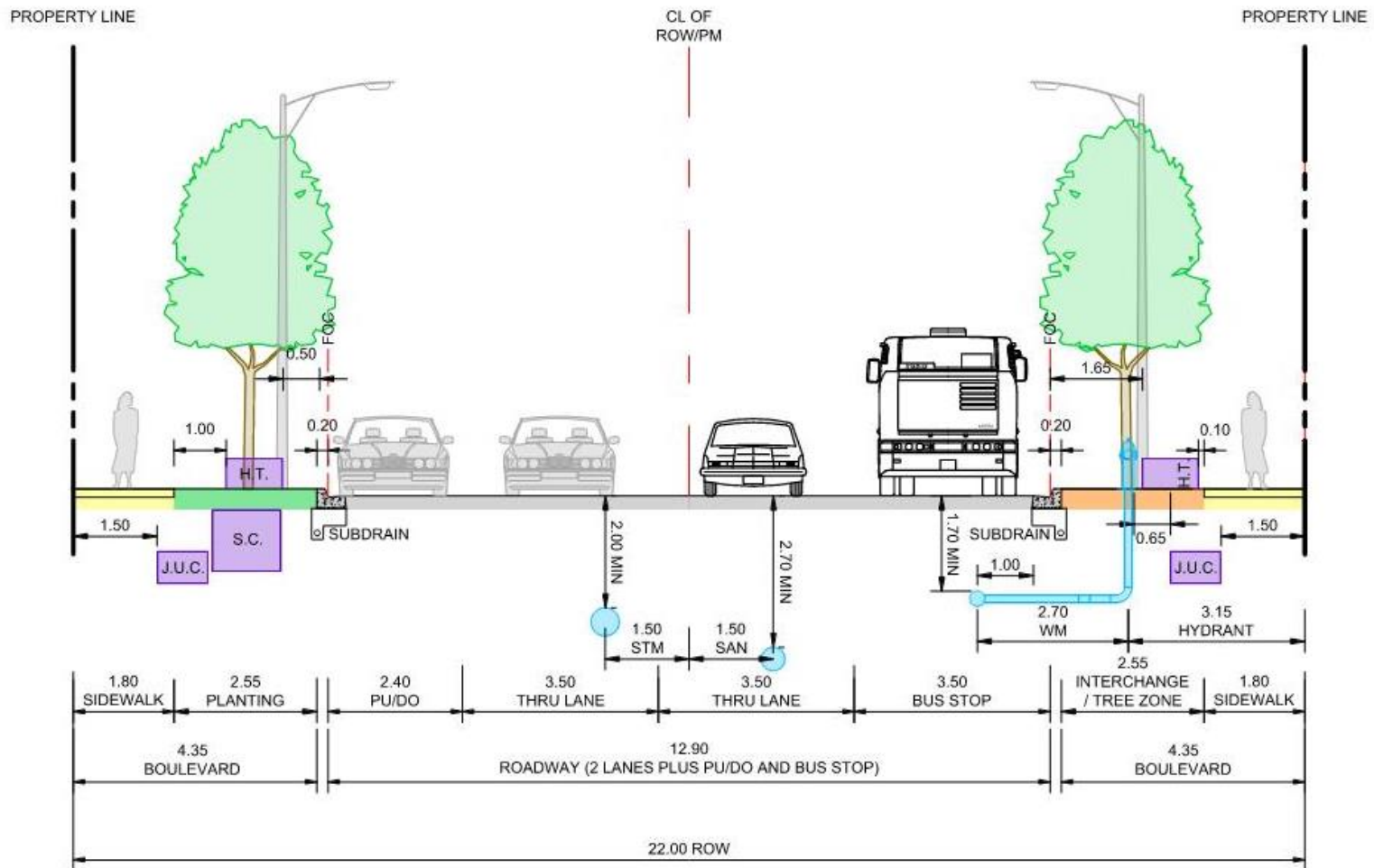


FIGURE 6: 22 METRE CROSS-SECTION: TRANSIT MALL COLLECTOR ROAD

4.2.2 Local Roads

There are several concept cross-sections widths proposed for local roads: 18 m, 16m, 14m, and 8m laneway – each were recently also discussed with Town staff:

- 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. These unique sections are illustrated in

A full set of local road cross-sections have been included in **Appendix D**.

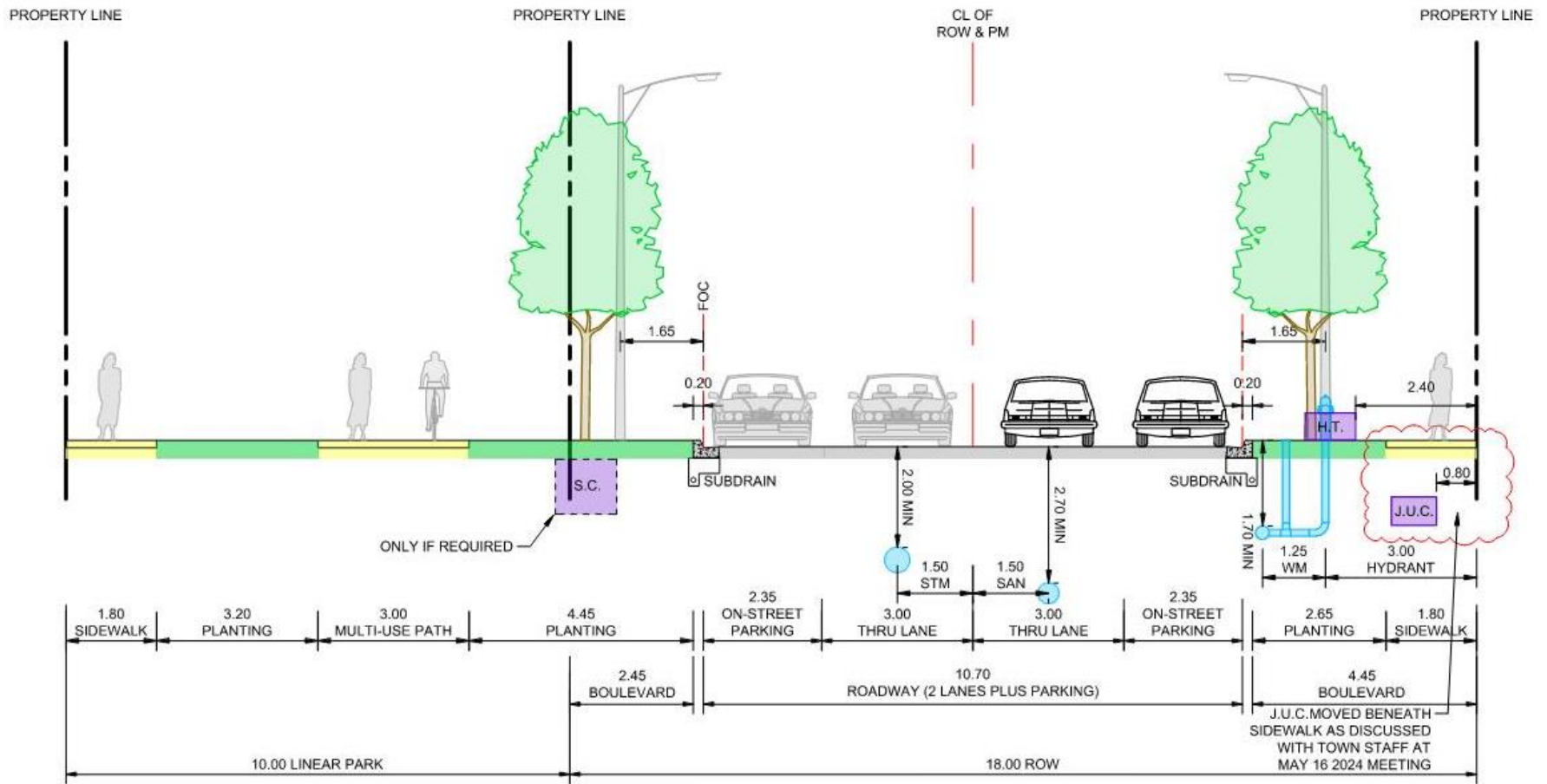


FIGURE 7: 18 METRE CROSS-SECTION: ADJACENT TO LINEAR PARK



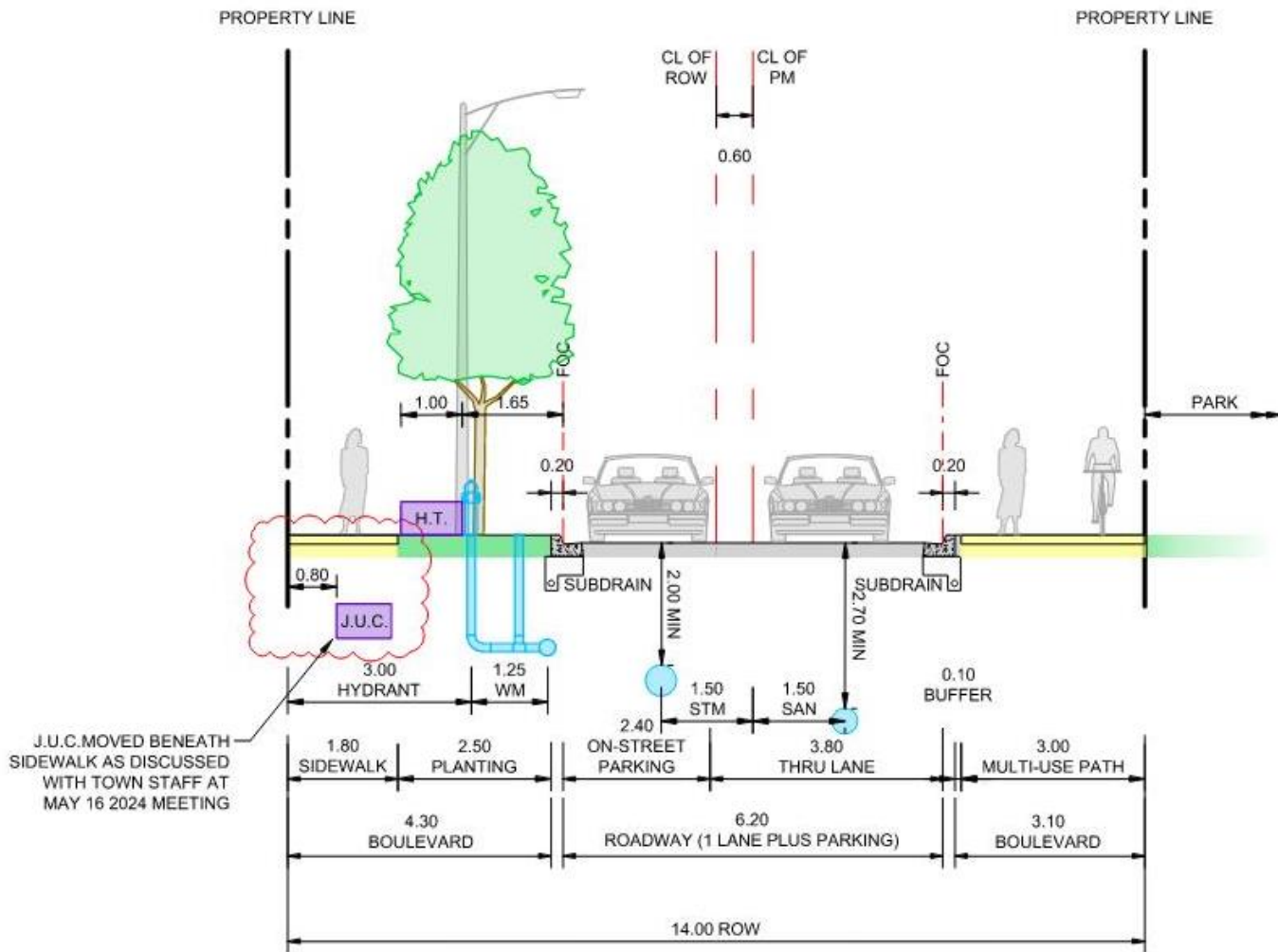


FIGURE 8: 14 METRE CROSS-SECTION: ONE-WAY, ADJACENT TO CENTRAL PARK

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 CPKC 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 CPKC 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 Background Study. The 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 CPKC 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 CPKC rail line 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 CPKC line, adjacent to the future GO transit station.

The purpose of this road link is to provide an alternative and direct 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, CPKC 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 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 CPKC line for the same reasons as the King Street crossing.

5.0 TRAFFIC VOLUME PROJECTIONS

The Secondary Plan is proposed to be built in phases, consistent with the Development Staging and Sequencing Plan (DSSP) and is generally illustrated in Figure 9 below.

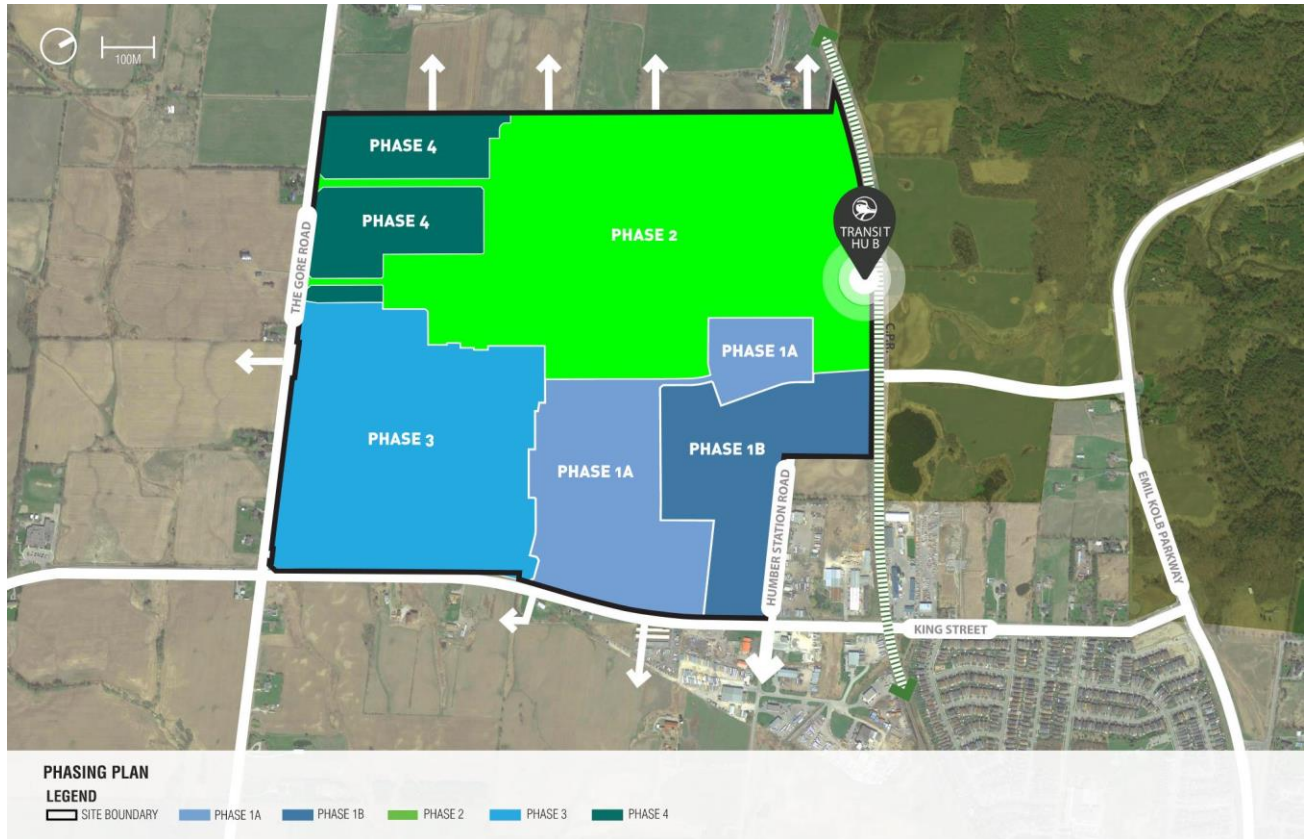


FIGURE 9: DEVELOPMENT STAGING AND SEQUENCING PLAN PHASING

5.1 SCOPE

Full build-out of the site has been assumed for a 2041 horizon. The timeframes of Phases 1 and 2 are unknown at this stage, however for the purpose of analysis it has been assumed that they would progress sequentially and a 2031 horizon has been adopted for both horizons. Analysis has therefore been completed for the following scenarios during the AM and PM peak hour:

- Existing Conditions
- Future Background Conditions (2031)
- Future Background Conditions (2041)
- Future Total Conditions – Phase 1 (2031)
- Future Total Conditions – Phase 2 (2031)
- Future Total Conditions – Full Build-out (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 (Unsignalized in Phases 1 and 2, Signalized at Full Build-Out);
- 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 10** and future lane configurations are shown in **Figure 11**, **Figure 12** and **Figure 13** for Phase 1, Phase 2 and full build-out respectively.

Future lane configurations notably account for potential future signals at a number of collector/collector road intersections. Each collector / collector road intersection is recommended to be designed such that signalization can be implemented if or when needed. Full Buildout has assumed signalization. However, the gradual buildout of the Secondary Plan will determine individual intersection needs and protecting for and constructing signals only when warranted will appropriately address the community's needs and will mitigate risks associated with increased speeds through signalized intersections (as compared to all-way stop control) if never warranted/required.

The one-way directional closure on Humber Station Road proposed in Section 4.2.1.1 is not specifically tested in the future Secondary Plan road configuration. However, the relative traffic volumes across the fine-grained grid-network on the plan have been assessed for the ability to accommodate a directional closure. See Section 5.4.6 Section 6.0 for commentary on the proposed redistribution of traffic and resultant operations.

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 2**.

Existing traffic volumes are shown in **Figure 14** and the raw data is attached in **Appendix E**.

TABLE 2 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 3**.

For the purpose of analysis, the GO station is assumed to not be constructed in the Phase 1 scenario, but will be constructed for the Phase 2 and full build-out scenarios. For the Phase 2 scenario, a parking supply of 600 spaces is assumed, while the ultimate 1,200 spaces are assumed for the full build-out scenario.

The resultant projected GO Station vehicle trip generation is summarized in **Table 4** and **Table 5** for the Phase 2 and full build-out scenarios respectively. 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 5.4.4.2**.
- 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 scenarios, 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 15** and **Figure 16** for the Phase 2 and full build-out scenarios respectively.

The assignment of the site-related GO trips at Future Total are discussed in further detail in **Section 5.4.3.2** and **Section 5.4.4.2** for the Phase 2 and full build-out scenarios respectively.

TABLE 3 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:

- 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 4 PHASE 2 GO STATION VEHICLE TRIP GENERATION – 2031

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Parking Lot	600 spaces	0.35	0.01	0.36	0.03	0.35	0.38
		212	7	219	18	211	229
Pick Up / Drop Off	600 spaces	0.13	0.12	0.25	0.10	0.11	0.21
		78	72	150	60	66	126
Total Vehicle Trips		290	79	369	78	277	355
To/From Internal Residential (Vehicle Trips) ¹		15	5	20	10	16	26
<i>Pass-by Internal Residential to External Work AM & Pass-by External work to Internal Residential PM (Vehicle Trips)²</i>	<i>0% In & 50% Out AM 50% In & 0% Out PM</i>	0	3	3	5	0	5
<i>To/from Internal Residential (Vehicle Trips)³</i>	<i>100% In & 50% Out AM 50% In & 100% Out PM</i>	15	3	18	5	16	21
Total Internal Vehicle Trips		15	3	18	5	16	21
Total External Vehicle Trips		275	77	351	73	261	334

Notes:

1. As outlined in the residential vehicle trip generation calculations outlined in **Section 5.4.3.2.**
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

TABLE 5 FULL BUILD-OUT GO STATION VEHICLE TRIP GENERATION – 2041

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	1,200 spaces	0.13	0.12	0.25	0.1	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		59	20	79	38	63	101
<i>Pass-by Internal Residential to External Work AM & Pass-by External work to Internal Residential PM (Vehicle Trips)²</i>	<i>0% In & 50% Out AM 50% In & 0% Out PM</i>	0	10	10	19	0	19
<i>To/from Internal Residential (Vehicle Trips)³</i>	<i>100% In & 50% Out AM 50% In & 100% Out PM</i>	59	10	69	19	63	82
Total Internal Vehicle Trips		59	10	69	19	63	82
Total External Vehicle Trips		521	148	669	137	492	629

Notes:

1. As outlined in the residential vehicle trip generation calculations outlined in **Section 5.4.4.2**
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 6**. Corridor growth traffic volumes are shown in **Figure 17** and **Figure 18** for the 2031 and 2041 horizons respectively.

TABLE 6 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 19**, **Figure 20** and **Figure 21** for the Phase 1, Phase 2 and full build-out scenarios respectively.

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**.

5.4.2 Phase 1 Site Vehicle Trips

5.4.2.1 Phase 1 Residential Vehicle Trips

Base residential vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Table 7**. The adopted rates were applied to Phase 1 of the proposed development, as shown in **Table 8**. For the purpose of analysis, the following additional assumptions have been made:

- 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.

Phase 1 residential site traffic volumes are shown in **Figure 22**.

TABLE 7 BASE RESIDENTIAL VEHICLE TRIP GENERATION RATES

Land Use	Land Use Code (ITE 11 th 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 8 PHASE 1 SITE RESIDENTIAL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Detached Dwelling	776 dwellings	0.18	0.52	0.70	0.59	0.35	0.94
		141	402	543	460	270	729
Low-Rise Residential	721 dwellings	0.10	0.30	0.40	0.32	0.19	0.51
		69	219	288	232	136	368
Mid-Rise Residential	575 dwellings	0.09	0.28	0.37	0.24	0.15	0.39
		49	164	213	137	87	224
Base Vehicle Trip Generation	2,072 dwellings	259	785	1,044	828	493	1,321
Work From Home Reduction ¹	5%	13	39	52	41	25	66
Adjusted Vehicle Trips		246	746	992	787	469	1,255

Notes:

1. 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.

5.4.2.2 Phase 1 Total Vehicle Trip Generation

The resultant projected vehicle trip generation for Phase 1 of the proposed development is summarized in **Table 9**.

TABLE 9 PHASE 1 SITE TOTAL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Residential							
External Vehicle Trips	2,072 dwellings	246	746	992	787	469	1,255

5.4.3 Phase 2 Site Vehicle Trips

5.4.3.1 Phase 2 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. Phase 2 site-related GO Station traffic was distributed based on the proposed distribution of residential density within the Site, and is shown in **Figure 23**.

5.4.3.2 Phase 2 Residential Vehicle Trips

Base residential vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Section 5.4.2.1**. The adopted rates were applied to Phase 2 of the proposed development, as shown in **Table 10**. 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 schools were considered, as outlined within **Section 5.4.3.3**;
- A 5% reduction was applied to account for work from home, consistent with Phase 1.

Phase 2 residential site traffic volumes are shown in **Figure 24**.

TABLE 10 PHASE 2 SITE RESIDENTIAL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Detached Dwelling	2,269 dwellings	0.18	0.52	0.7	0.59	0.35	0.94
		413	1175	1,588	1344	789	2,133
Low-Rise Residential	1,238 dwellings	0.10	0.30	0.4	0.32	0.19	0.51
		119	376	495	398	234	631
Mid-Rise Residential	1,697 dwellings	0.09	0.28	0.37	0.24	0.15	0.39
		144	483	628	404	258	662
Base Vehicle Trip Generation	5,204 dwellings	676	2,035	2,711	2,145	1,281	3,426
Car Share and Local Transit Mode Shift ¹	7.5%	51	153	203	161	96	257
To/From Internal GO Station ¹	7.5%	51	153	203	161	96	257
<i>Walking Trips²</i>	<i>90%</i>	<i>46</i>	<i>137</i>	<i>183</i>	<i>145</i>	<i>86</i>	<i>231</i>
<i>Vehicle Trips²</i>	<i>10%</i>	<i>5</i>	<i>15</i>	<i>20</i>	<i>16</i>	<i>10</i>	<i>26</i>
To/From Internal Elementary School (Vehicle Trips) ³		26	30	56	6	6	12
Total Internal Vehicle Trips		31	45	76	23	15	38
Total External Vehicle Trips		549	1,700	2,249	1,817	1,083	2,900
Work From Home Reduction ⁴	5%	27	85	112	91	54	145
Adjusted External Vehicle Trips		522	1,615	2,137	1,726	1,029	2,755

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 90% of subdivision residential density)
3. As outlined in the school vehicle trip generation calculations in **Section 5.4.3.3**. Walking trips to/from the schools have conservatively not been deducted from the residential trip generation.
4. 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.

5.4.3.3 Phase 2 School Vehicle Trips

Base school vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Table 11**. The subsequent projected Phase 2 school vehicle trip generations are outlined in **Table 12**.

It is expected that the proposed school 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 school in Phase 2 will be associated with residents of the proposed subdivision. The majority of Phase 2 is within 800 metres of the school. 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.

Phase 2 school site traffic volumes are shown in **Figure 25**.

TABLE 11 BASE ELEMENTARY SCHOOL VEHICLE TRIP GENERATION RATES

Land Use	Land Use Code (ITE 11 th 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 PHASE 2 SITE ELEMENTARY SCHOOL TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Elementary School		0.4	0.34	0.74	0.07	0.09	0.16
Base Vehicle Trip Generation	500 students¹	200	170	370	37	43	80
To/From Internal Residential (Walking Trips) ²	85%	170	145	315	31	37	68
Total Vehicle Trips	15%	30	26	56	6	6	12
<i>Pass-by Internal Residential to External Work AM & Pass-by External work to Internal Residential PM (Vehicle Trips)³</i>	<i>0% In & 60% Out AM 60% In & 0% Out PM</i>	0	15	15	3	0	3
<i>To/from Internal Residential (Vehicle Trips)⁴</i>	<i>100% In & 40% Out AM 40% In & 100% Out PM</i>	30	10	40	2	6	9
Total Internal Vehicle Trips		30	10	40	2	6	9
Total External Vehicle Trips		0	15	15	3	0	3

Notes:

1. Assume 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

5.4.3.4 Phase 2 Total Trip Generation

The resultant projected Phase 2 vehicle trip generation for the Site is summarized in **Table 13**.

TABLE 13 PHASE 2 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	5,204 dwellings	31	45	76	23	15	38
External Vehicle Trips		522	1,615	2,137	1,726	1,029	2,755
Elementary School							
Internal Vehicle Trips	500 students	30	10	40	2	6	9
External Vehicle Trips		0	15	15	3	0	3

5.4.4 Full Build-Out Vehicle Trips

5.4.4.1 Full Build-Out 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. Full build-out site-related GO Station traffic was distributed based on the proposed distribution of residential density within the Site, and is shown in **Figure 26**.

5.4.4.2 Full Build-Out Residential Vehicle Trips

Base residential vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Section 5.4.2.1**. The adopted rates were applied to the full build-out of the proposed development, as shown in **Table 14**. 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, and population within 800 metres of the Station would walk, consistent with Phase 2;
- Internal trips associated with the proposed retail and schools were considered, as outlined within **Sections 5.4.4.3** and **5.4.4.4** respectively;
- A 5% reduction was applied to account for work from home, consistent with Phases 1 and 2.

Full build-out residential site traffic volumes are shown in **Figure 27**.

TABLE 14 FULL BUILD-OUT SITE RESIDENTIAL VEHICLE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Detached Dwelling	3,316 dwellings	0.18	0.52	0.7	0.59	0.35	0.94
		604	1718	2,321	1964	1153	3,117
Low-Rise Residential	1,388 dwellings	0.10	0.30	0.4	0.32	0.19	0.51
		133	422	555	446	262	708
Mid-Rise Residential	1,697 dwellings	0.09	0.28	0.37	0.24	0.15	0.39
		144	483	628	404	258	662
Base Vehicle Trip Generation	6,401 dwellings	881	2,623	3,504	2,813	1,673	4,487
Car Share and Local Transit Mode Shift ¹	7.5%	66	197	263	211	126	337
To/From Internal GO Station ¹	7.5%	66	197	263	211	126	337
<i>Walking Trips²</i>	<i>70%</i>	<i>46</i>	<i>138</i>	<i>184</i>	<i>148</i>	<i>88</i>	<i>236</i>
<i>Vehicle Trips²</i>	<i>30%</i>	<i>20</i>	<i>59</i>	<i>79</i>	<i>63</i>	<i>38</i>	<i>101</i>
To/From Internal Retail (Walking Trips) ³		19	31	51	74	72	146
To/From Internal Retail (Vehicle Trips) ³		8	13	22	32	31	63
To/From Internal Elementary School (Vehicle Trips) ⁴		77	90	167	19	17	36
Total Internal Vehicle Trips		105	162	267	114	85	199
Total External Vehicle Trips		645	2,095	2,740	2,266	1,303	3,569
Work From Home Reduction ⁵	5%	32	105	137	113	65	178
Adjusted External Vehicle Trips		613	1,990	2,603	2,153	1,238	3,391

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 70% of subdivision residential density)
3. As outlined in the retail vehicle trip generation calculations in **Section 5.4.4.3**.
4. As outlined in the school vehicle trip generation calculations in **Section 5.4.4.4**. 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.

5.4.4.3 Full Build-Out Retail Vehicle Trips

Base retail vehicle trip generation rates for were adopted based on the ITE 11th Edition, as outlined in **Table 15**. The adopted rates were applied to the proposed full build-out retail, as shown in **Table 16**. 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 5.4.4.5**;
- 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 full build-out retail trips for destination and local retail are shown in **Table 17** and **Table 18** and respectively. Full build-out retail site traffic volumes are shown in **Figure 28**.

TABLE 15 RETAIL VEHICLE TRIP GENERATION RATE

Land Use	Land Use Code (ITE 10 th Edition)	Vehicle Trip Generation Rate (vehicle trips per 1,000 ft ²)					
		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 16 FULL BUILD-OUT 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	210,000 ft²	109	67	176	342	372	714

TABLE 17 FULL BUILD-OUT 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		210,000 ft ²	109	67	176	343	371	714
Destination Retail Vehicle Trip Generation ¹		10%	11	7	18	34	37	71
<i>External Pass-by Trips²</i>		<i>0% AM 34% PM</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>12</i>	<i>12</i>	<i>23</i>
Primary Trips ¹	<i>Total Primary</i>	<i>100% AM 66% PM</i>	<i>11</i>	<i>7</i>	<i>18</i>	<i>23</i>	<i>25</i>	<i>48</i>
	To/From Internal Residential (Total Trips) ³		0	0	0	10	5	15
	<i>To/From Internal Residential (Walking Trips)⁴</i>	<i>70%</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>7</i>	<i>4</i>	<i>11</i>
	<i>To/From Internal Residential (Vehicle Trips)⁴</i>	<i>30%</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>3</i>	<i>2</i>	<i>5</i>
	Total Internal Vehicle Trips		0	0	0	3	2	5
	Total External Vehicle Trips		11	7	18	13	20	33

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 5.4.4.5**.
4. Assumes population within 800 metres of the retail will walk (approximately 70% of subdivision residential density)

TABLE 18 FULL BUILD-OUT 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		210,000 ft²	109	67	176	343	371	714
Local Retail Vehicle Trip Generation¹		90%	98	60	159	308	334	643
<i>External Pass-by Trips²</i>		<i>0% AM 34% PM</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>105</i>	<i>114</i>	<i>218</i>
Primary Trips¹	Total Primary	100% AM 66% PM	98	60	159	204	221	424
	To/From Internal Residential (Total Trips) ³		45	28	72	93	101	193
	<i>To/From Internal Residential (Walking Trips)⁴</i>	<i>70%</i>	<i>31</i>	<i>19</i>	<i>51</i>	<i>65</i>	<i>70</i>	<i>135</i>
	<i>To/From Internal Residential (Vehicle Trips)⁴</i>	<i>30%</i>	<i>13</i>	<i>8</i>	<i>22</i>	<i>28</i>	<i>30</i>	<i>58</i>
	Total Internal Vehicle Trips		13	8	22	28	30	58
	Total External Vehicle Trips		54	33	86	111	120	231

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 70% of subdivision residential density)

5.4.4.4 Full Build-Out School Vehicle Trips

Base school vehicle trip generation rates were adopted based on the ITE 11th Edition, as outlined in **Table 19**. The subsequent projected full build-out school vehicle trip generations are outlined in **Table 20**.

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, with 85% to walk, consistent with Phase 2
- The resulting projected vehicle trips will include pass-by consistent with Phase 2, including:
 - 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, consistent with Phase 2.

Full build-out school site traffic volumes are shown in **Figure 29**.

TABLE 19 BASE ELEMENTARY SCHOOL VEHICLE TRIP GENERATION RATES

Land Use	Land Use Code (ITE 11 th 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 20 FULL BUILD-OUT SITE ELEMENTARY SCHOOL TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Elementary School		0.4	0.34	0.74	0.07	0.09	0.16
Base Vehicle Trip Generation	1500 students¹	599	511	1110	110	130	240
To/From Internal Residential (Walking Trips) ²	85%	509	434	944	94	110	204
Total Vehicle Trips	15%	90	77	167	17	19	36
<i>Pass-by Internal Residential to External Work AM & Pass-by External work to Internal Residential PM (Vehicle Trips)³</i>	<i>0% In & 60% Out AM 60% In & 0% Out PM</i>	0	46	46	10	0	10
<i>To/from Internal Residential (Vehicle Trips)⁴</i>	<i>100% In & 40% Out AM 40% In & 100% Out PM</i>	90	31	121	7	19	26
Total Internal Vehicle Trips		90	31	121	7	19	26
Total External Vehicle Trips		0	46	46	10	0	10

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

5.4.4.5 Full Build-Out Internal Interaction

As discussed in the above sections, allowances have been made for internal interaction between the proposed residential and retail in the full build-out scenario 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 21**. Application of these rates to the projected vehicle trip generation yields the potential interaction for each land use, as summarized in **Table 22**. The resultant interaction trips by land use is summarized in **Table 23**.

TABLE 21 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 22 FULL BUILD-OUT INTERACTION TRIP POTENTIAL BY LAND USE

Land Use	AM Peak		PM Peak	
	In	Out	In	Out
Residential				
With Destination Retail	15	20	1090	590
Destination Retail				
With Residential	0	0	5	10

TABLE 23 FULL BUILD-OUT 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

5.4.4.6 Full Build-Out Total Trip Generation

The resultant projected full build-out vehicle trip generation for the Site is summarized in **Table 24**.

TABLE 24 FULL BUILD-OUT 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	6,401 dwellings	105	162	267	114	85	199
External Vehicle Trips		613	1990	2603	2153	1238	3391
Retail							
Internal Vehicle Trips	210,000 ft ²	13	8	22	31	32	63
External Vehicle Trips		64	40	104	123	140	264
Elementary School							
Internal Vehicle Trips	1,500 students	90	31	121	7	19	26
External Vehicle Trips		0	46	46	10	0	10

5.4.5 Site Vehicle Trip Distribution

5.4.5.1 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 25**.

TABLE 25 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

5.4.5.2 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 26**. The distribution for local retail is specific to nearby future development, while the distribution for destination retail is based on broader Bolton.

TABLE 26 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%

5.4.5.3 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 5.4.5.1**.

5.4.6 Future Total Traffic Volumes

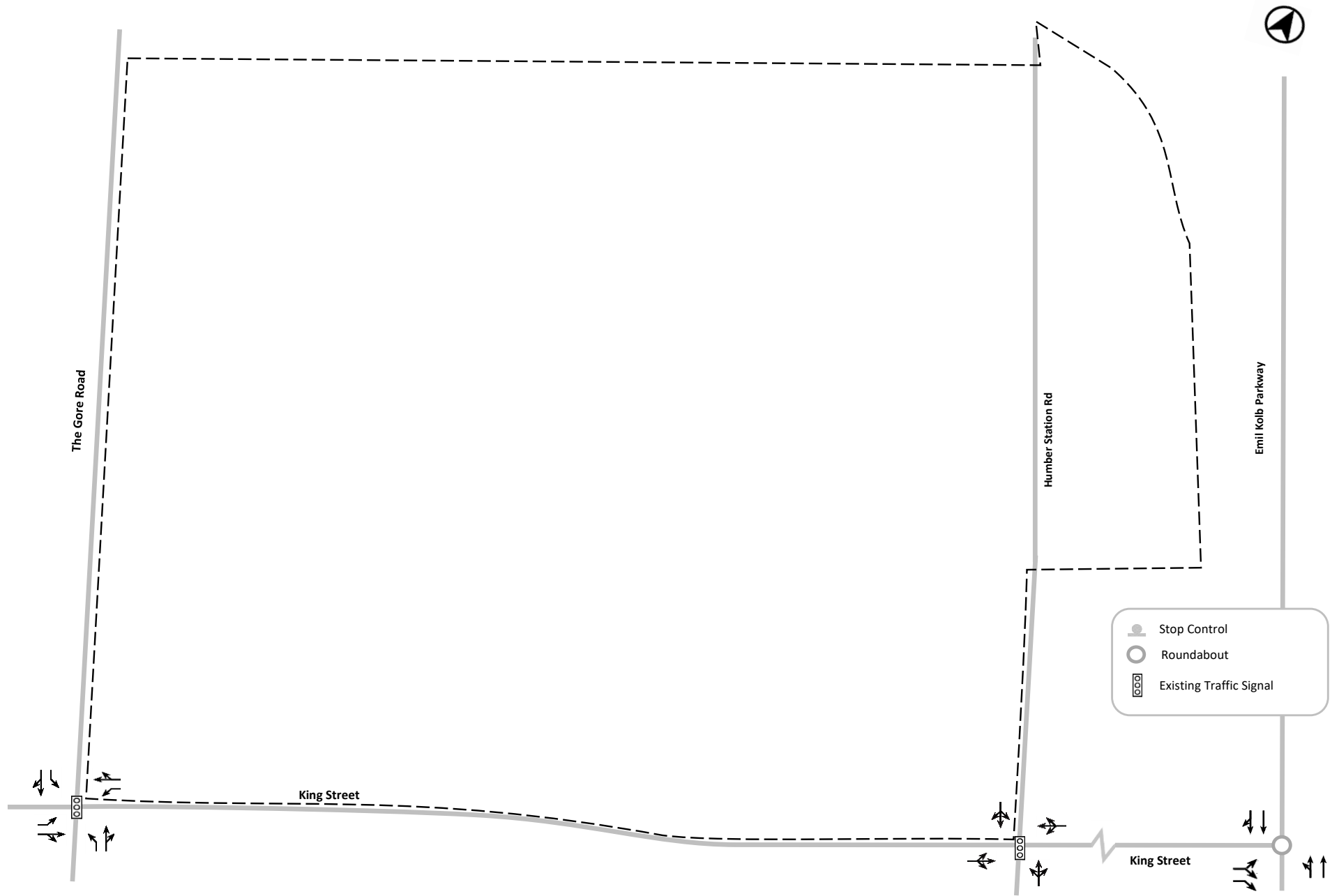
Future total traffic volumes were determined by adding the future background traffic volumes with the site traffic volumes and are shown in **Figure 30**, **Figure 31** and **Figure 32** for the Phase 1, Phase 2 and Full build-out scenarios respectively.

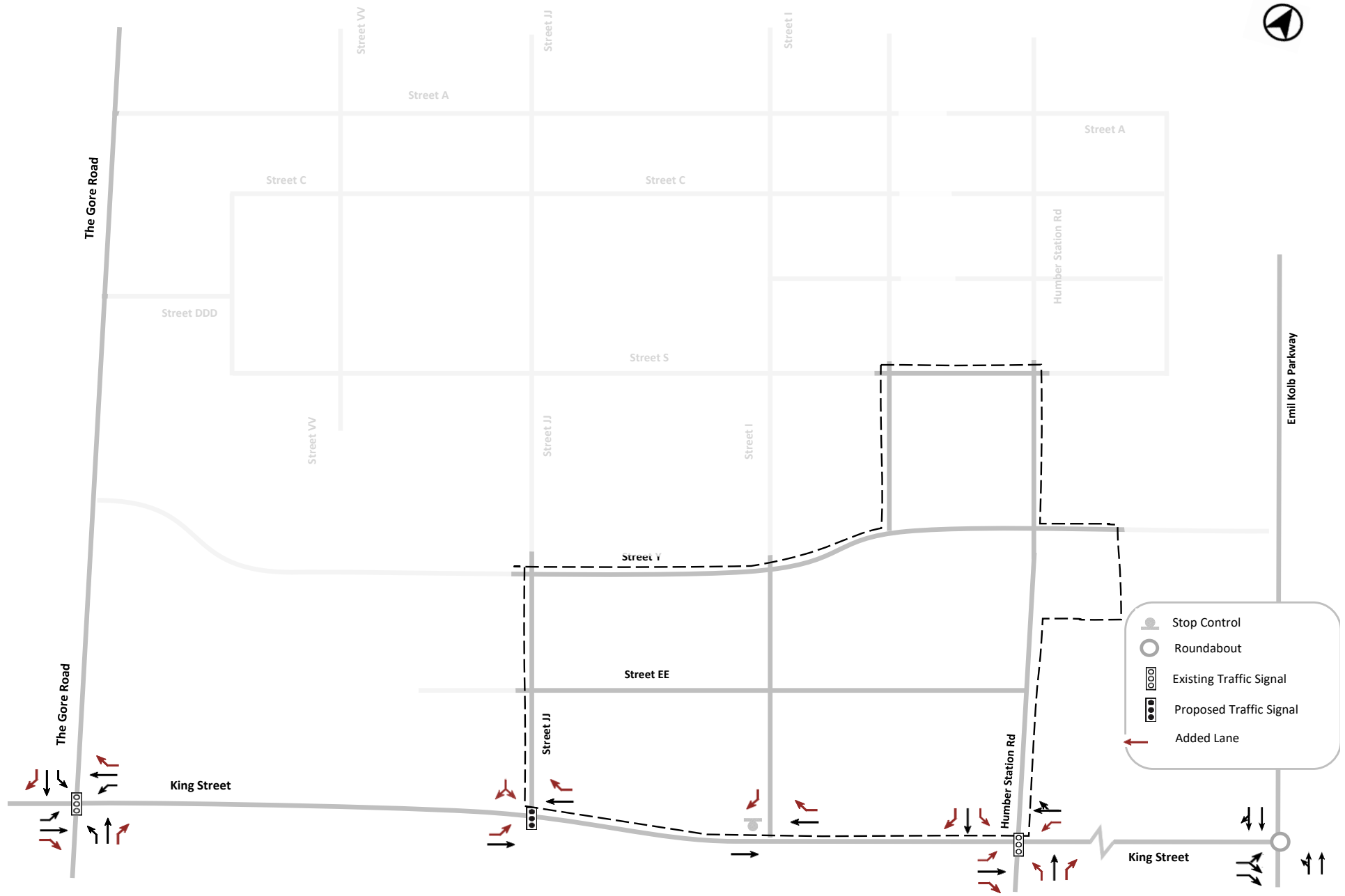
5.4.6.1 'Main Street' Directional Closure - Volumes

As described in Section 4.2.1, a 'Main Street' directional closure is proposed along Humber Station Road. While north-south through volumes were not re-assigned as part of the Secondary Plan analysis, the volumes destined northbound can be readily accommodated on Street E, Street I, Street JJ, and the Transit Street. The north-south through volumes are predominantly related to residential traffic returning to the Caledon Station MTSA in the afternoon peak hour. A redistribution of traffic at a local scale is reasonable considering:

- driveway access is proposed to be restricted to local side streets in the 'Main Street' area (i.e. no driveway access on Street D or Humber Station, north of Street E to allow for community event or festival closures); and considering
- the fine-grained collector street and local street network.

With the proposed directional closure between Street C and Street E, vehicles could continue to use Humber Station 'outbound' as well as the rest of the grid-network. Operations analysis in Section 6.0 also indicate good levels of service at internal collector road intersections that could readily support reassignment of traffic within their road character.







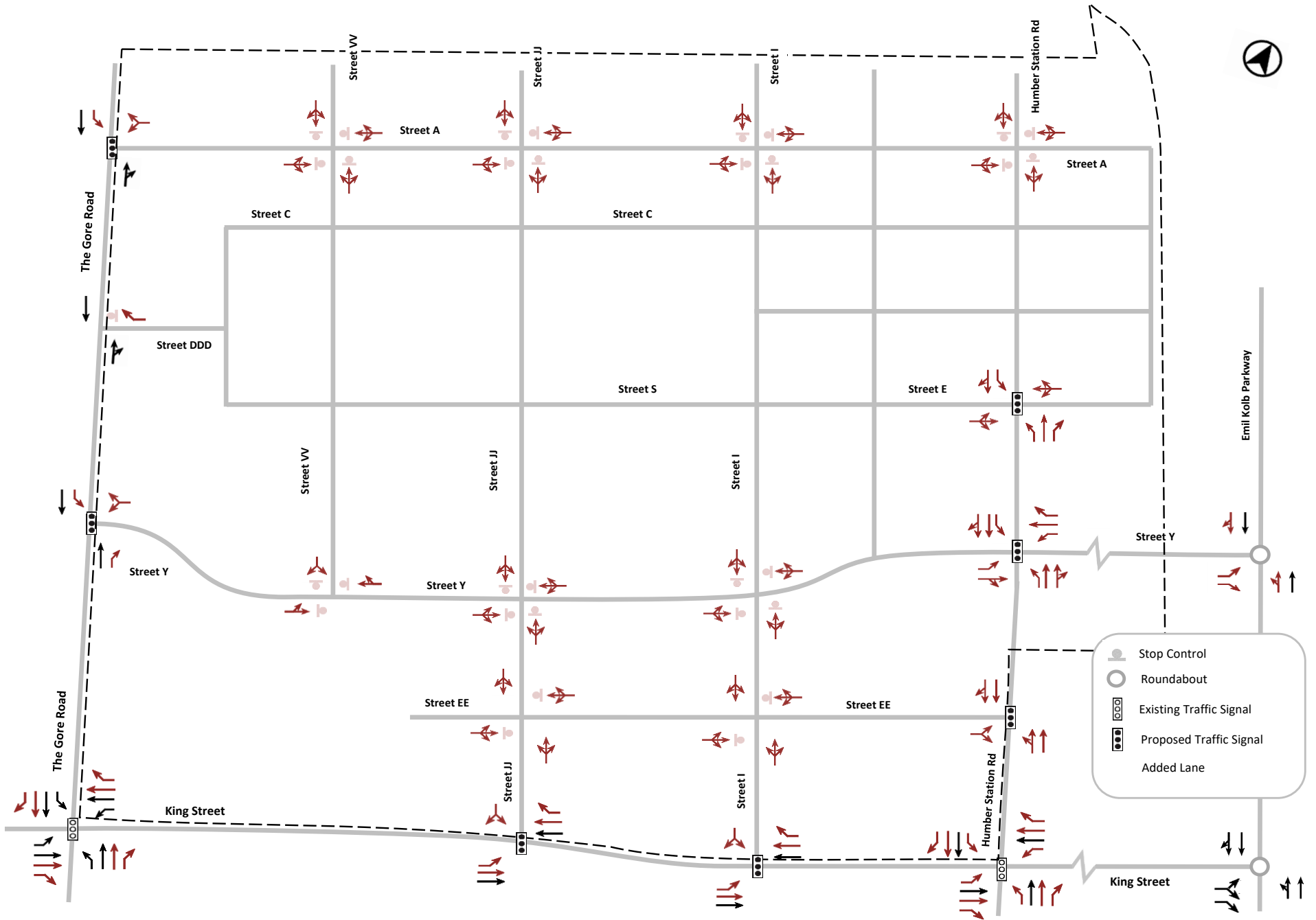


FIGURE 13 FULL BUILD-OUT LANE CONFIGURATIONS

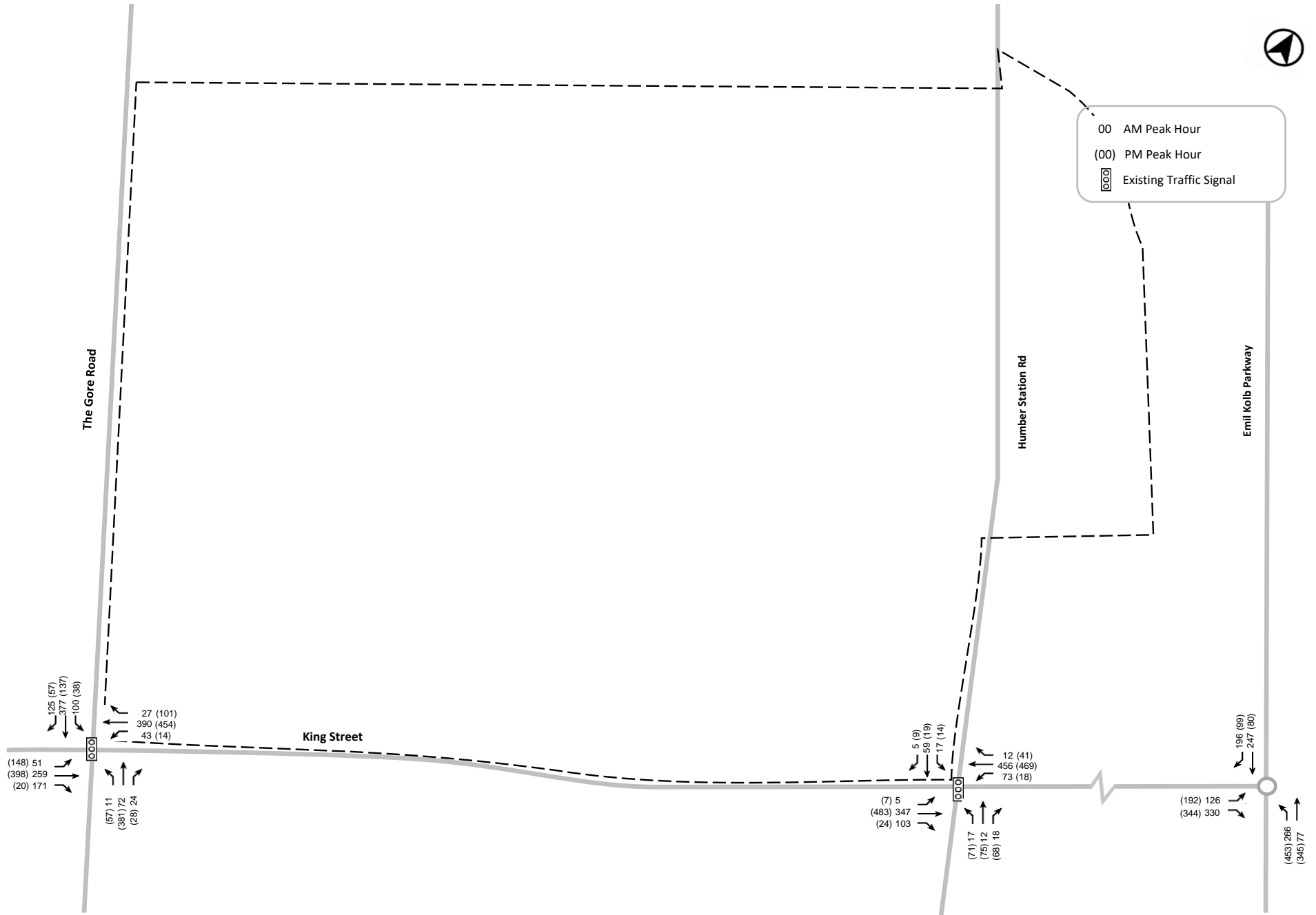
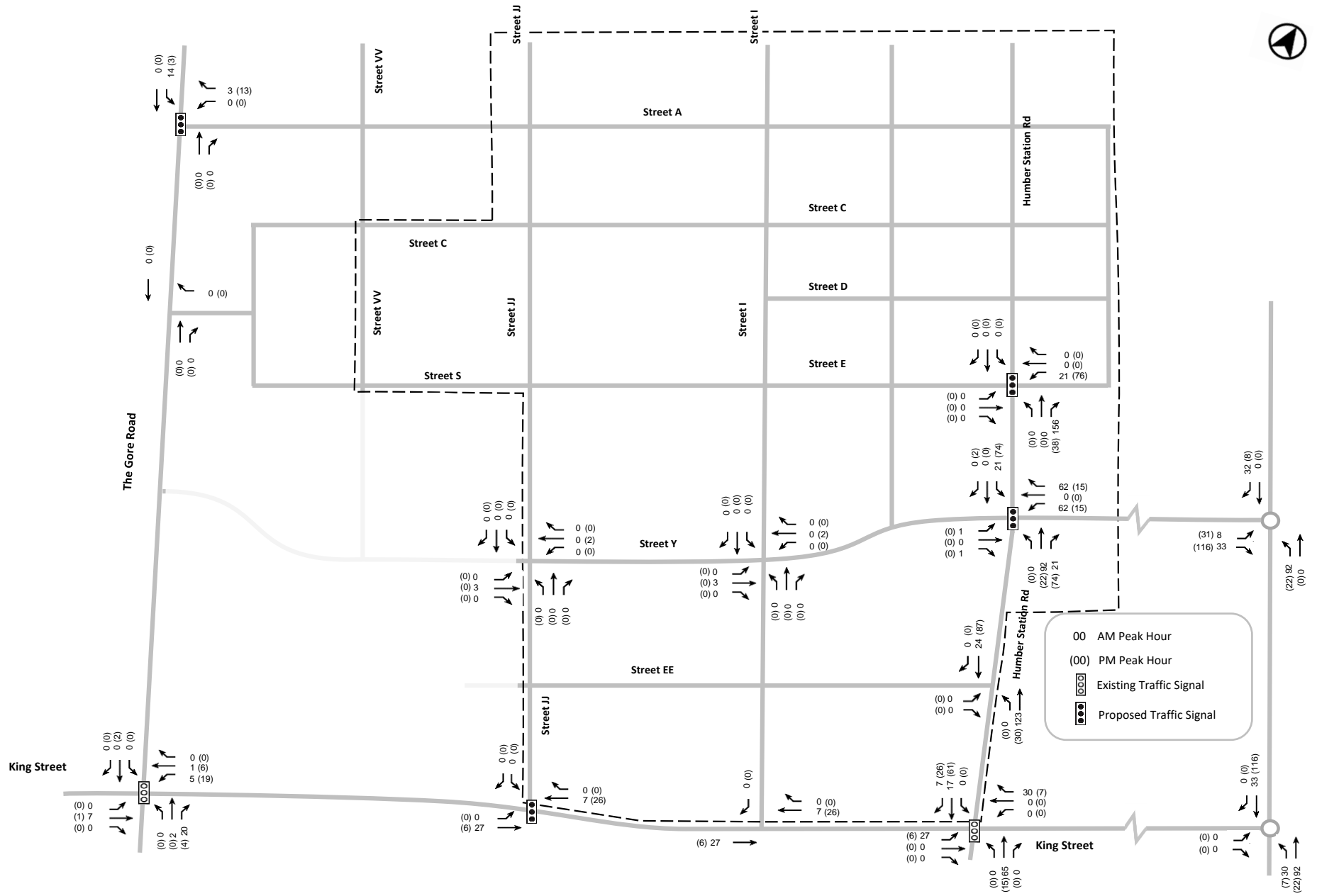
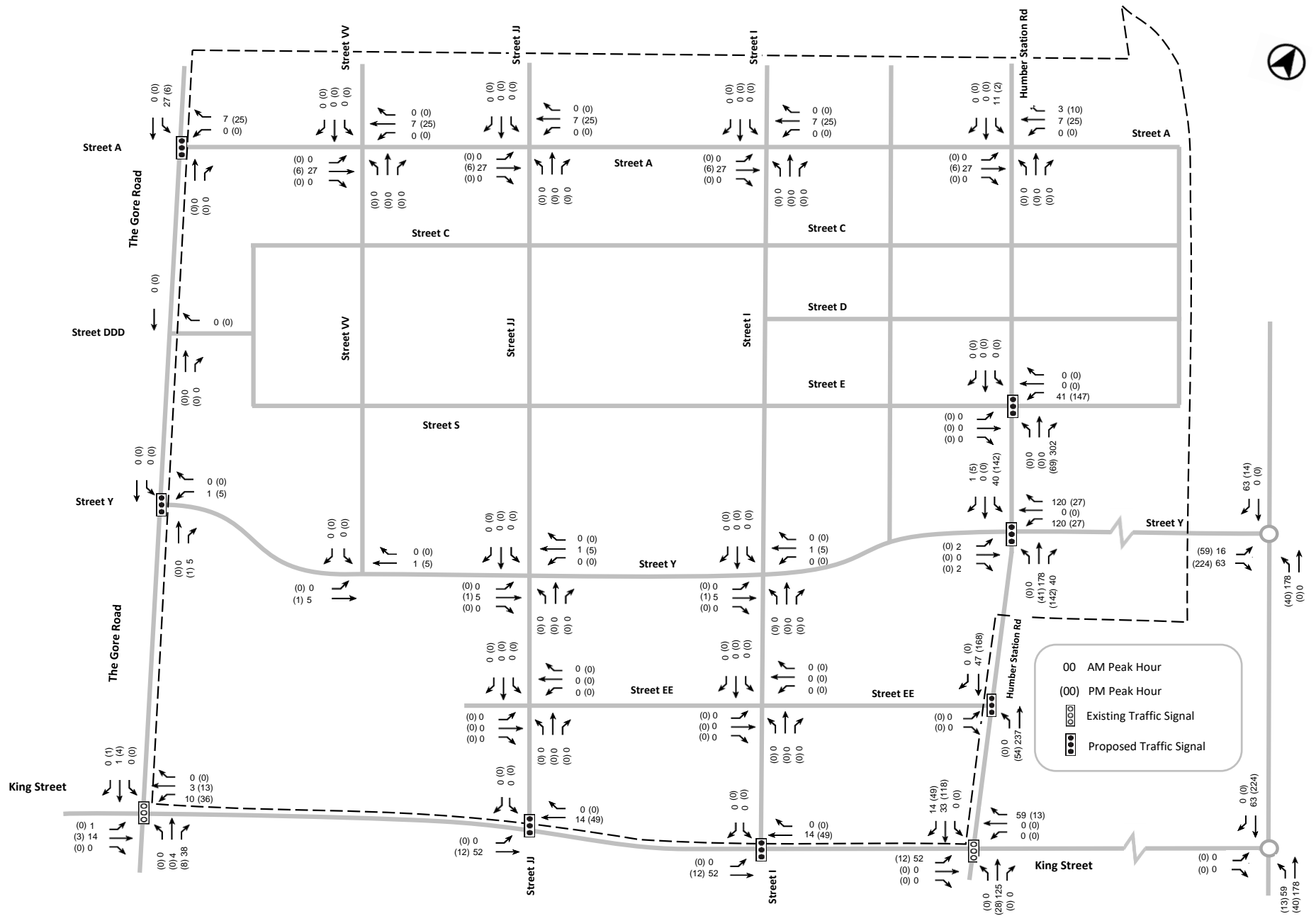
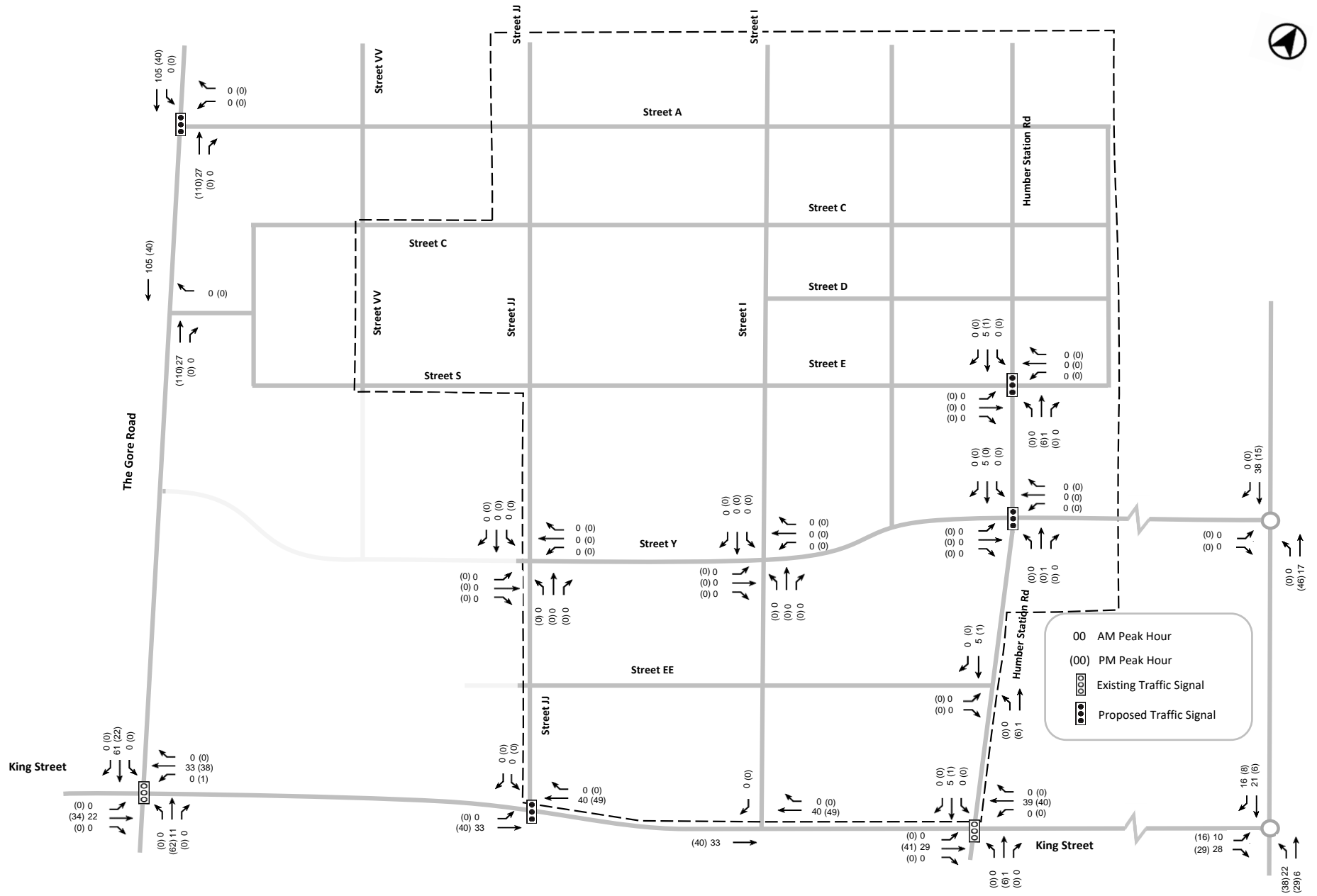
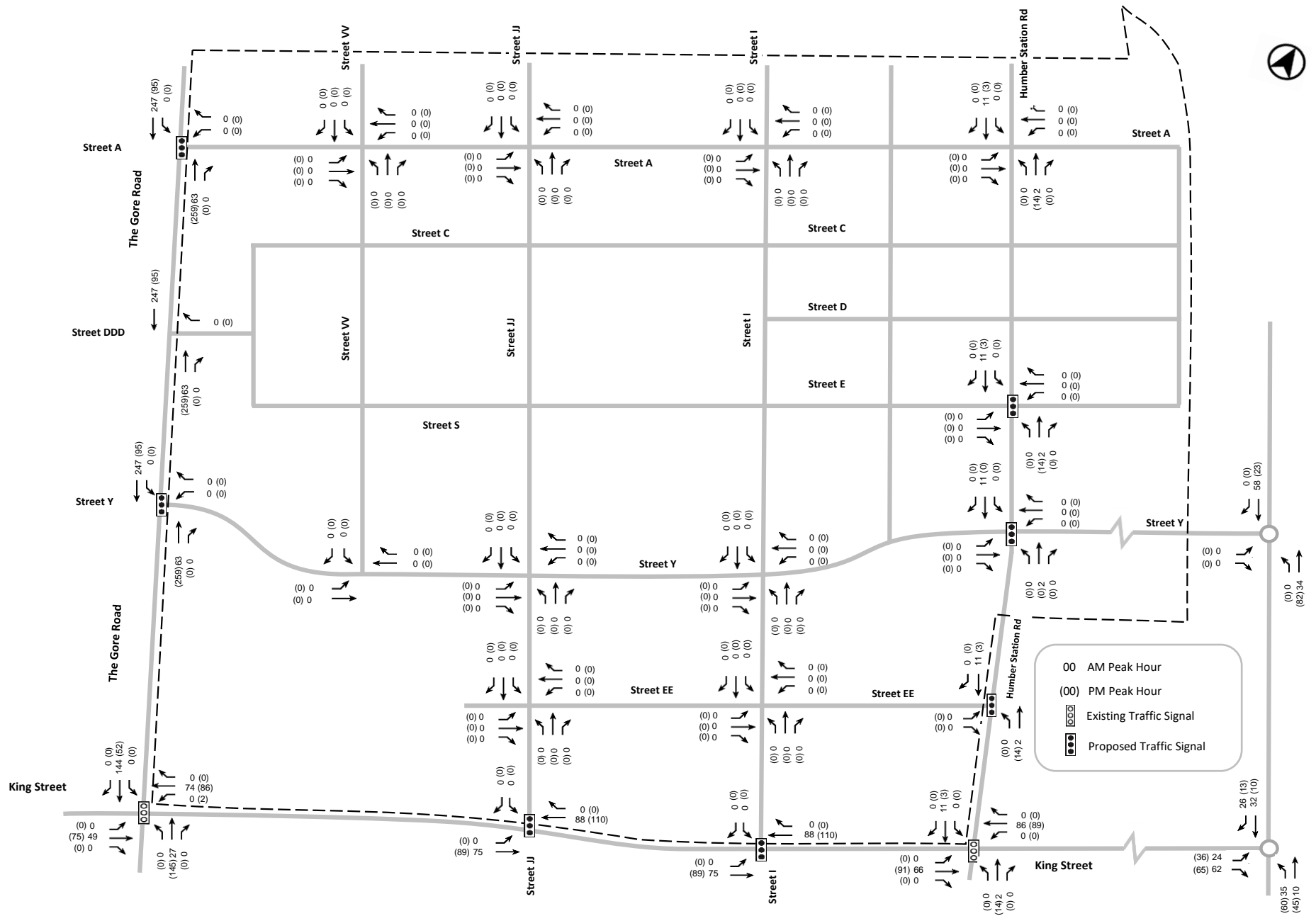


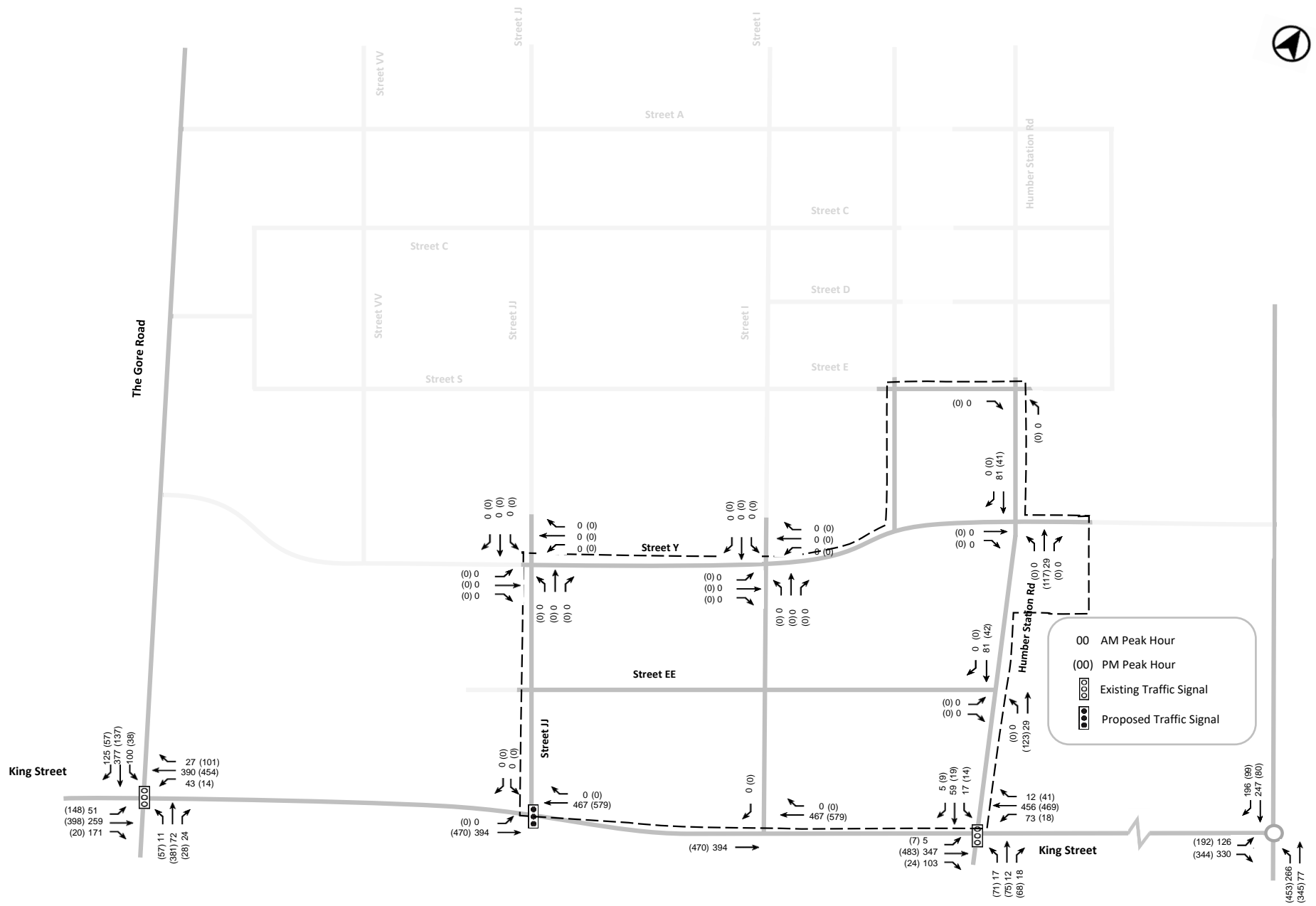
FIGURE 14 EXISTING TRAFFIC VOLUMES
 CALEDON STATION SECONDARY PLAN

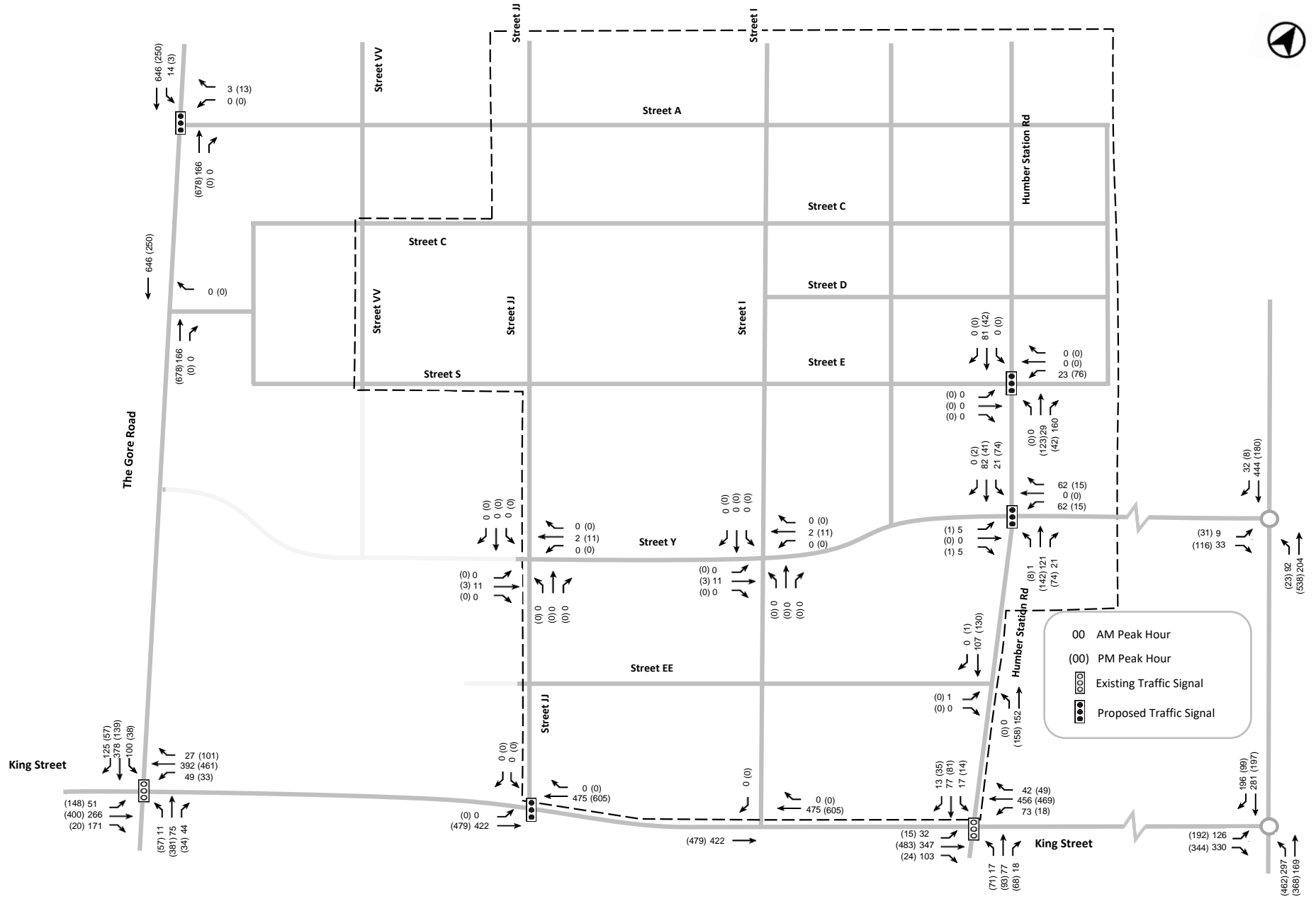












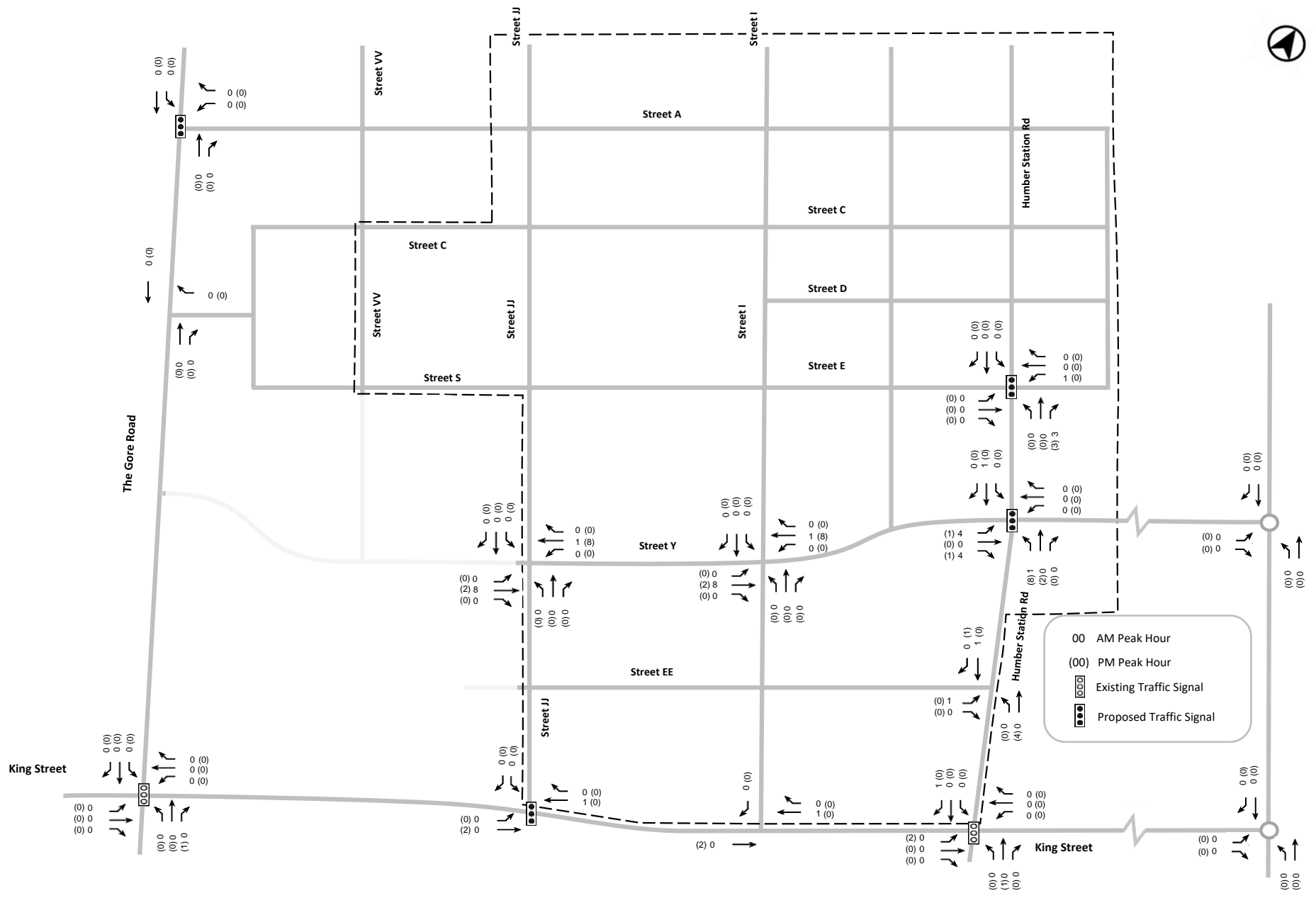


FIGURE 23 PHASE 2 SITE-RELATED GO STATION TRAFFIC VOLUMES (2031)
 CALEDON STATION SECONDARY PLAN

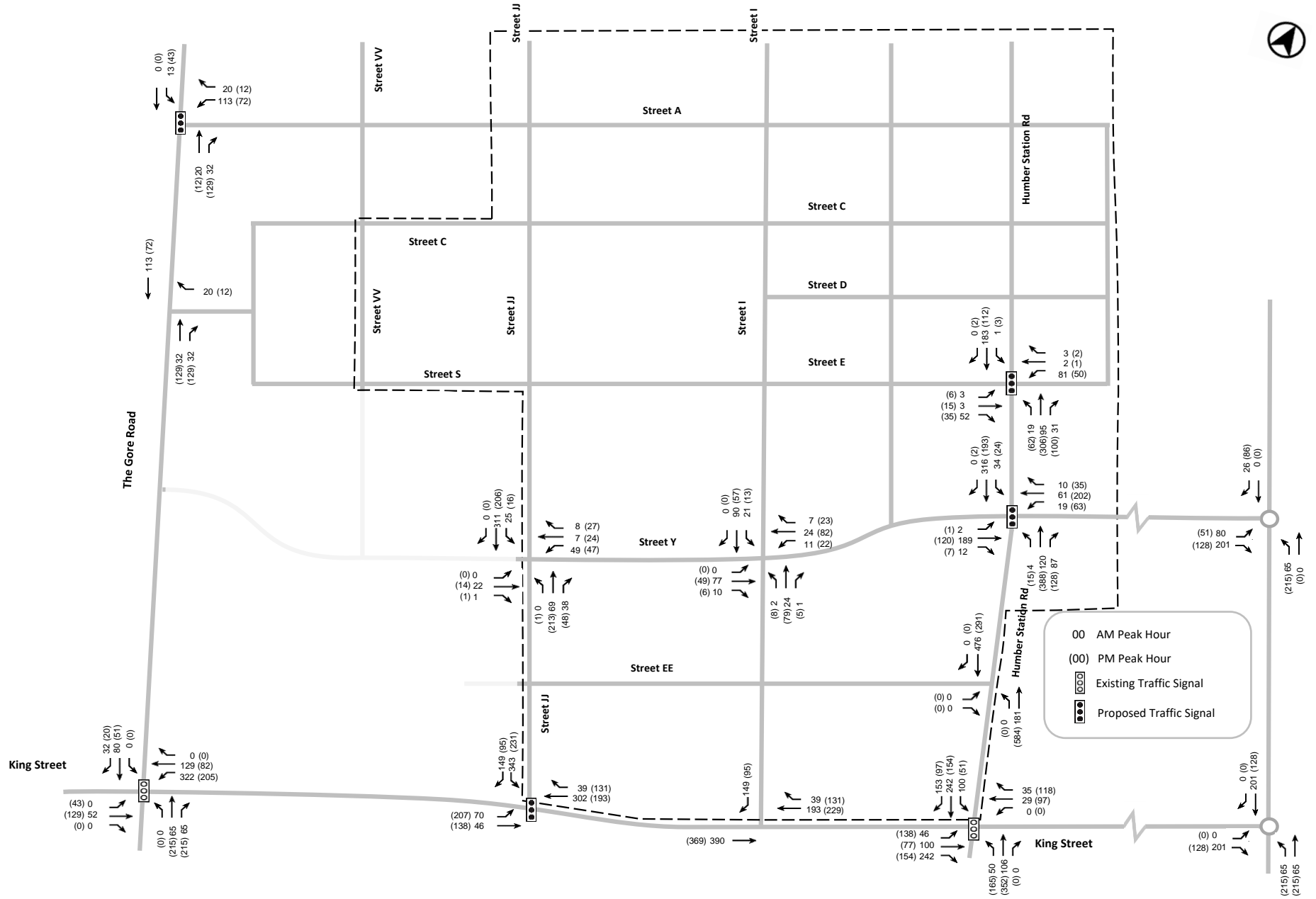
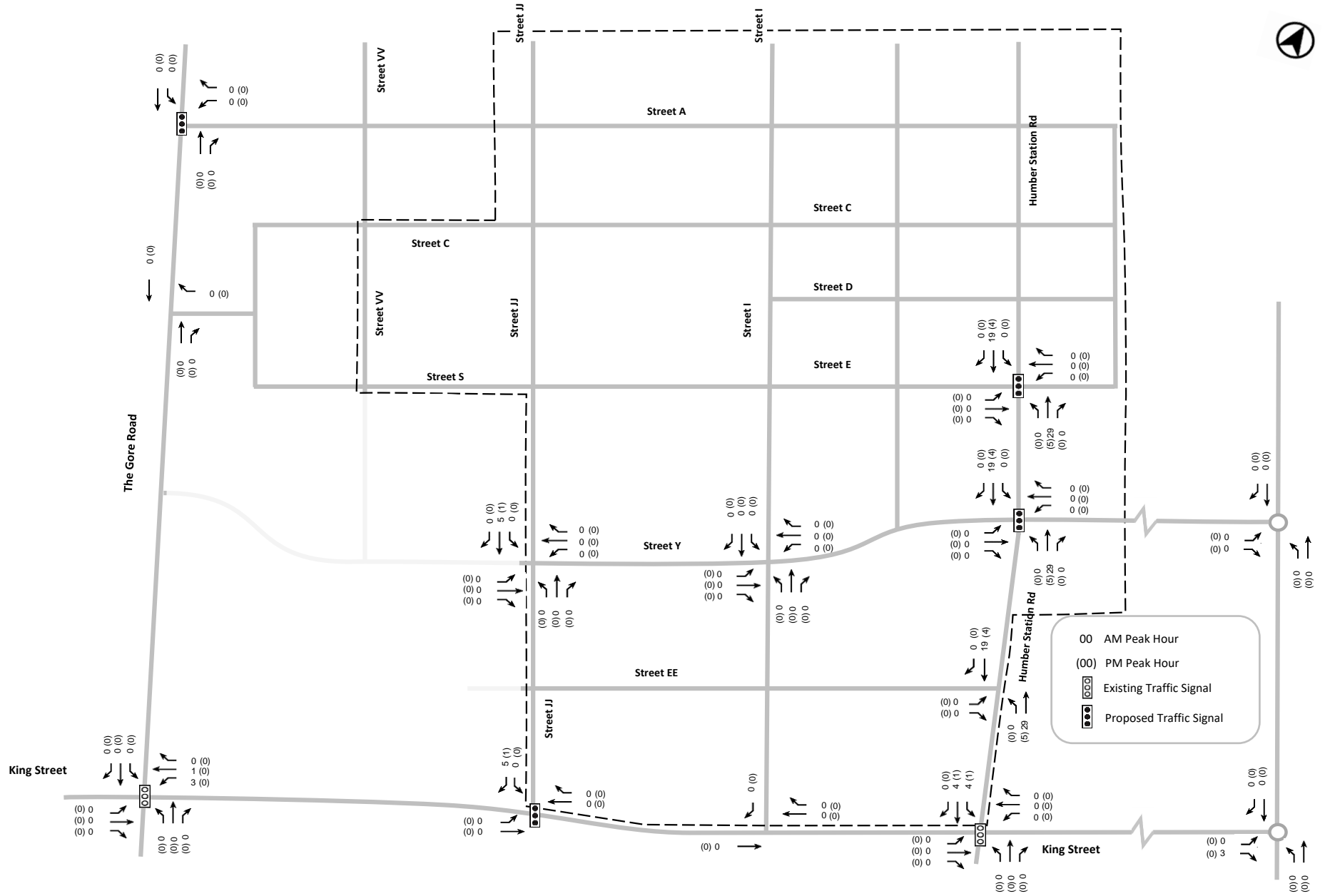
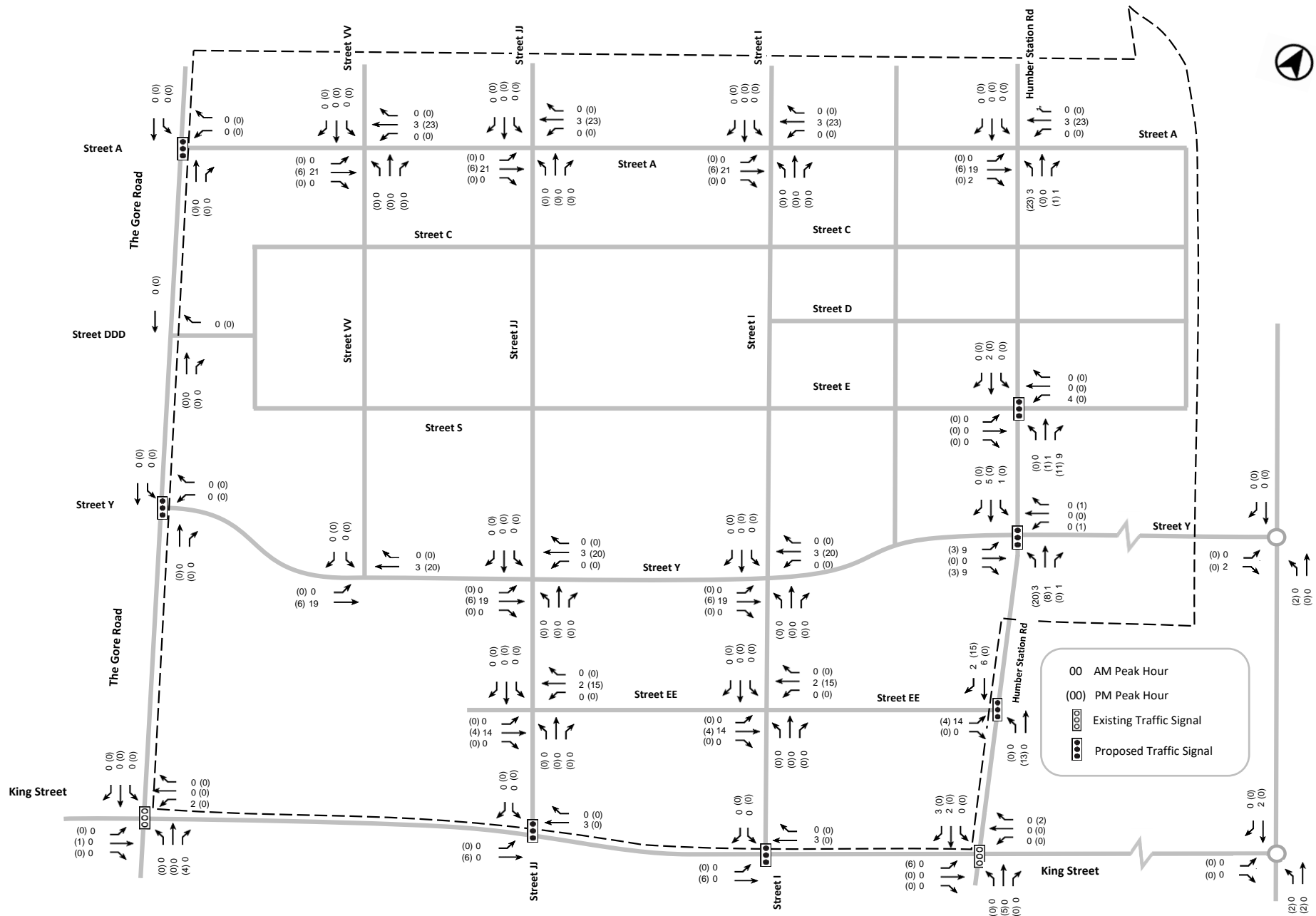
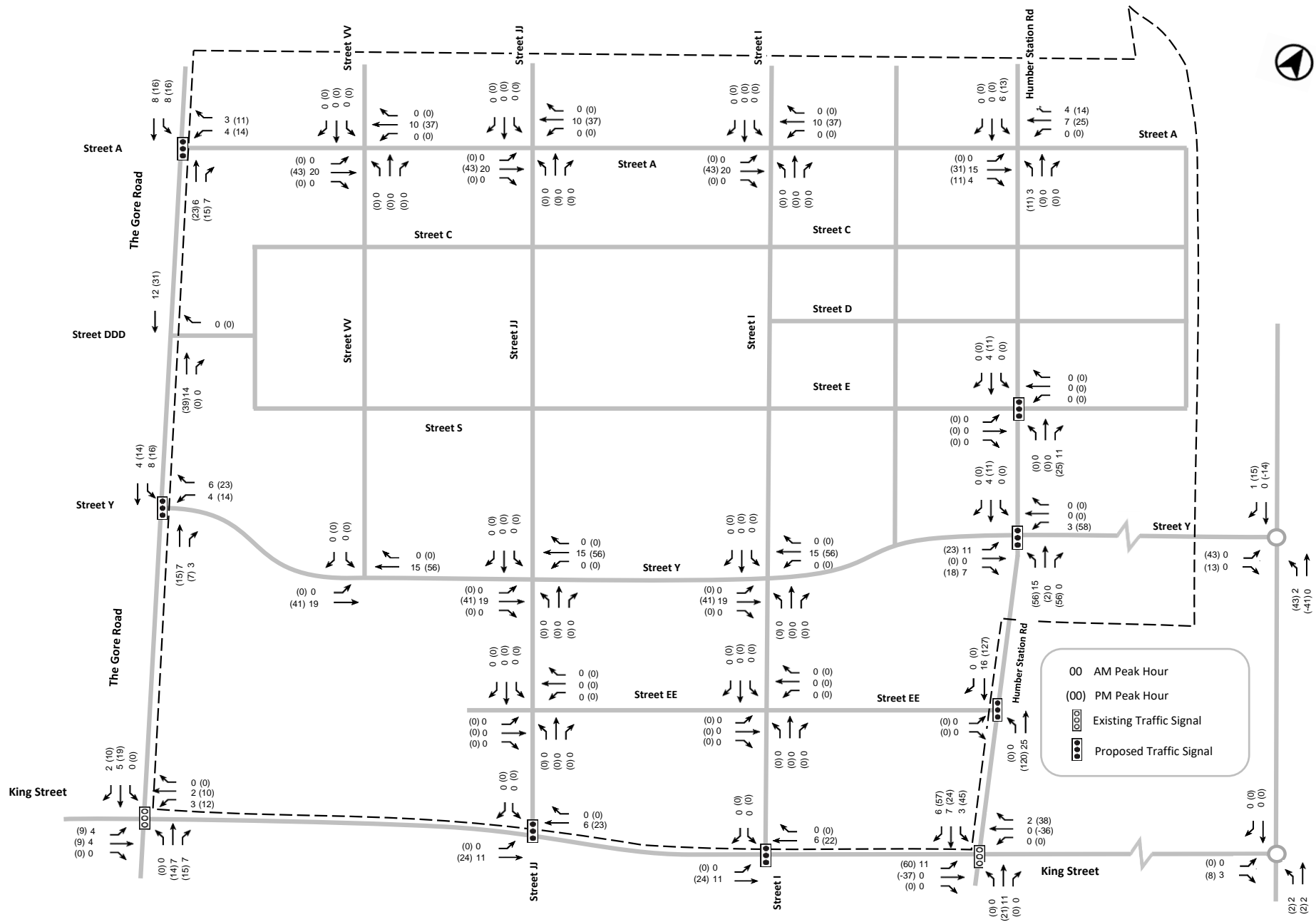


FIGURE 24 PHASE 2 RESIDENTIAL SITE TRAFFIC VOLUMES (2031)







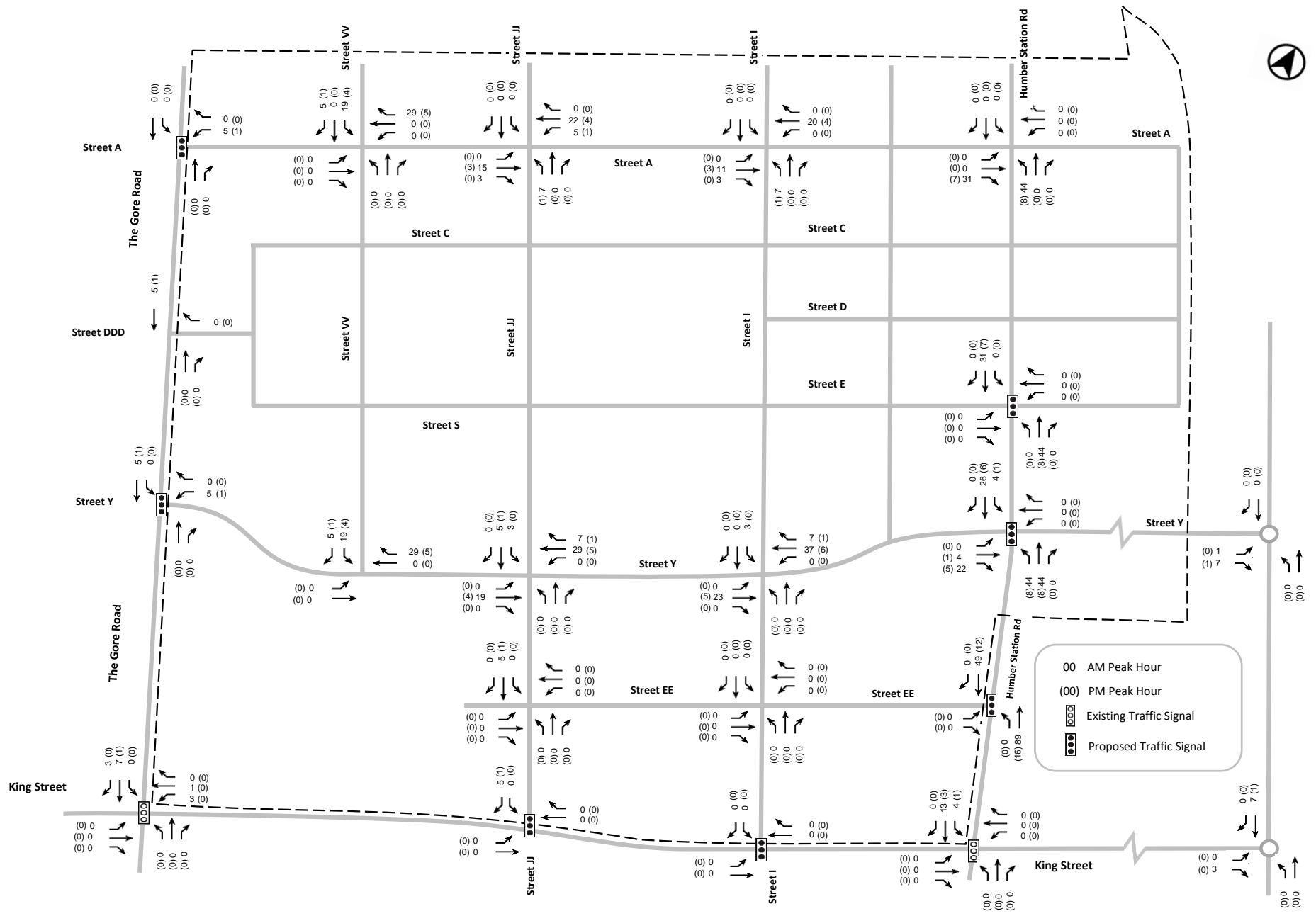
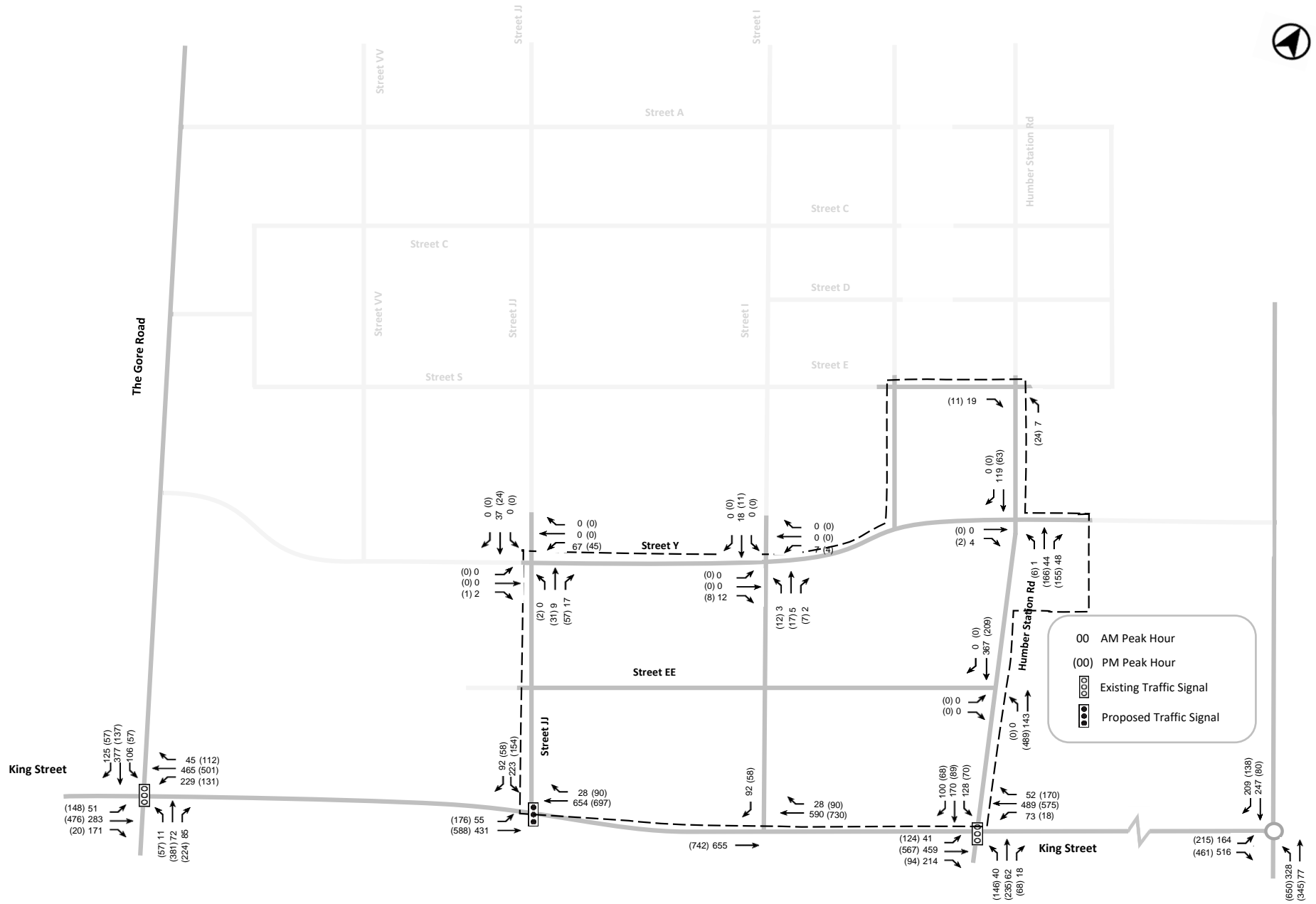


FIGURE 29 FULL BUILD-OUT SCHOOL SITE TRAFFIC VOLUMES (2041)
CALEDON STATION SECONDARY PLAN



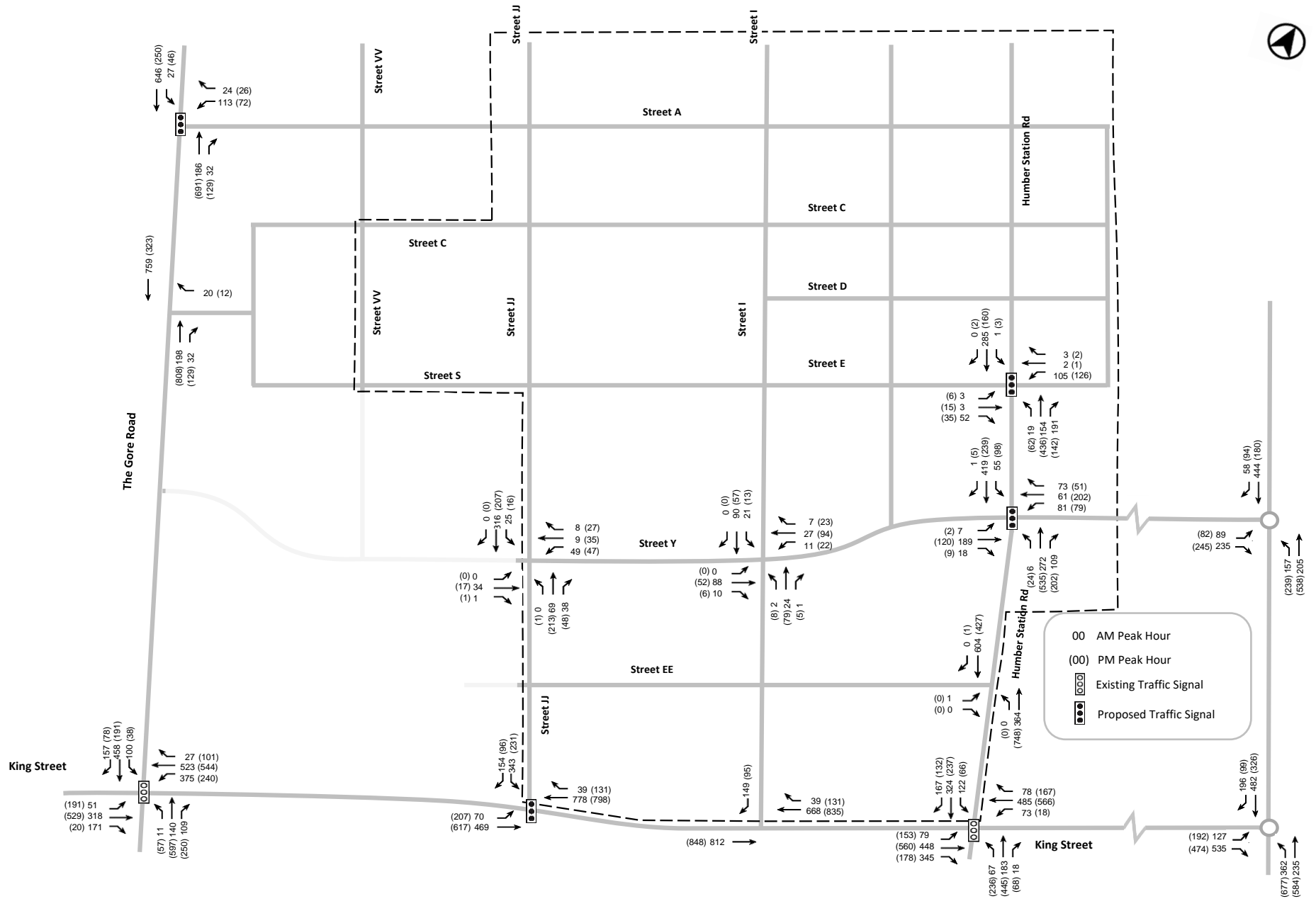
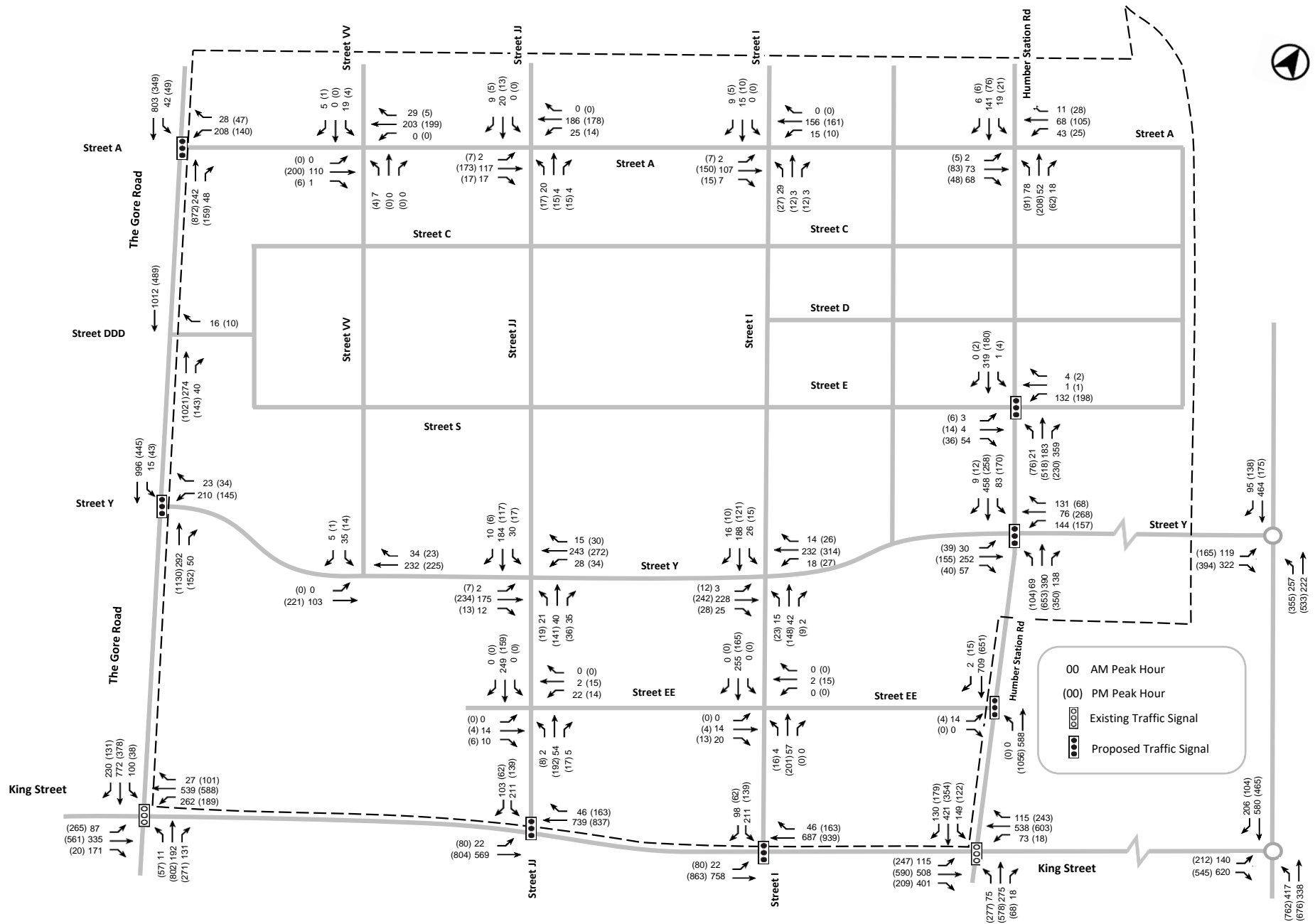


FIGURE 31 PHASE 2 FUTURE TOTAL TRAFFIC VOLUMES (2031)



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 F** and detailed analysis worksheets are attached in **Appendix G**.

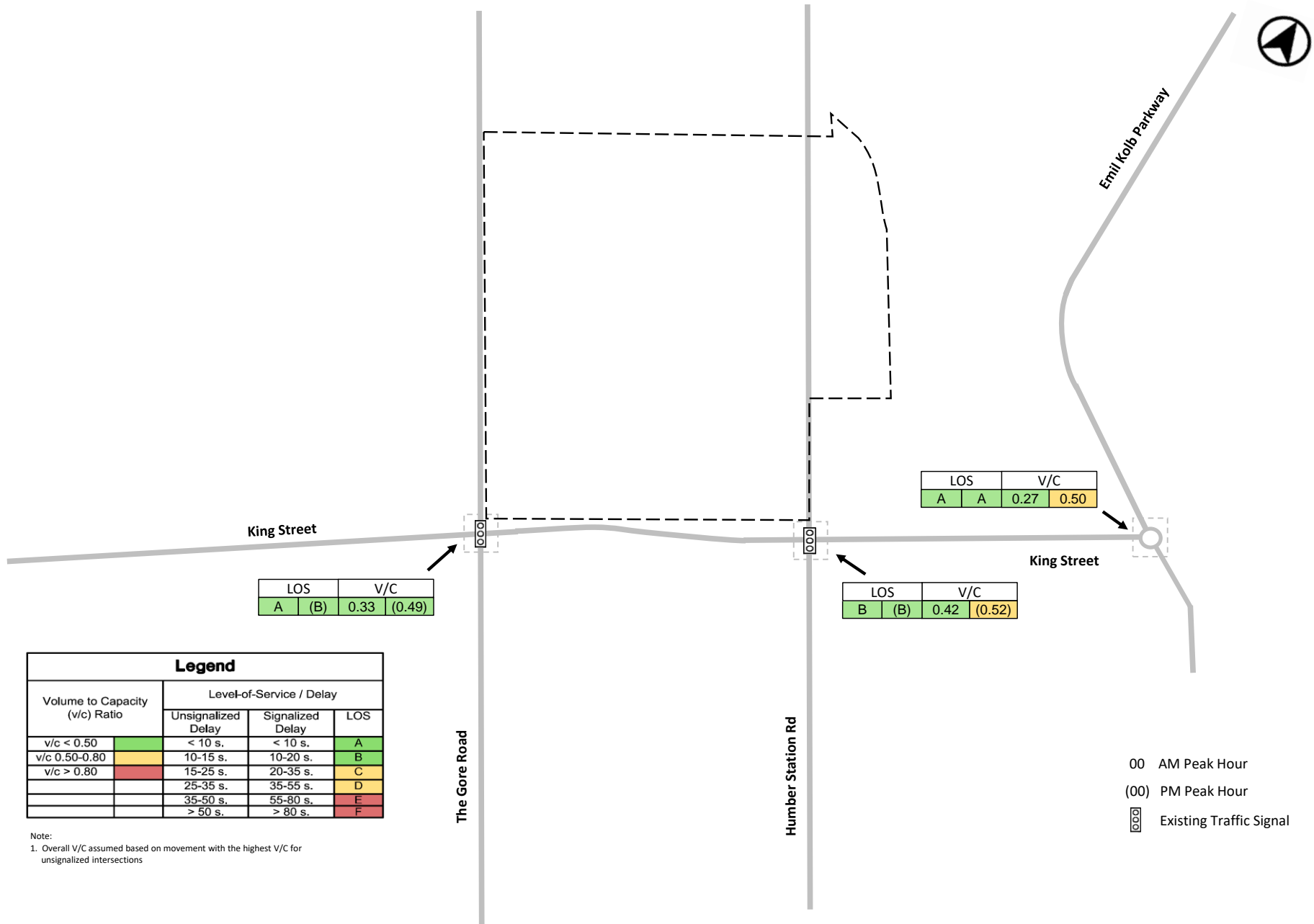
6.2 ANALYSIS ASSUMPTIONS AND PARAMETERS

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 E**. Analyses were undertaken using these signal timing plans.

A summary of Existing Operations, Future Background Operations and Future Total Operations are illustrated in **Figure 33** to **Figure 37**.

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

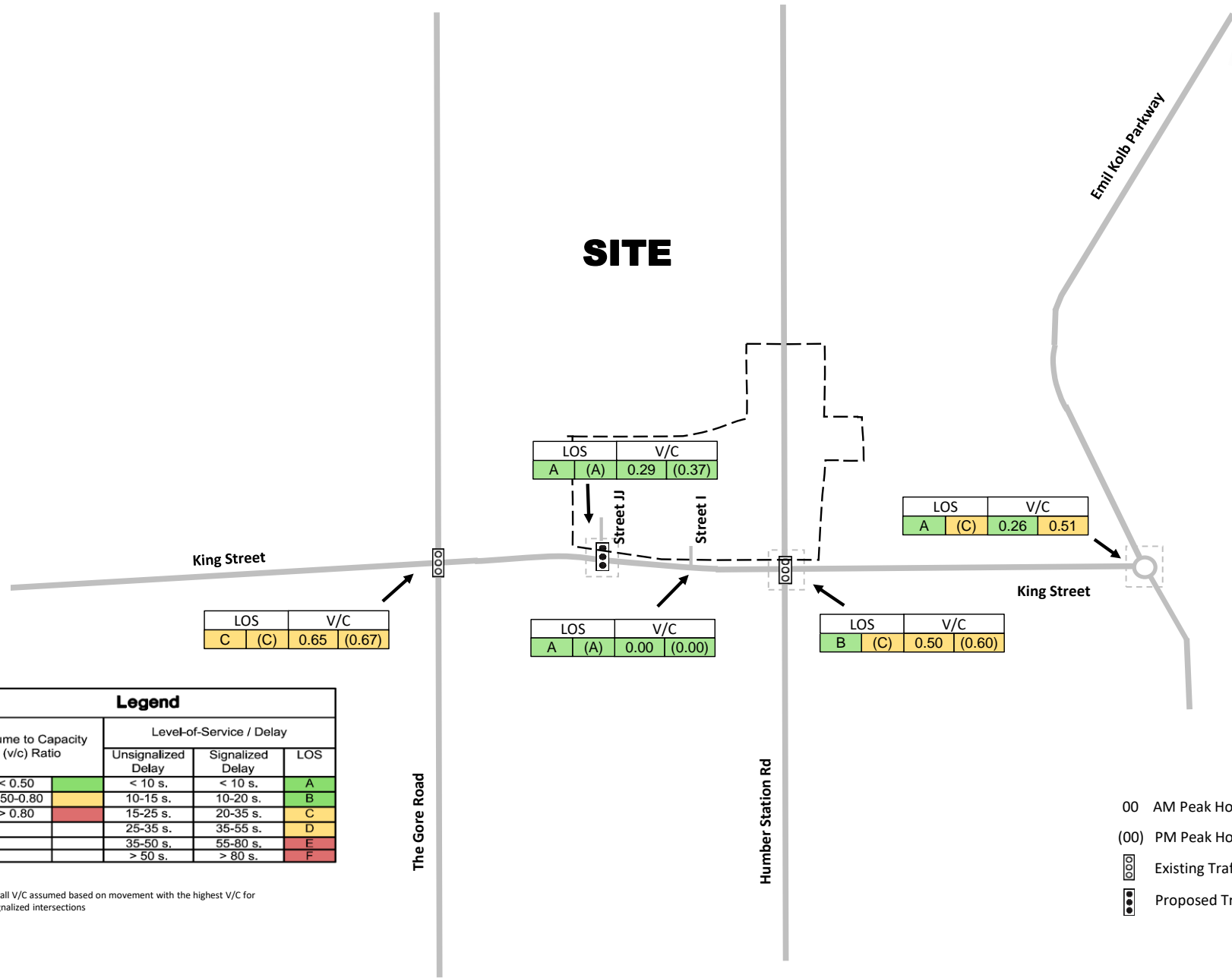




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SITE



LOS	V/C
C	(C)
0.65	(0.67)

LOS	V/C
A	(A)
0.00	(0.00)

LOS	V/C
A	(A)
0.29	(0.37)

LOS	V/C
B	(C)
0.50	(0.60)

LOS	V/C
A	(C)
0.26	0.51

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	

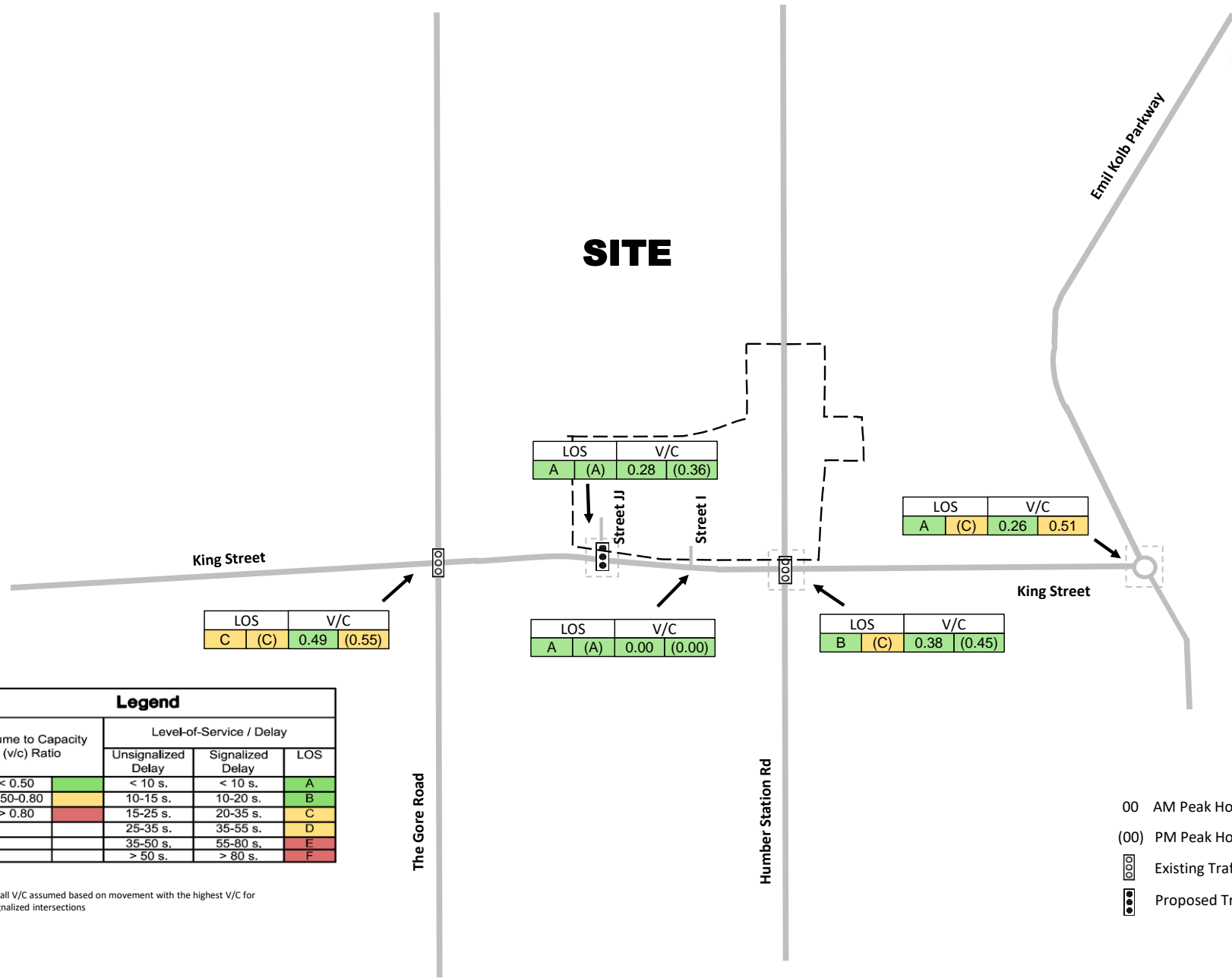
Note:
1. Overall V/C assumed based on movement with the highest V/C for unsignalized intersections

- 00 AM Peak Hour
- (00) PM Peak Hour
- 000 Existing Traffic Signal
- 0000 Proposed Traffic Signal





SITE



LOS	V/C
C	0.49
(C)	(0.55)

LOS	V/C
A	0.28
(A)	(0.36)

LOS	V/C
A	0.00
(A)	(0.00)

LOS	V/C
B	0.38
(C)	(0.45)

LOS	V/C
A	0.26
(C)	0.51

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	

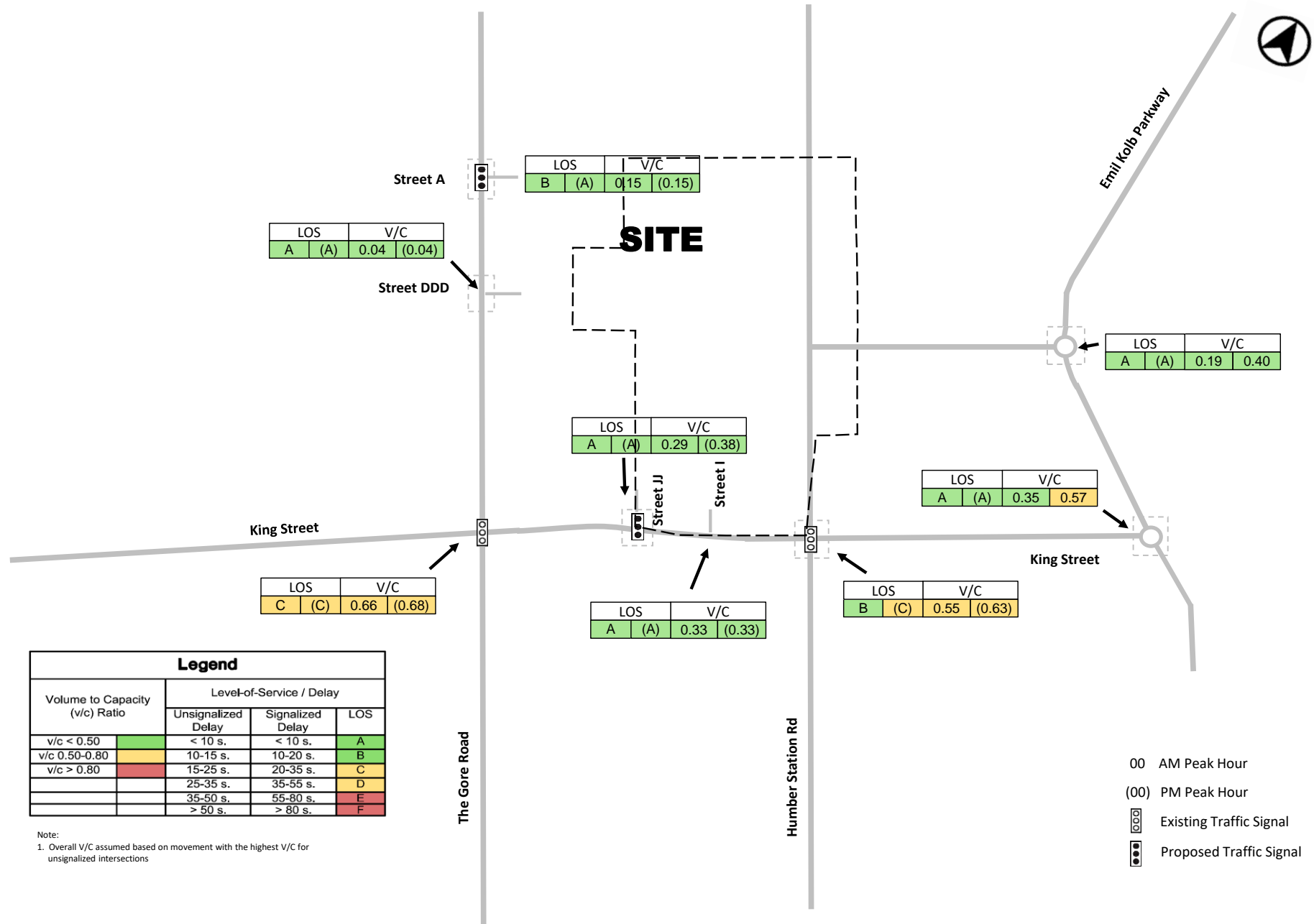
Note:
1. Overall V/C assumed based on movement with the highest V/C for unsignalized intersections

- 00 AM Peak Hour
- (00) PM Peak Hour
- 000 Existing Traffic Signal
- 000 Proposed Traffic Signal



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

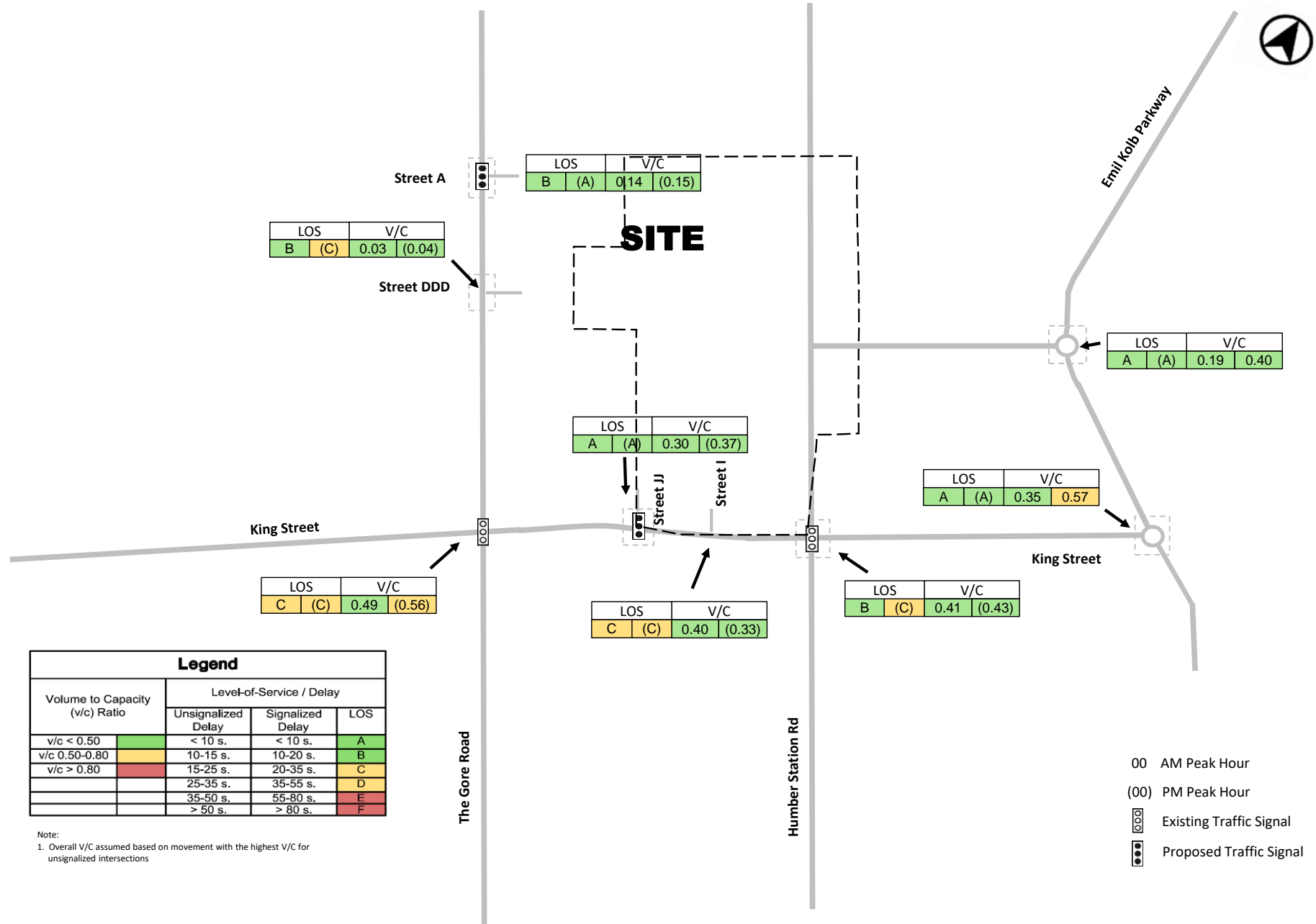
Note:
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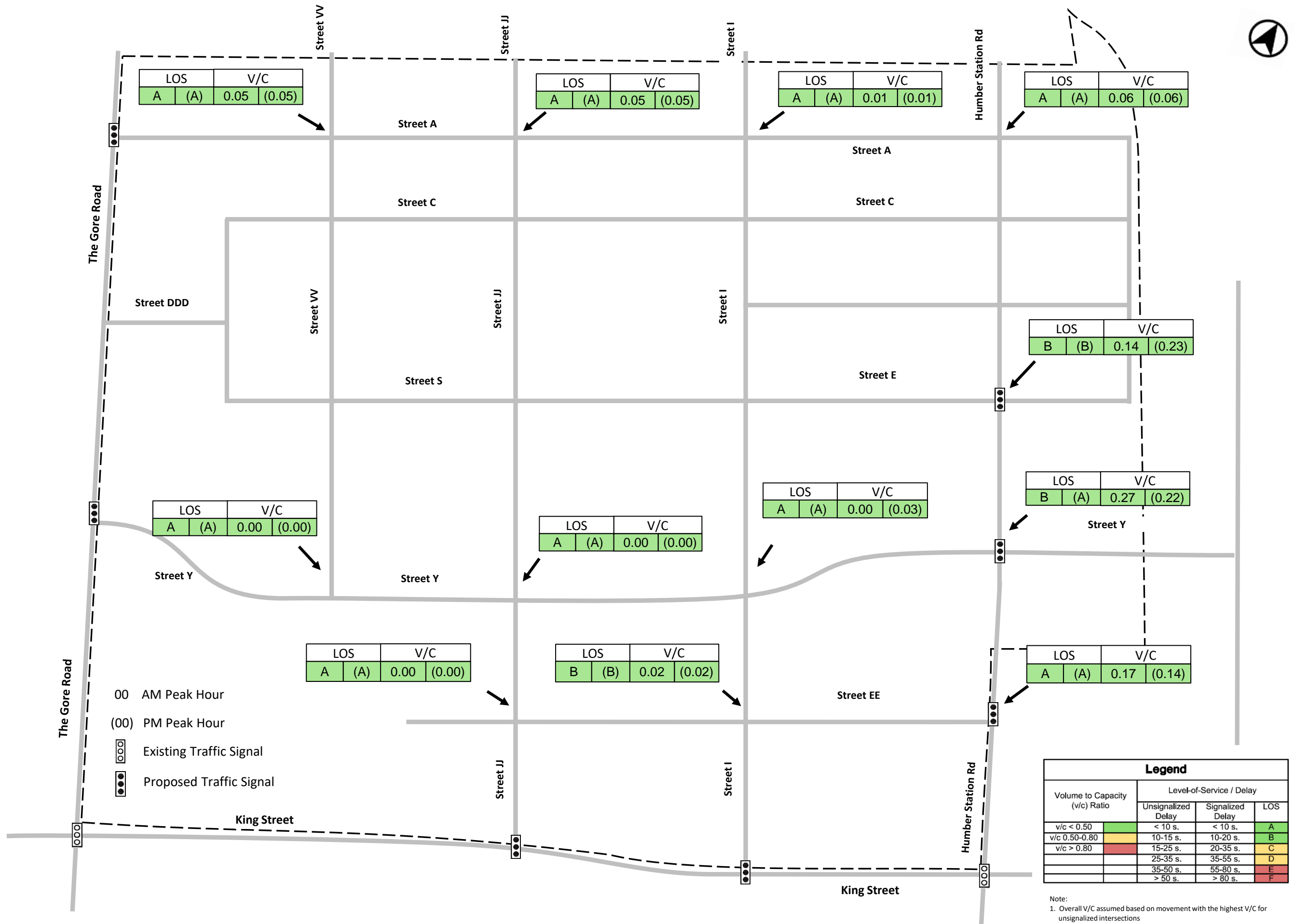


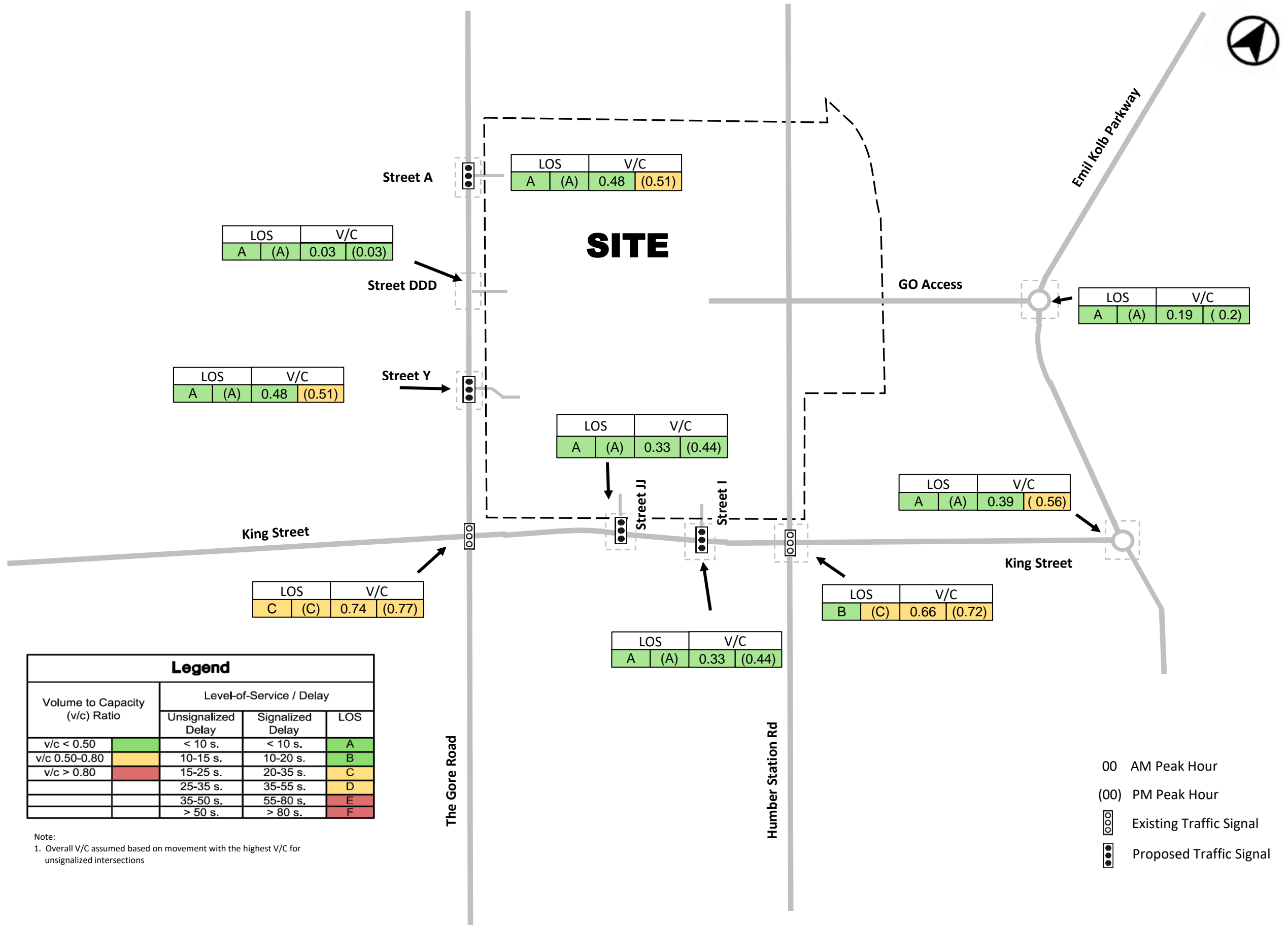


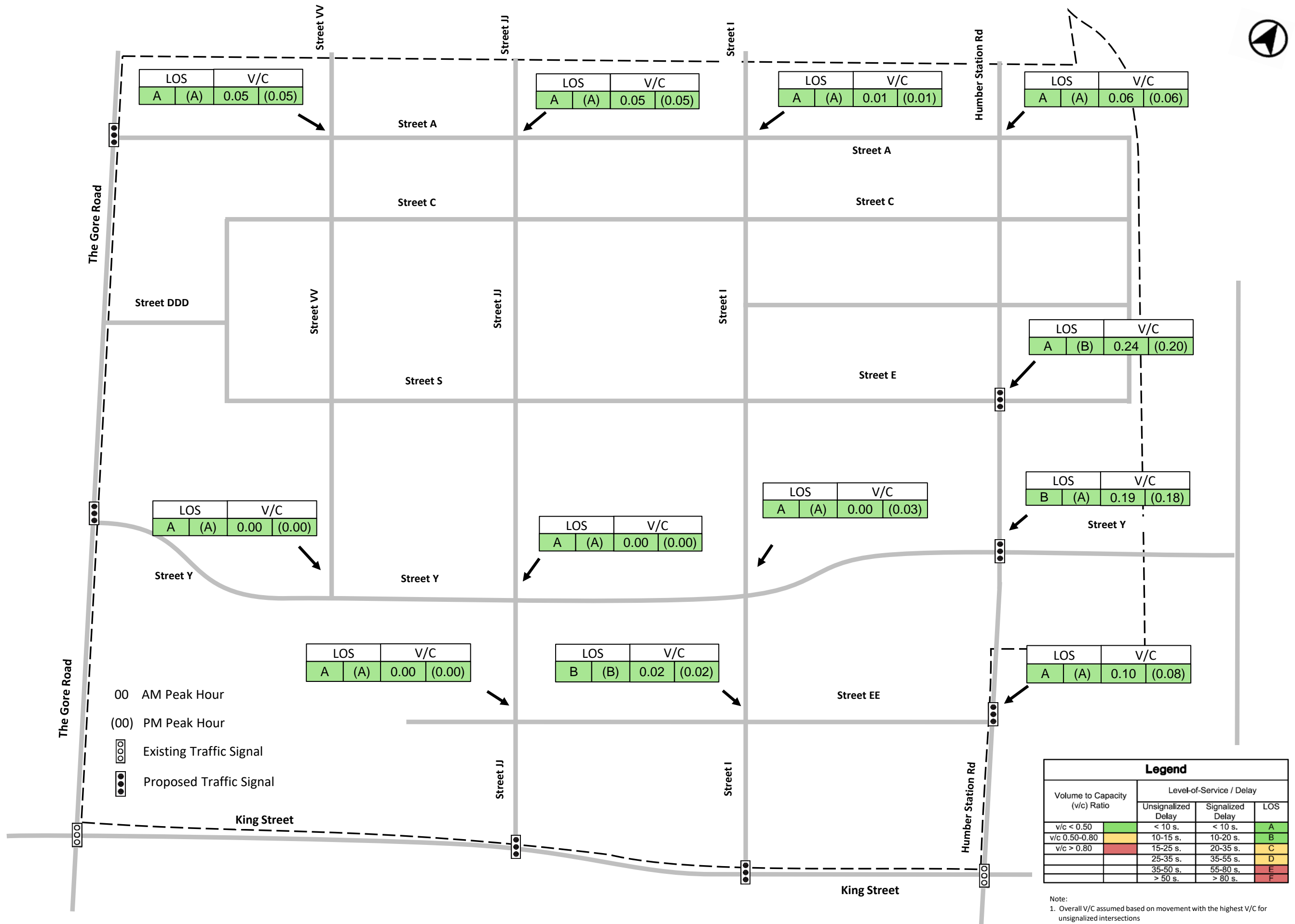
Legend			
Volume to Capacity (v/c) Ratio	Level-of-Service / Delay		
	Unsignalized Delay	Signalized Delay	LOS
v/c < 0.50	< 10 s.	< 10 s.	A
v/c 0.50-0.80	10-15 s.	10-20 s.	B
v/c > 0.80	15-25 s.	20-35 s.	C
	25-35 s.	35-55 s.	D
	35-50 s.	55-80 s.	E
	> 50 s.	> 80 s.	F

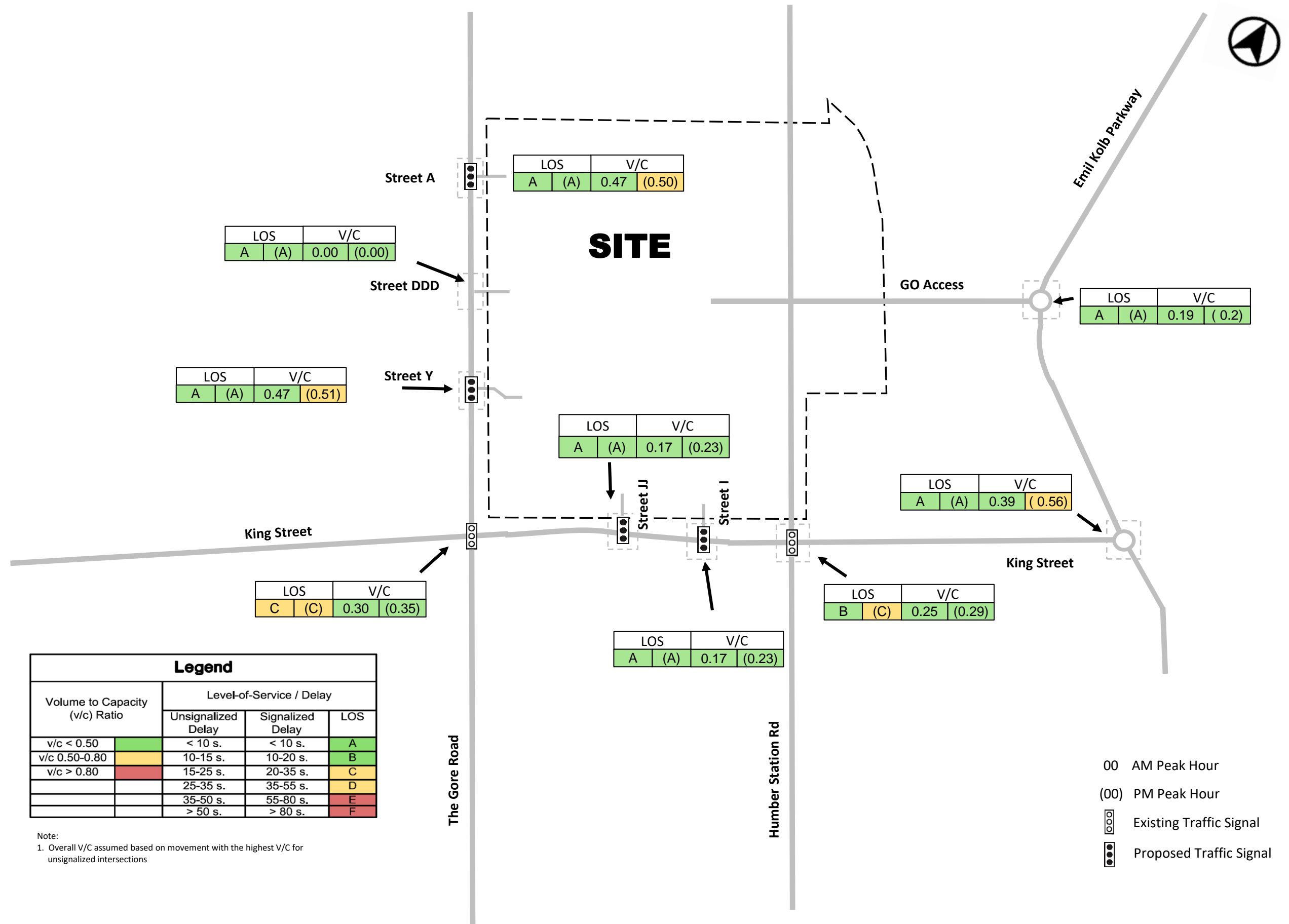
Note:
 1. Overall V/C assumed based on movement with the highest V/C for unsignalized intersections







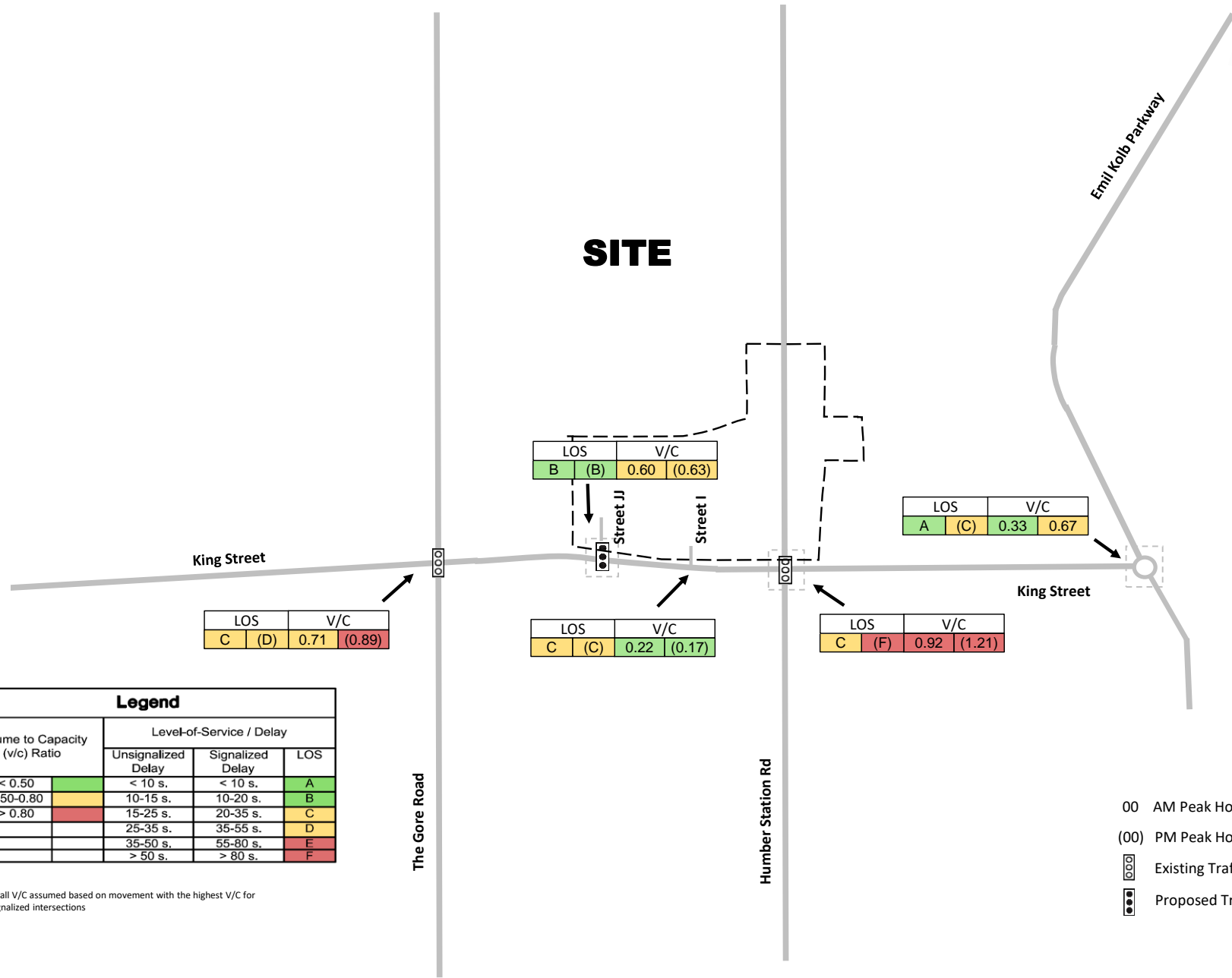








SITE



LOS	V/C
C (D)	0.71 (0.89)

LOS	V/C
B (B)	0.60 (0.63)

LOS	V/C
C (C)	0.22 (0.17)

LOS	V/C
A (C)	0.33 0.67

LOS	V/C
C (F)	0.92 (1.21)

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

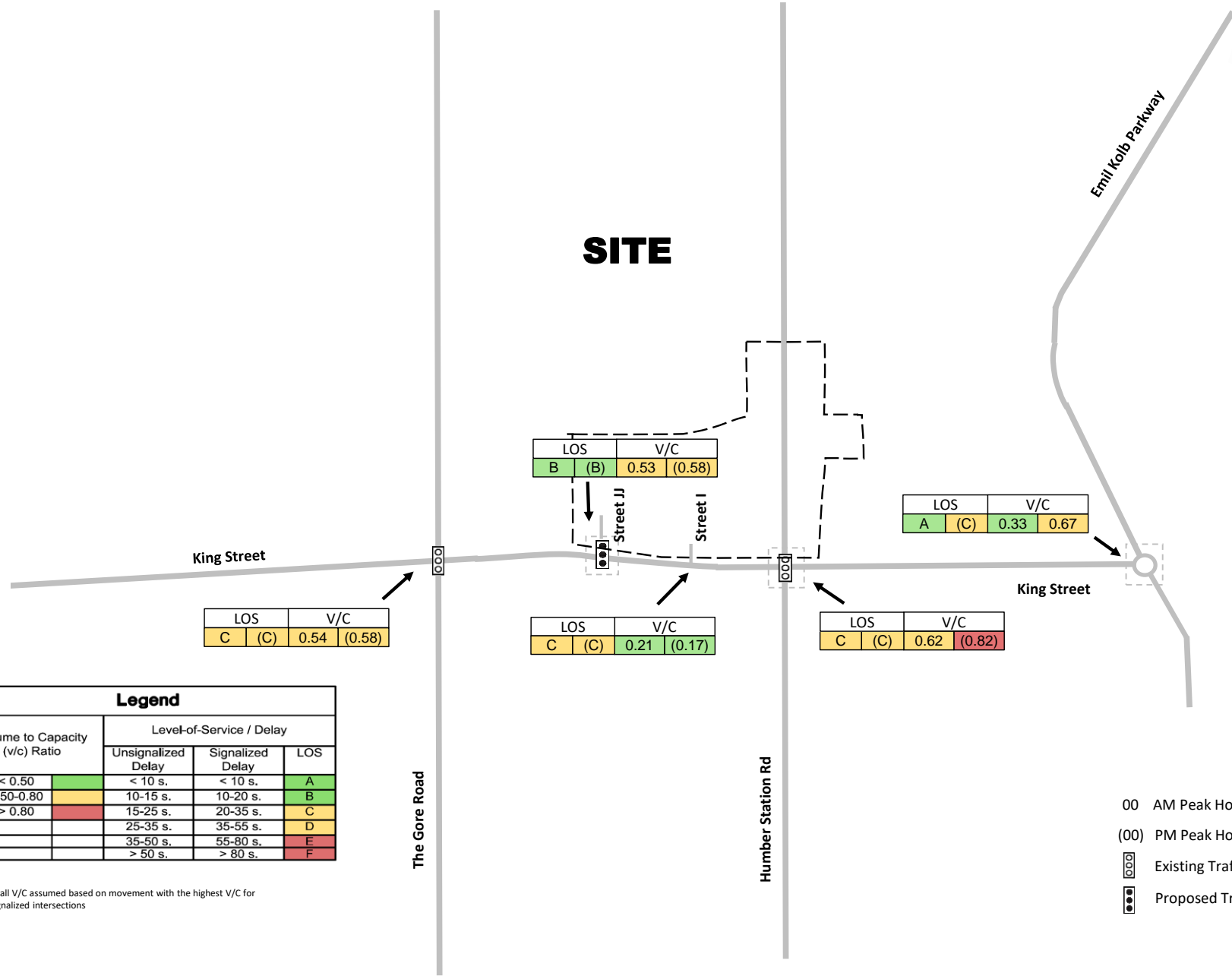
- 00 AM Peak Hour
- (00) PM Peak Hour
- 000 Existing Traffic Signal
- 000 Proposed Traffic Signal



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SITE



LOS	V/C
C (C)	0.54 (0.58)

LOS	V/C
C (C)	0.21 (0.17)

LOS	V/C
B (B)	0.53 (0.58)

LOS	V/C
A (C)	0.33 0.67

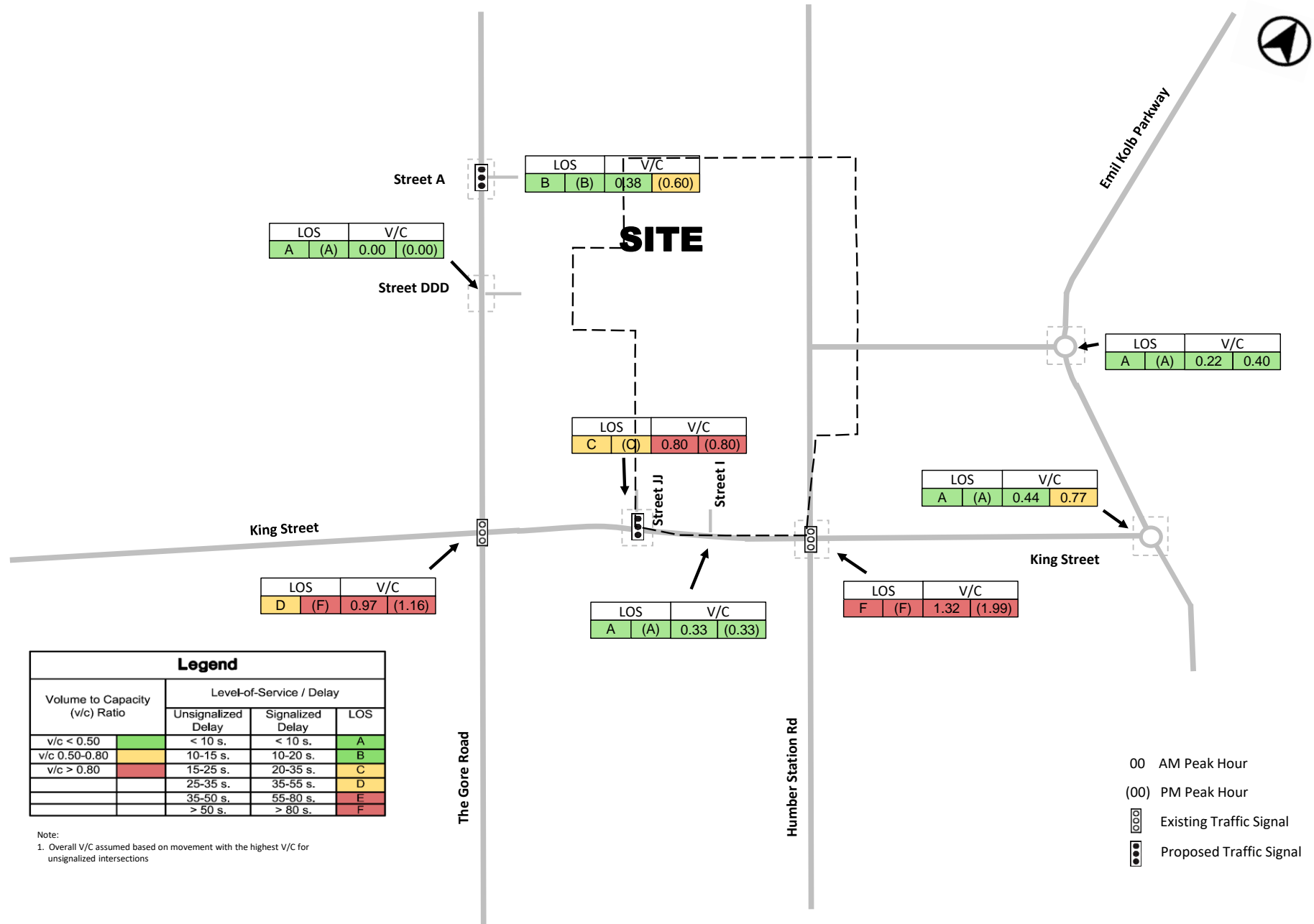
LOS	V/C
C (C)	0.62 (0.82)

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

- 00 AM Peak Hour
- (00) PM Peak Hour
- 000 Existing Traffic Signal
- 000 Proposed Traffic Signal

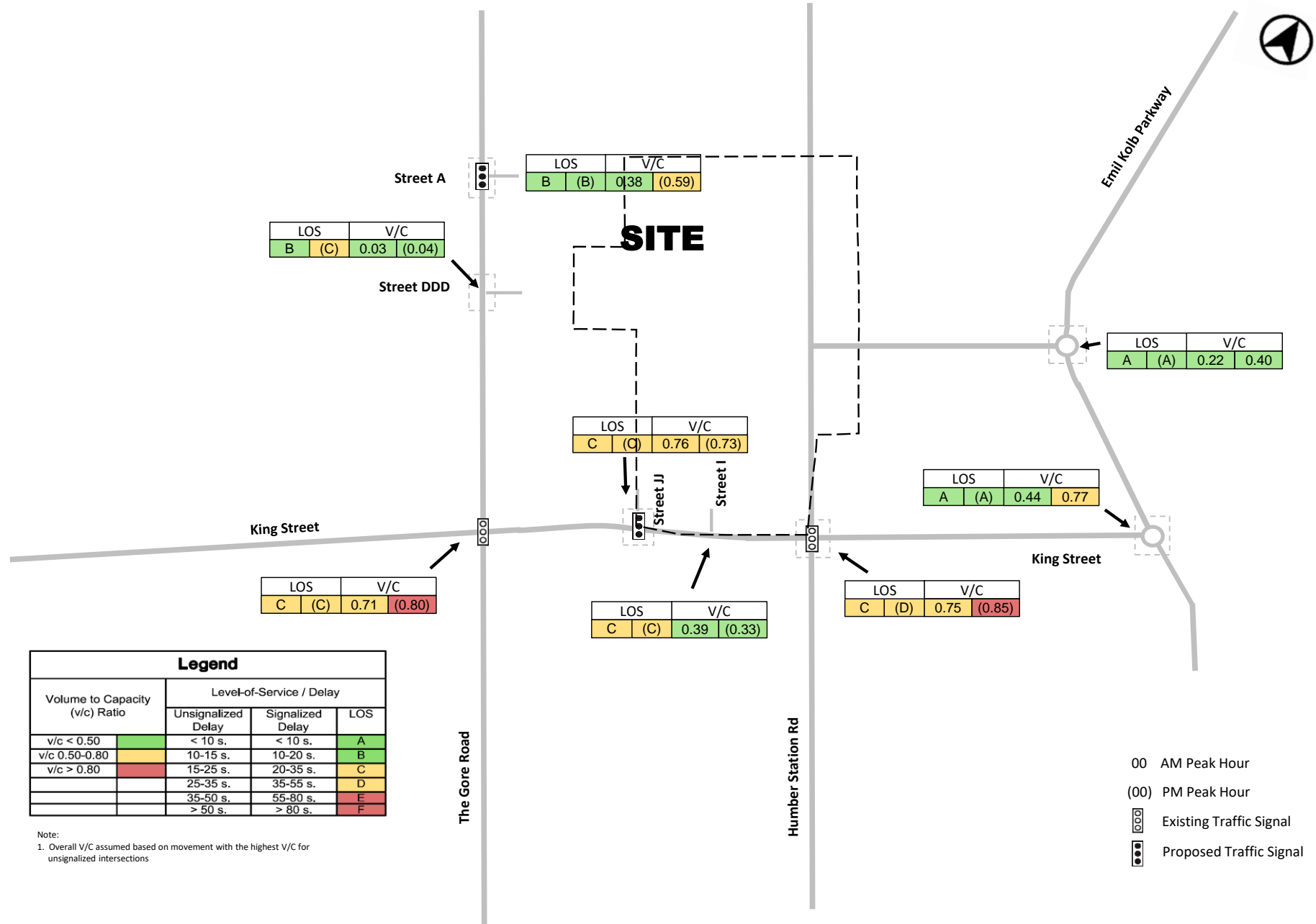






Legend			
Volume to Capacity (v/c) Ratio	Level-of-Service / Delay		
	Unsignalized Delay	Signalized Delay	LOS
v/c < 0.50	< 10 s.	< 10 s.	A
v/c 0.50-0.80	10-15 s.	10-20 s.	B
v/c > 0.80	15-25 s.	20-35 s.	C
	25-35 s.	35-55 s.	D
	35-50 s.	55-80 s.	E
	> 50 s.	> 80 s.	F

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



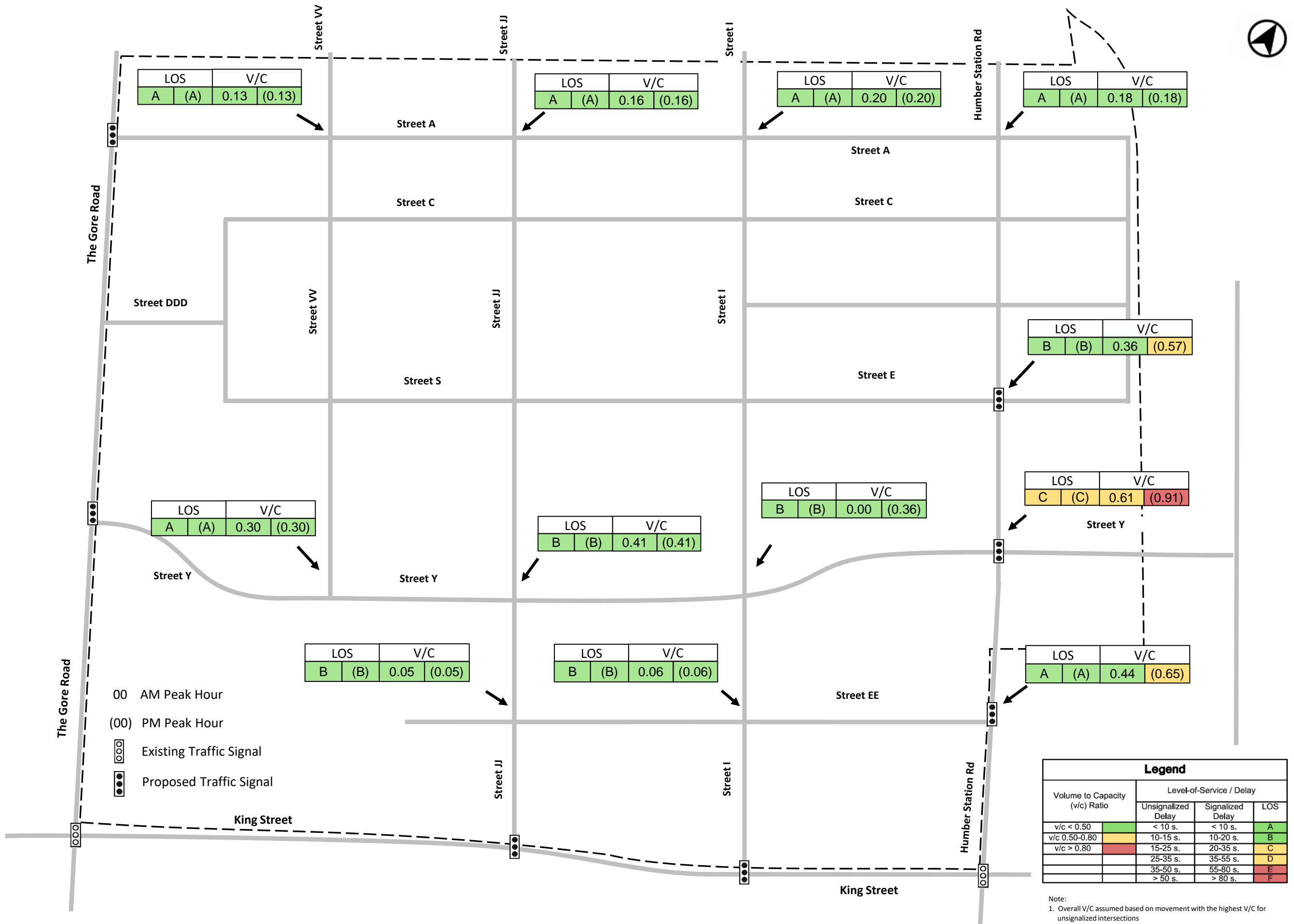
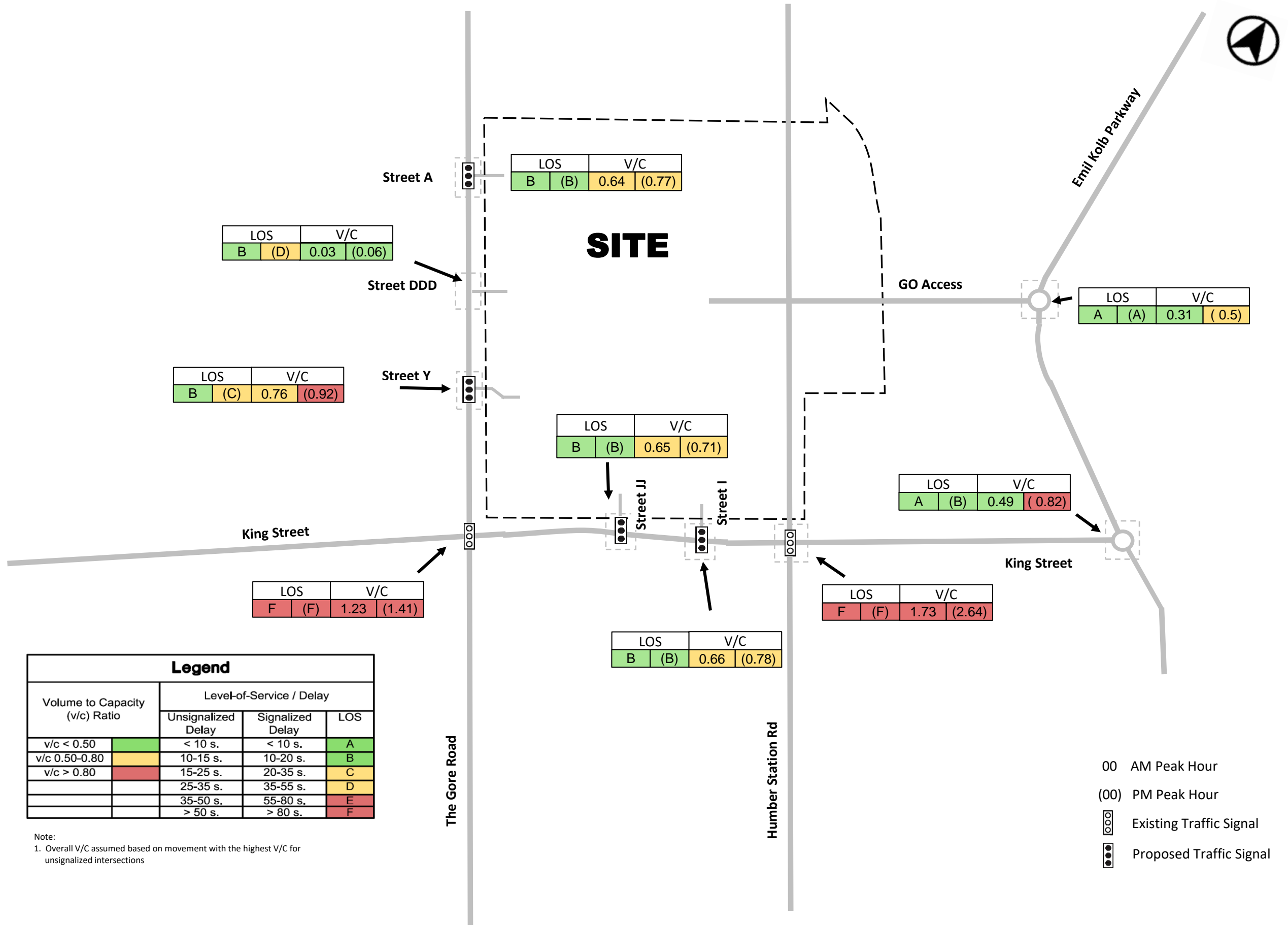
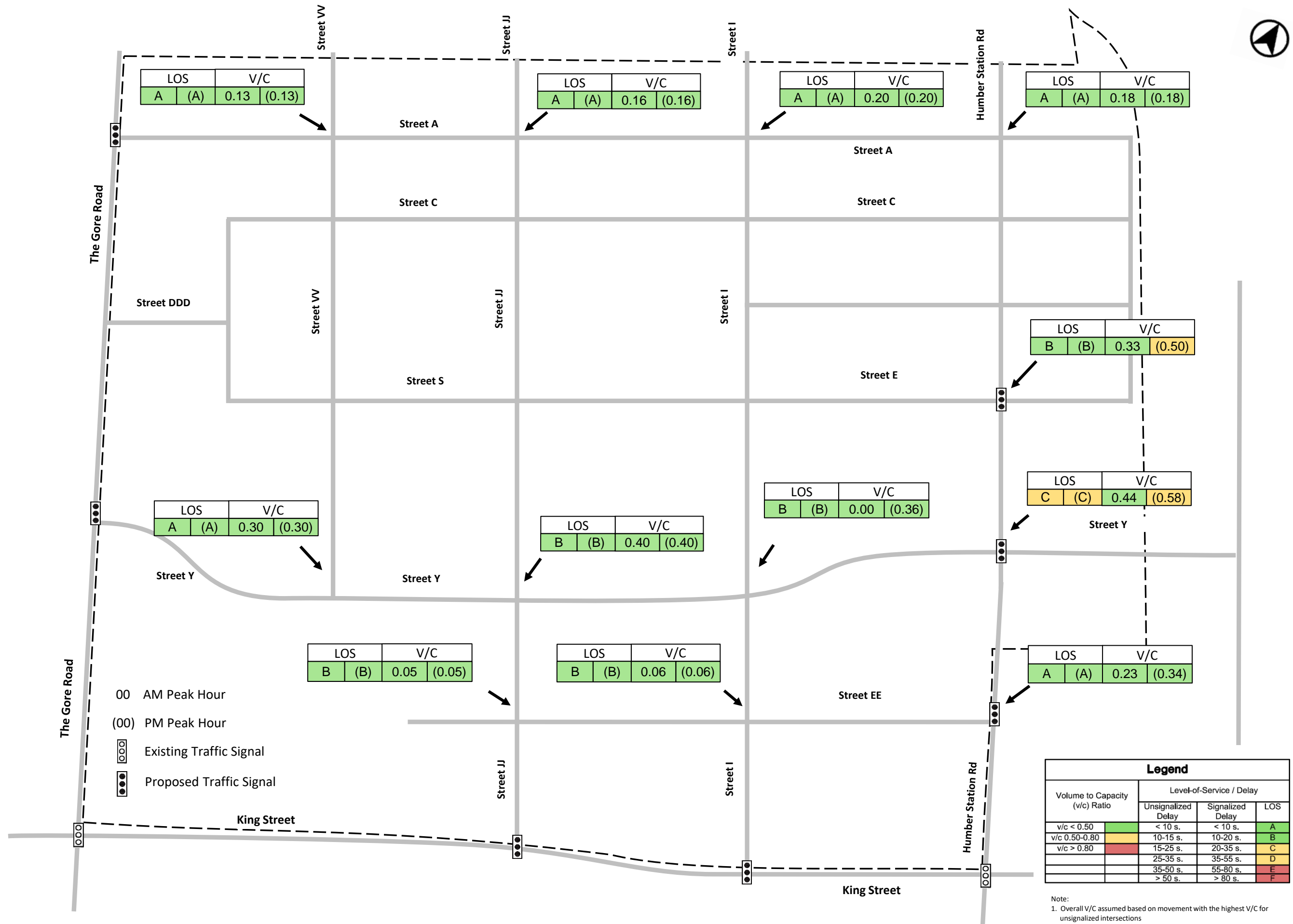
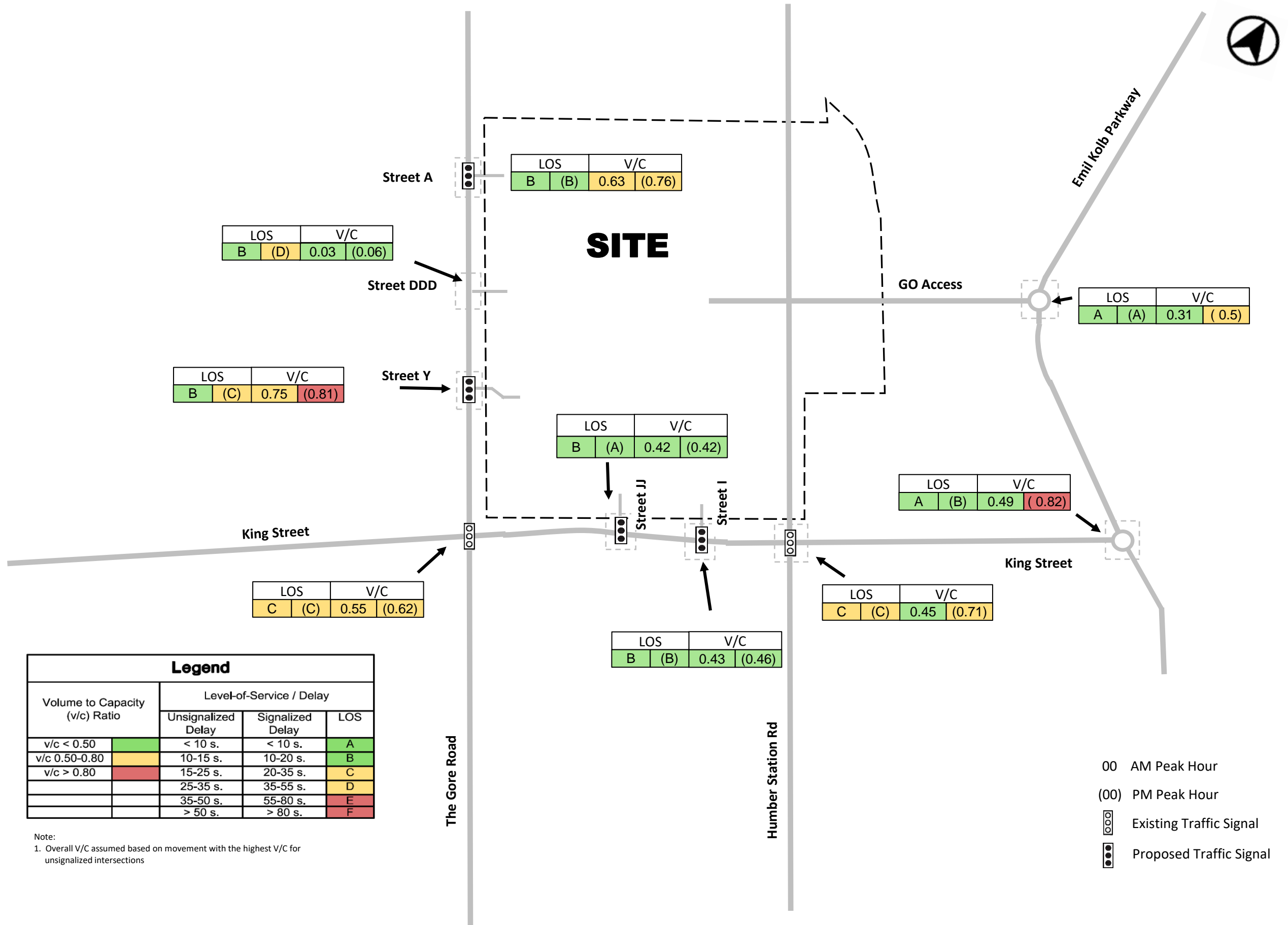


Figure 39A Full Build-out Future Total Intersection Operations (2041) – Internal (No Improvements)

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6.3 RECOMMENDED ROAD IMPROVEMENTS

Recommended area intersection improvements for the road network surrounding the Caledon Station Community based on background growth and community traffic projections. are summarized in **Table 27**, **Table 28** and **Table 29** for the Phase 1, Phase 2 and full build-out scenarios respectively and are shown graphically in **Figure 11**, **Figure 12** and **Figure 13** respectively.. Recommended area road widenings are summarized in **Table 30** for full build-out.

TABLE 27 PHASE 1 RECOMMENDED ROAD NETWORK IMPROVEMENTS - INTERSECTIONS

Road	Recommended Intersection Improvements
Humber Station Road	<ul style="list-style-type: none"> Widen intersection approaches at King Street / Humber Station Road to include exclusive left turning lanes and right turn lanes on the south, north, and west approaches. Provide continuous cycling facilities along Humber Station for portions constructed in Phase 1. Protect for signals at Collector Roads / Humber Station Road intersections. Construct only if/when warranted.
King Street	<ul style="list-style-type: none"> Provide signals at arterial/collector road intersections: Street JJ. Provide a right-turns only intersection at Street I. Widen intersection approaches at King Street / Humber Station Road to include exclusive left turning lanes and right turn lanes on the south, north, and west approaches. 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 concurrent with construction of Phase 1 lands.¹
Collector and Local Roads	<ul style="list-style-type: none"> Construct Collector Roads with connected and continuous active transportation facilities (i.e. Multi-Use Paths) Protect for signals at Collector Roads / Collector Road intersections. Construct only if/when warranted.
Transit	<ul style="list-style-type: none"> Implement interim transit route extension (buses) to Phase 1 lands.

Notes:

- Peel Region is currently planning to grade separate King Street at the CPKC 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. A Fire Station is located within the Phase 1 lands.

TABLE 28 PHASE 2 RECOMMENDED ROAD NETWORK IMPROVEMENTS - INTERSECTIONS

Road	Recommended Intersection Improvements
Humber Station Road	<ul style="list-style-type: none"> • Provide westbound right exclusive turn lane at King Street / Humber Station Road. • Re-align north extent of Humber Station Road to extend to northwest urban boundary expansion lands and existing Humber Station. • Provide a directional closure along Humber Station Road, between Street E and Street C that provides a permanent traffic calming feature while still allowing access for parking and continuous access for cyclists and pedestrians.
King Street	<ul style="list-style-type: none"> • Provide westbound right exclusive turn lane at King Street / Humber Station Road. • Monitor roundabout intersection operations at King Street / Emil Kolb Parkway as community grows
Gore Road	<ul style="list-style-type: none"> • Provide east-west extension of Collector Road Network to Gore Road: Street A (full moves signal) and Street DDD (right turns only)
Go Access / Emil Kolb Parkway	<ul style="list-style-type: none"> • Provide 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
Collector and Local Roads	<ul style="list-style-type: none"> • Construct Collector Roads with connected and continuous active transportation facilities (i.e. Multi-Use Paths) • Protect for signals at Collector Roads / Collector Road intersections. Construct only if/when warranted.
Transit	<ul style="list-style-type: none"> • Expand bus transit route to Phase 1 and 2 lands. • Introduce GO Station concurrent with construction of Phase 2 lands.

TABLE 29 FULL BUILD-OUT RECOMMENDED ROAD NETWORK IMPROVEMENTS - INTERSECTIONS

Road	Recommended Intersection Improvements
Humber Station Road	<ul style="list-style-type: none"> • Widen from 2 to 4 lanes (up to the GO Station) • Maintain 2 lanes north of GO Station through “Hub” main Street environment. • Provide continuous cycling facilities along Humber Station through entirety of the Caledon Station community.
King Street	<ul style="list-style-type: none"> • Widen King Street to four lanes. • Construct full moves and signalization of Street I / King Street (right turns in Phases 1 & 2)
Gore Road	<ul style="list-style-type: none"> • Provide remaining Collector Road intersections with The Gore Road (signal at Street Y)
Collector and Local Roads	<ul style="list-style-type: none"> • Construct remaining Collector Roads with connected and continuous active transportation facilities (i.e. Multi-Use Paths) • Protect for signals at Collector Roads / Collector Road intersections. Construct only if/when warranted.
Transit	<ul style="list-style-type: none"> • Expand bus transit route to entire Secondary Plan lands.

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 30**. Phase 1 and Phase 2 scenarios do not require widenings of the boundary roads.

Detailed design of boundary roads within the Secondary Plan that are subject to area growth related findings of the RTMP and MMTMP studies will require continued coordination with the municipality.

TABLE 30 FULL BUILD-OUT RECOMMENDED ROAD NETWORK IMPROVEMENTS – CORRIDOR WIDENINGS

Road	Recommended Corridor Improvement	Segment
Humber Station Road	<ul style="list-style-type: none"> Widen from 2 to 4 lanes (up to the GO Station) Maintain 2 lanes north of GO Station through “Hub” main Street environment. Provide a directional closure along Humber Station Road (north of the GO Station entrance), between Street E and Street C that provides a permanent traffic calming feature while still allowing access for parking and continuous access for cyclists and pedestrians. Provide separated cycling facilities along the entire length of Humber Station Road. 	King Street to GO Station entrance.
King Street	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 will be required to progress detailed design. 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 OP. This plan allows 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, Humber Station Road and Street Y according to the Ontario Traffic Manual Book 12, and are attached in **Appendix H**. 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 31**.

TABLE 31 SUMMARY OF SIGNAL WARRANT ANALYSES

Intersection	Phase 1		Phase 2		Full Build-out	
	Justified?	Justification	Justified?	Justification	Justified?	Justification
King St / Street JJ	Yes	Justification 3 (Combination) and Justification 4 (4-hour)	Yes	Justification 3 (Combination) and Justification 4 (4-hour)	Yes	Justification 4 (4-hour)
King St / Street I	No	-	No	-	Yes	Justification 4 (4-hour)
The Gore Road / Street Y	-	-	-	-	Yes	Justification 4 (4-hour)
The Gore Road / Street A	-	-	No	-	Yes	Justification 4 (4-hour)
Humber Station Road / Street E	No	-	No	-	Yes	Justification 3 (Combination)
Humber Station Road / Street Y	No	-	No	-	Yes	Justification 1 (Min. Volume), Justification 3 (Combination), and Justification 4 (4-hour)
Humber Station Road / Street EE	No	-	No	-	No	Not justified. Recommended to protect for potential future signal or signalized pedestrian crossing.
Emil Kolb Parkway / Street Y (roundabout)	-	-	No	-	Yes	Justification 4 (4-hour)
Street Y / Street I	No	-	No	-	No	-
Street Y / Street JJ	No	-	No	-	No	-

7.1 COLLECTOR / ARTERIAL SIGNALIZATION

All collector/arterial intersections within the Caledon Station Secondary Plan are justified for signalization by either Justification 1, 3, or 4 at full build-out. Prior to full build-out, signalization is justified at King Street / Street JJ. 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, detailed design is subject to coordination with ongoing RTMP and MMTMP analysis.

7.2 COLLECTOR / COLLECTOR SIGNALIZATION

Collector / Collector road intersections are recommended to be all-way or two-way stop control until (and only if) warranted for signalization in future. Each collector / collector road intersection is recommended to be designed such that signalization can be implemented if or when needed.

Full Buildout has assumed signalization. However, the gradual buildout of the Secondary Plan will determine individual intersection needs and protecting for and constructing signals only when warranted will appropriately address the community's needs and will mitigate risks associated with increased speeds through signalized intersections (as compared to all-way stop control) if never warranted/required.

Protected intersection design is recommended for both unsignalized and signalized design at these intersection locations.

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 be 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.
 - Community-Wide Development Staging and Sequencing Plan (DSSP). The DSSP was recently completed and submitted by Caledon Community Partners.

- 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 CPKC 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)
 - Draft Plan of Subdivision processes (as required). The TIS update can be relied upon by Draft Plan application for phased traffic analysis of the Secondary Plan area.

- 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. Widening of these roads is not anticipated until Phase 3 buildout of the Caledon Station lands. 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. Continued coordination with area growth related findings of the RTMP and MMTMP studies that are currently underway is recommended.

APPENDIX A:
Land Use Plan, Transportation Schedule, Framework Plan, and
Active Transportation Network Plan

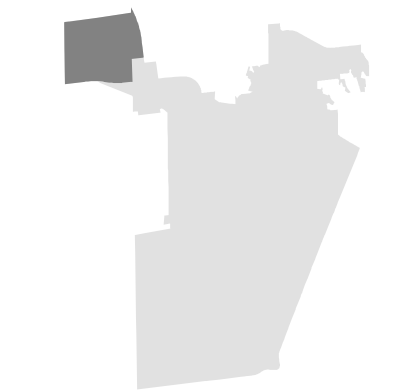
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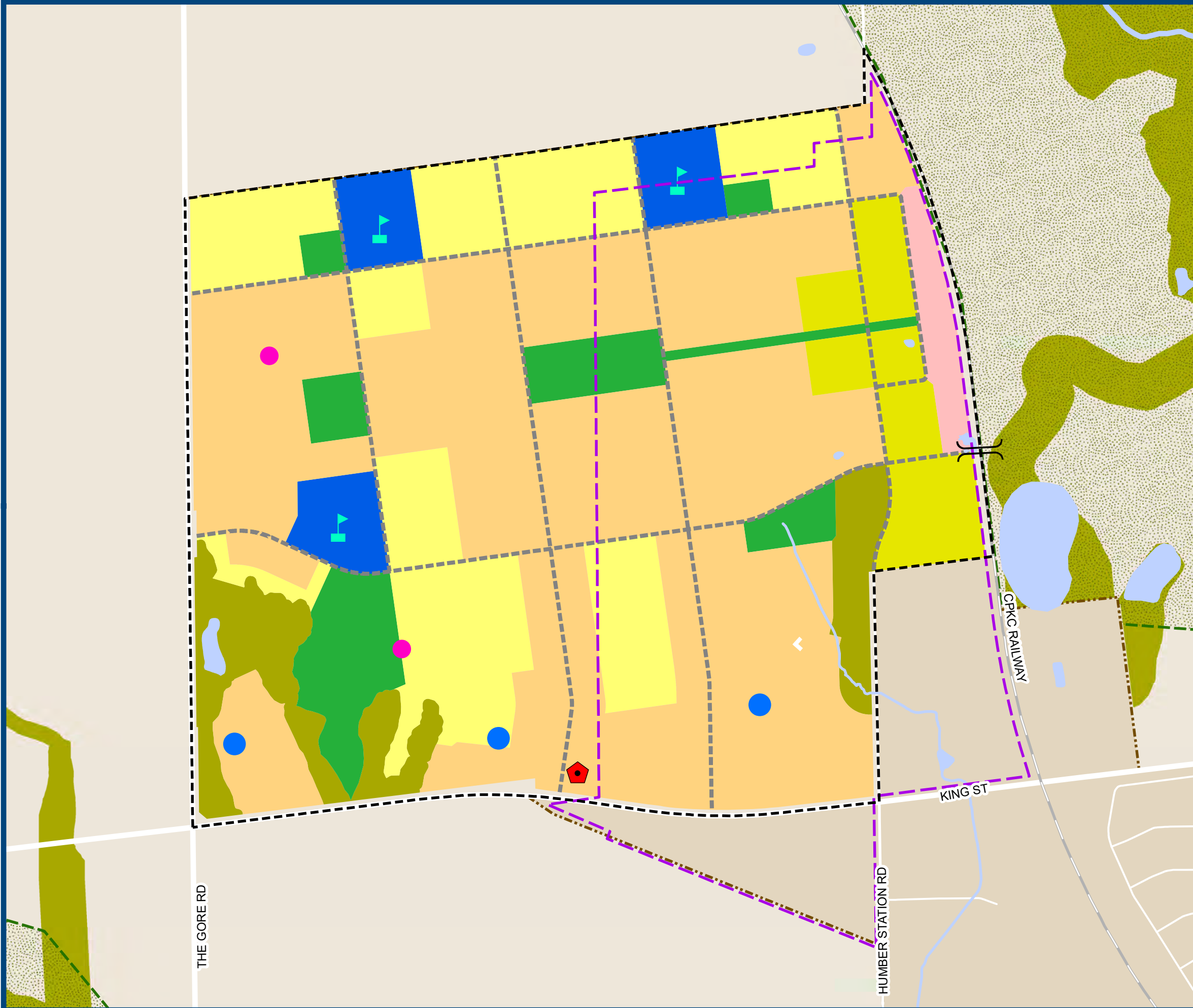


Schedule C-8
 (A Subschedule to Schedule "C")
CALEDON STATION
SECONDARY PLAN:
LAND USE PLAN

- Low Density Residential Areas
- Medium Density Residential Areas
- Mixed-Use/High Density Areas
- GO Transit Hub
- Open Space Policy Area
- Environmental Policy Area
- Institutional
- Major Transit Area Boundary
- Secondary Plan Area
- Bolton Settlement
- Boundary of Greenbelt Plan Area
- Conceptual Road Network
- Local Road
- Railway
- Potential Future Railway Grade Separation
- Elementary Schools
- Conceptual Stormwater Management Facility
- Cultural Heritage Resource
- Conceptual Fire Station Location



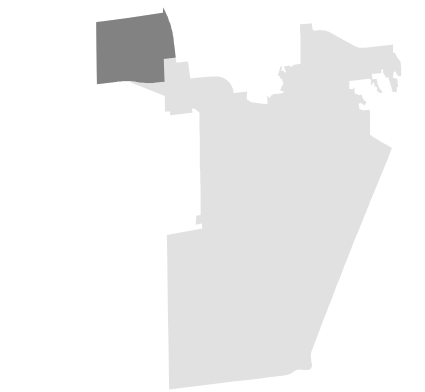
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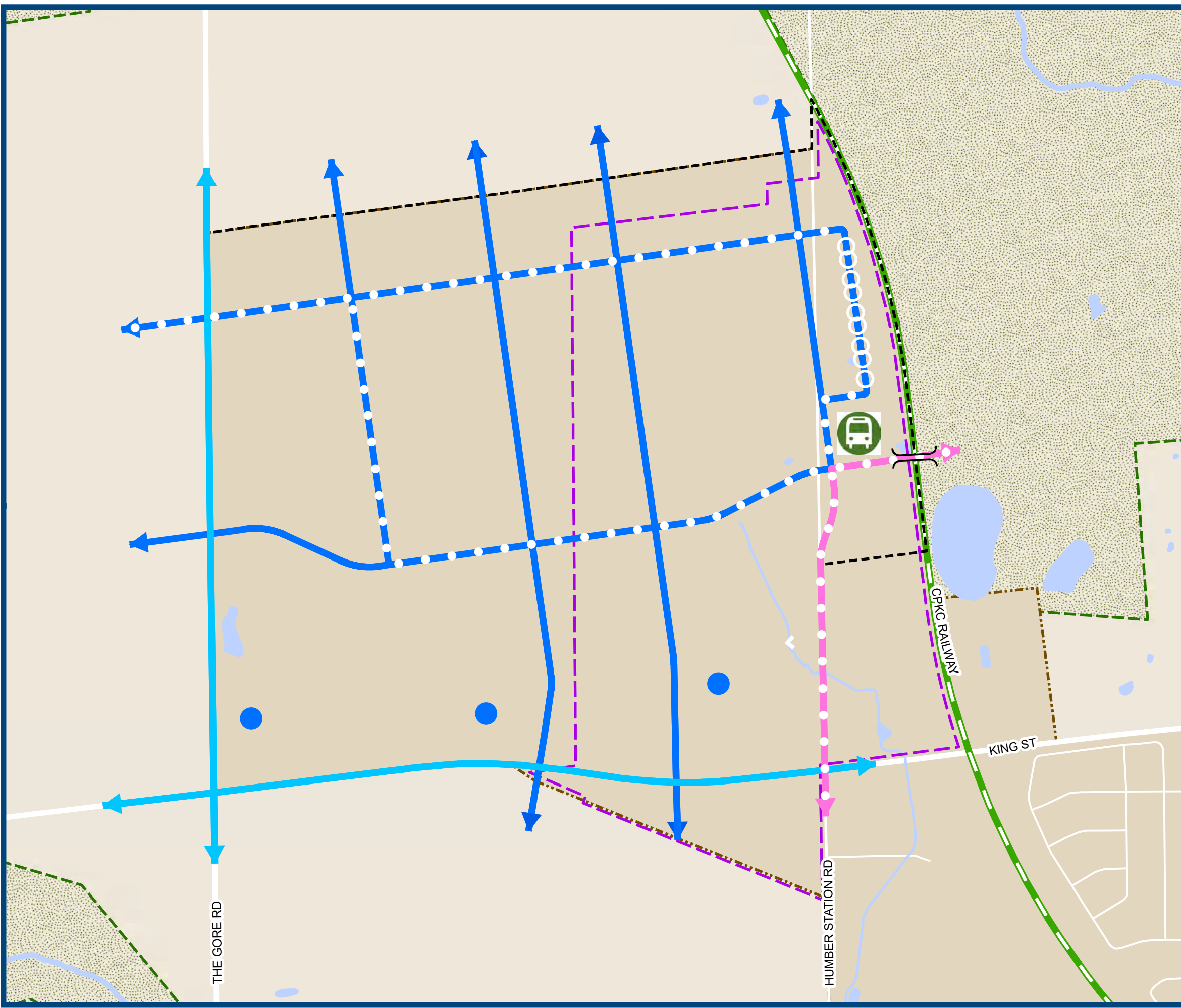


Schedule C-8A
 (A Subschedule to Schedule "C")
CALEDON STATION
SECONDARY PLAN:
TRANSPORTATION SCHEDULE

- Regional Arterial (30m)
- Town Arterial (26m)
- Town Collector (22m)
- Transit Routing
- Transit Street (22m)
- GO Transit Rail Line
- GO Transit Station
- Conceptual Stormwater Management Facility
- Conceptual Fire Station Location
- Potential Future Railway Grade Separation
- Major Transit Area Boundary
- Secondary Plan Area
- Bolton Settlement
- Boundary of Greenbelt Plan Area



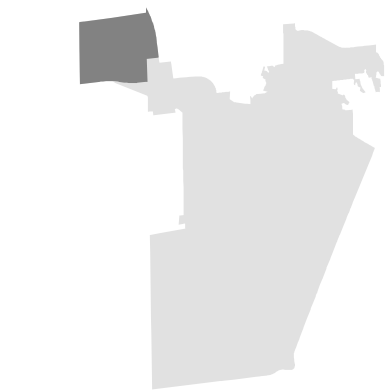
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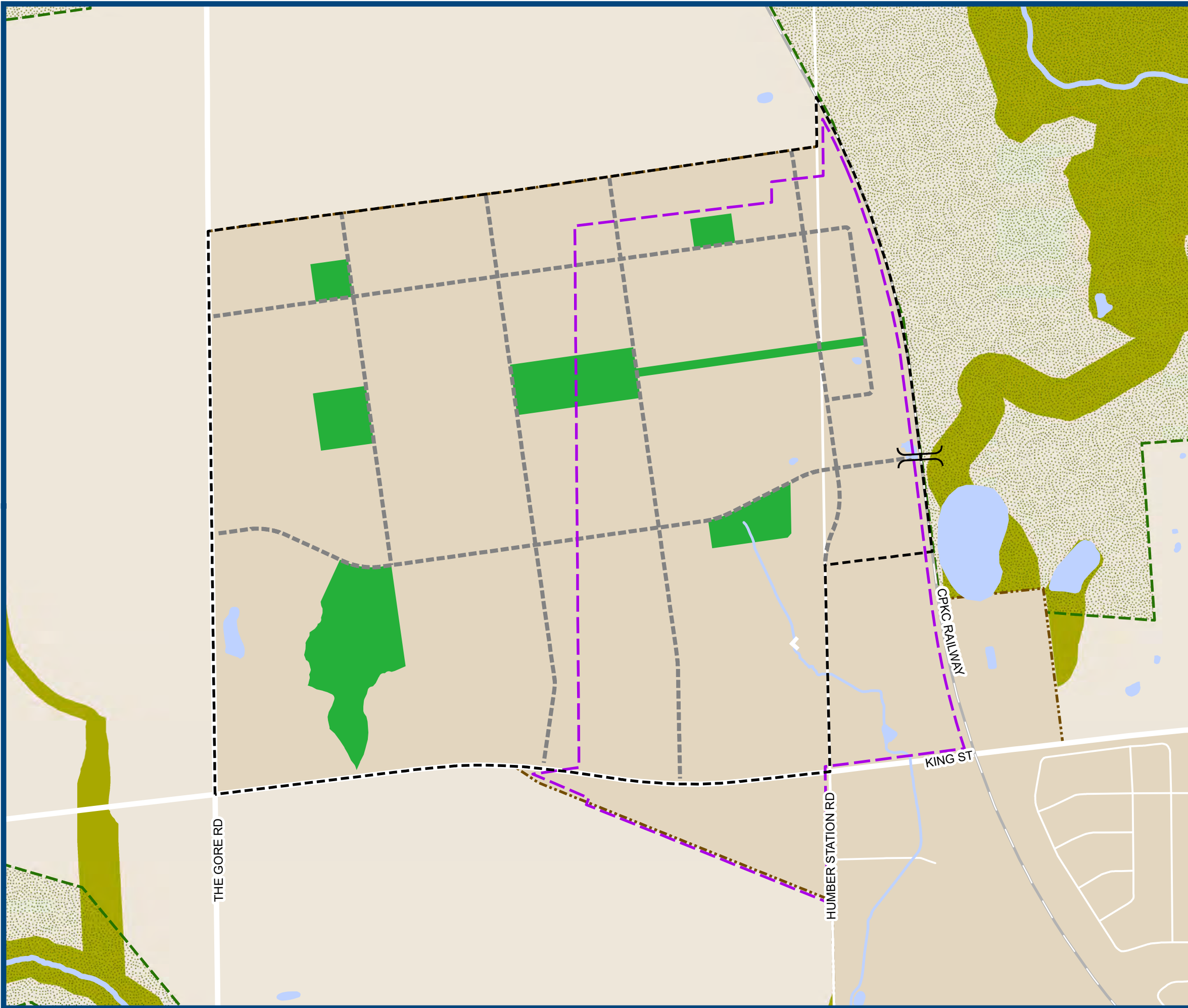


Schedule C-8B
 (A Subschedule to Schedule "C")
**CALEDON STATION
 SECONDARY PLAN:
 MUNICIPAL PARKS**

-  Open Space Policy Area
-  Environmental Policy Area
-  Major Transit Area Boundary
-  Secondary Plan Area
-  Bolton Settlement
-  Boundary of Greenbelt Plan Area
-  Conceptual Road Network
-  Local Road
-  Railway
-  Potential Future Railway Grade Separation



Base Data Source: Town of Caledon





LEGEND:

- MEDIUM DENSITY RESIDENTIAL
- MIXED-USE RESIDENTIAL (AT GRADE COMMERCIAL)
- GO TRANSIT LANDS
- SCHOOL
- PARK
- PROPOSED ENVIRONMENTAL PROTECTION AREA
- ENVIRONMENTAL ENHANCEMENT AREA
- SWM POND

UNIT SPECIFIC USES

- REAR LANE TOWNHOUSE
- DUAL FRONTAGE TOWNHOUSES
- BACK-TO-BACK TOWNHOUSES
- STACKED TOWNHOUSES
- SHALLOW TOWNHOUSES
- STANDARD TOWNHOUSES
- SHALLOW SINGLE DETACHED
- STANDARD SINGLE DETACHED

ROAD CLASSIFICATIONS

- MULTI-MODAL LOOP ROAD
- COLLECTOR ROADS

— MTSA LIMITS

• 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.

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- 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.



LEGEND:

- MEDIUM DENSITY RESIDENTIAL
- MIXED-USE RESIDENTIAL (AT GRADE COMMERCIAL)
- GO TRANSIT LANDS
- SCHOOL
- PARK
- PROPOSED ENVIRONMENTAL PROTECTION AREA
- ENVIRONMENTAL ENHANCEMENT AREA
- SWM POND

UNIT SPECIFIC USES

- REAR LANE TOWNHOUSE
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- STACKED TOWNHOUSES
- SHALLOW TOWNHOUSES
- STANDARD TOWNHOUSES
- SHALLOW SINGLE DETACHED
- STANDARD SINGLE DETACHED

ROAD CLASSIFICATIONS

- MULTI-MODAL LOOP ROAD
- COLLECTOR ROADS

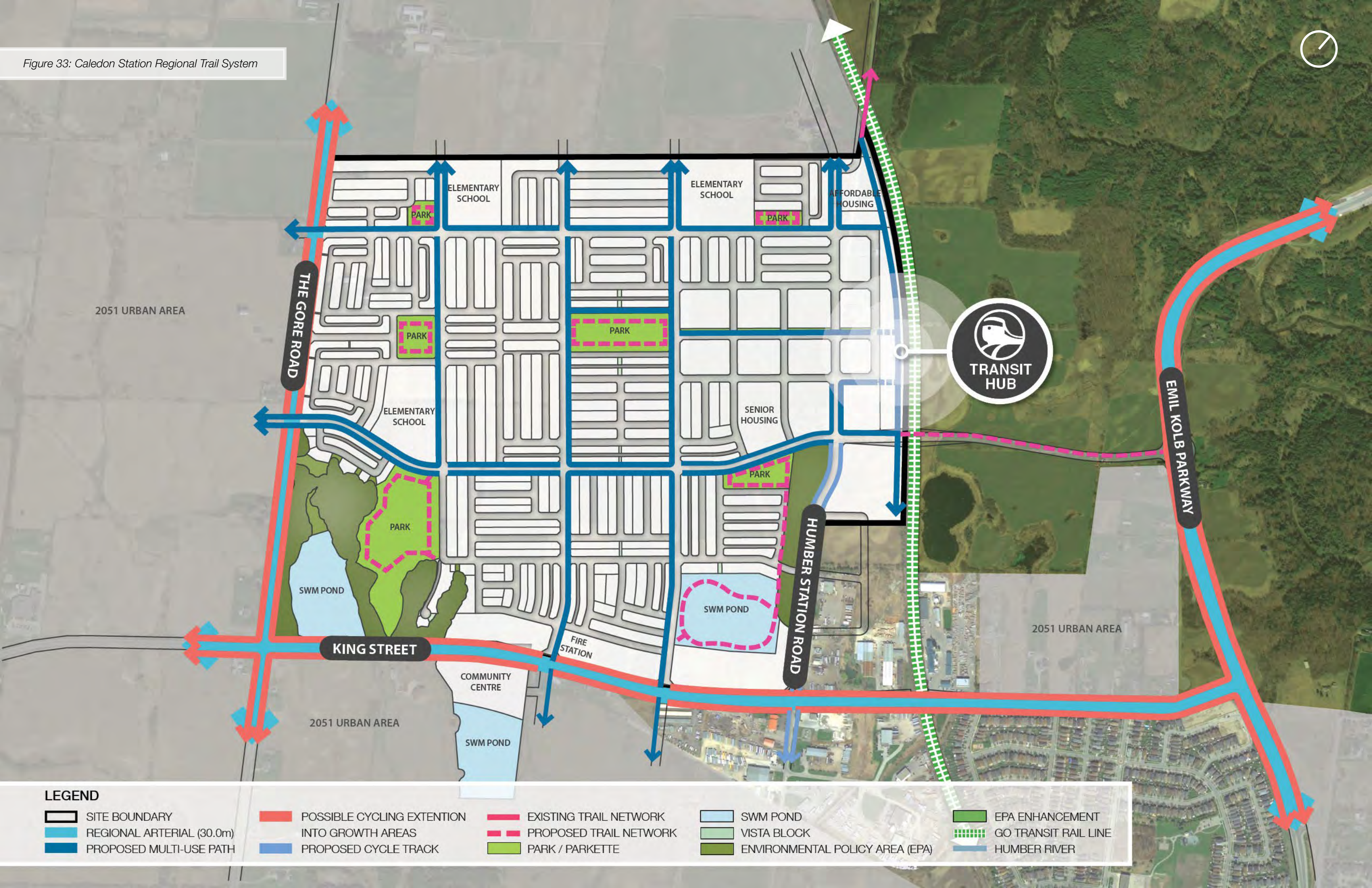
• All Units In Metric Unless Otherwise Noted.
 • Base Information Obtained From Various Sources And Is Approximate.
 • Schedule / Plan Information Is Conceptual And Requires Verification by Appropriate Agency.

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Figure 33: Caledon Station Regional Trail System



LEGEND

- | | | | | |
|--|--|--|---|--|
|  SITE BOUNDARY |  POSSIBLE CYCLING EXTENSION INTO GROWTH AREAS |  EXISTING TRAIL NETWORK |  SWM POND |  EPA ENHANCEMENT |
|  REGIONAL ARTERIAL (30.0m) |  PROPOSED CYCLE TRACK |  PROPOSED TRAIL NETWORK |  VISTA BLOCK |  GO TRANSIT RAIL LINE |
|  PROPOSED MULTI-USE PATH | |  PARK / PARKETTE |  ENVIRONMENTAL POLICY AREA (EPA) |  HUMBER RIVER |

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 be 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 is 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:
Humber Station Road Re-alignment and Town Response



Emily J. Ecker

From: Emily J. Ecker
Sent: November 30, 2023 6:00 PM
To: Kavleen Younan
Cc: Tanjot Bal; Emma.Howlett@caledon.ca; Arash Olia; Drew Haines; aaron@argoland.com; anil@argoland.com; karenb@gsai.ca; Scott A. Gibbons; Mohebullah Afzali
Subject: Caledon Station Secondary Plan: Potential Realignment of Existing Humber Station Road
Attachments: BA-Macville -FD-07-Nov30-23-Option1.pdf

Hi Kavleen,

Our team has been investigating functional designs for re-aligning existing Humber Station Road with the future Caledon Station Secondary Plan roads. Attached is a concept to share with the Town for your consideration.

Regards,
Emily

Emily J. Ecker, P.Eng.
Senior Associate

BA Consulting Group Ltd.

60 - 40 Weber Street East | Kitchener
w: 416 961 7110 x138 | c: 647 286 1048 | ecker@bagroup.com



**MOVEMENT
IN URBAN
ENVIRONMENTS**
BAGROUP.COM



LEGEND

← → POTENTIAL FUTURE MULTI-USE PATH (MUP)

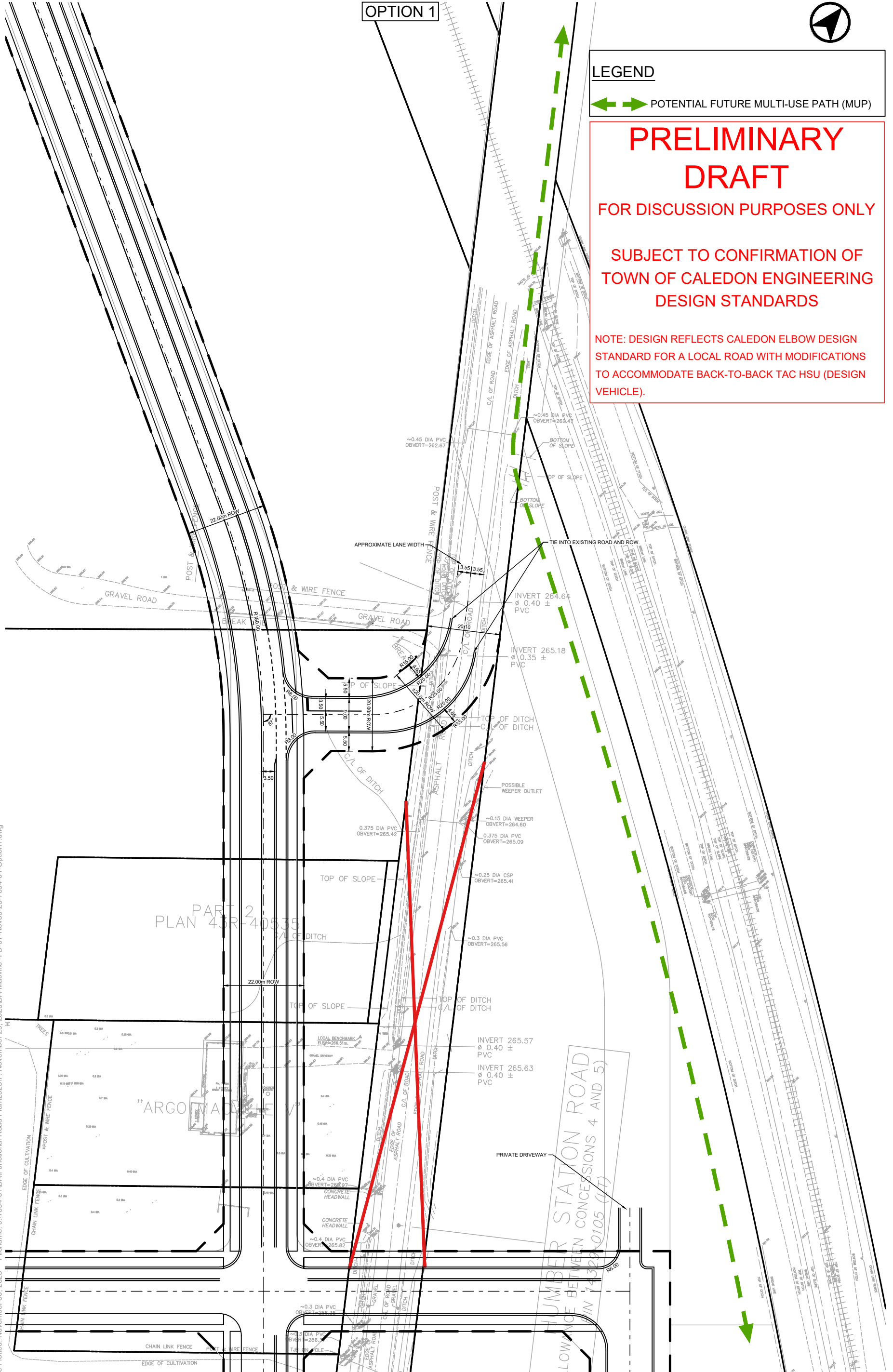
**PRELIMINARY
DRAFT**

FOR DISCUSSION PURPOSES ONLY

SUBJECT TO CONFIRMATION OF
TOWN OF CALEDON ENGINEERING
DESIGN STANDARDS

NOTE: DESIGN REFLECTS CALEDON ELBOW DESIGN
STANDARD FOR A LOCAL ROAD WITH MODIFICATIONS
TO ACCOMMODATE BACK-TO-BACK TAC HSU (DESIGN
VEHICLE).

OPTION 1



PART 2
PLAN 43R-40535

ARGO MA

TUMBER STATION ROAD
LOWWAY BETWEEN CONCESSIONS 4 AND 5)
IN 143R-0105 (47)

Date Plotted: November 30, 2023
Filename: J:\7694-01\BA\Functional Road Plan\2023\7 - November 29, 2023\BA-Macville -FD-07-Nov30-23-7694-01-Option1.dwg



**CALEDON STATION
SECONDARY PLAN**
POTENTIAL FUNCTIONAL DESIGN
TYING INTO EXISTING ALIGNMENT

Project: BOLTON RES. EXP.
Project No. 7694-01
Date: November 30, 2023
Revised: --

Scale 0 10 20 30 40 50m

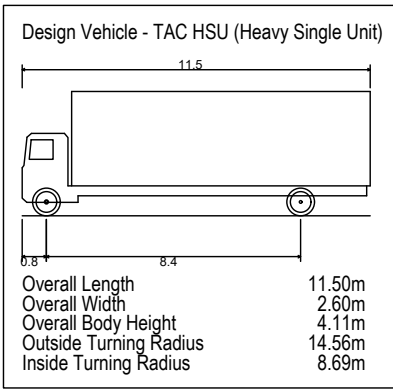
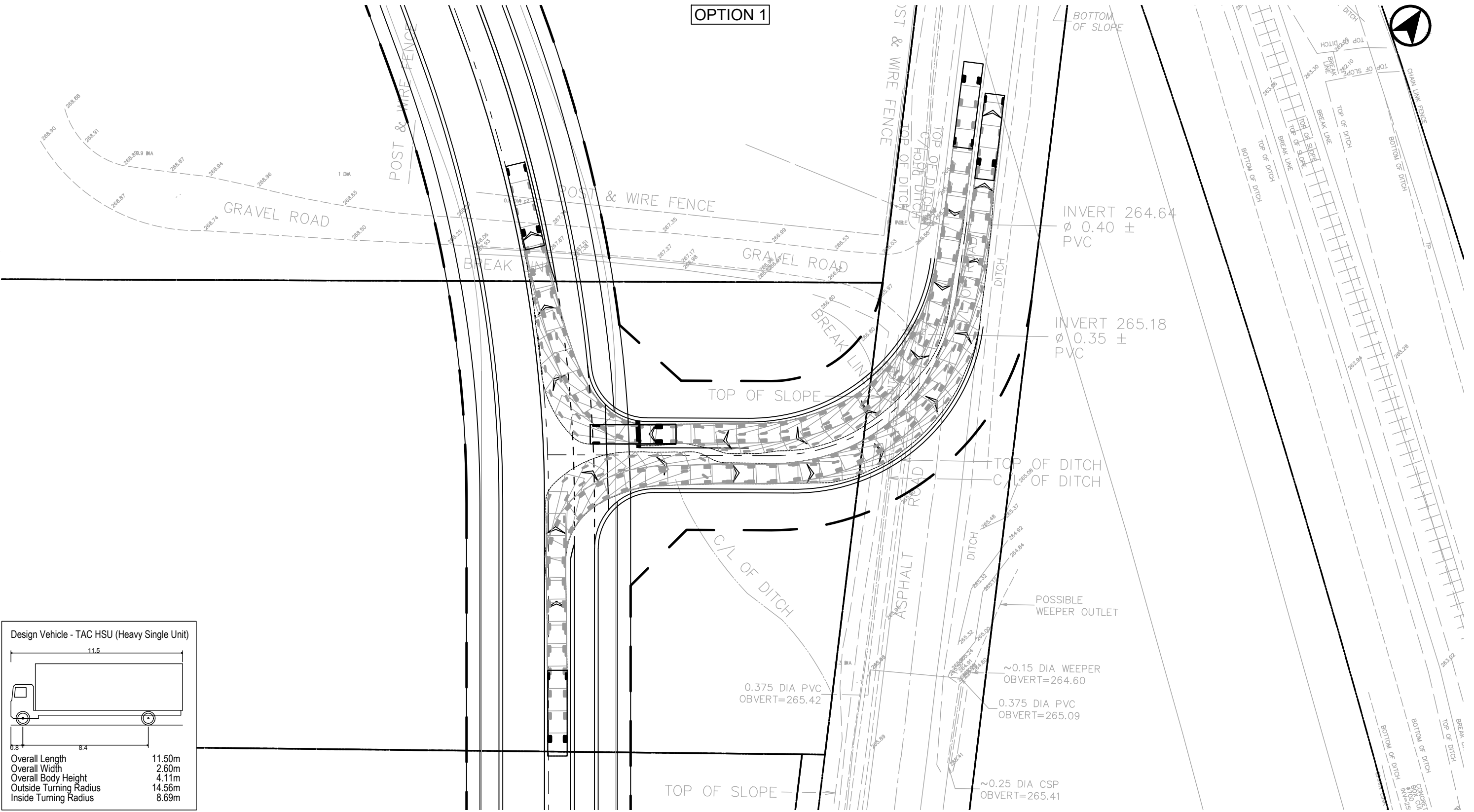
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Drawing No.

FD-01

Date Plotted: November 30, 2023 File name: J:\7694-01\BAI\Functional Road Plan\202317_November 29, 2023\BA-Macville -FD-07-Nov30-23-7694-01-Option1.dwg

OPTION 1



CALEDON STATION SECONDARY PLAN
POTENTIAL FUNCTIONAL DESIGN - TYING INTO EXISTING HUMBER STATION ALIGNMENT
VEHICLE MANOEUVRING DIAGRAMS
TAC HEAVY SINGLE UNIT (HSU) TRUCK

Project: Bolton Residential Exp.
 Project No. 7694-01
 Date: November 30, 2023
 Revised: --

Scale: 1:500

 Drawing No. **VMD-01**



MEMORANDUM

Transportation Engineering Public Works & Transportation Department

Date: December 11, 2023

To: Tanjot Bal, MCIP, RPP, Senior Planner
Development and Design, Planning Department

From: Kavleen S. Younan, P.Eng., Transportation Engineer
Transportation Engineering, Public Works, & Transportation Department

Subject: Caledon Station Secondary Plan – Transportation Comments
Potential Realignment of Existing Humber Station Road

Transportation Engineering Staff have reviewed the submitted drawing for the potential realignment of Existing Humber Station Road on November 30th, 2023 and offer the following comments:

- Please ensure that the ROW indicated in the Draft MMTMP is noted in the proposed drawing for now, to be further reviewed and specified at the latter approval stages. The current 9.0 m asphalt width is acceptable; however, it is to be reviewed further through draft plan approval and at the detailed design stage.
- Please provide a revised Framework Plan with the proposed realigned Humber Station Road.
- The roadway design is to comply with TAC and Town of Caledon Engineering Design Standards.
- Humber Station is identified as having an MUP in the ATMP. The proposed MUP location is fine preliminarily but that does not replace the need for MUP's along urban collector and arterial roads.
- The intersection control is to be determined through further detailed analysis as part of subsequent applications.
- A detailed pavement marking and signage plan will be required at the detailed design stage.

Please let me know if you have any questions or require any additional information.

Regards,

Kavleen S. Younan, P.Eng.
Transportation Engineer
Engineering, Public Works, & Transportation Department

APPENDIX D:
Concept Road Cross-Sections and Active Transportation Network
Urbantech, NAK Design Strategies, and BA Group



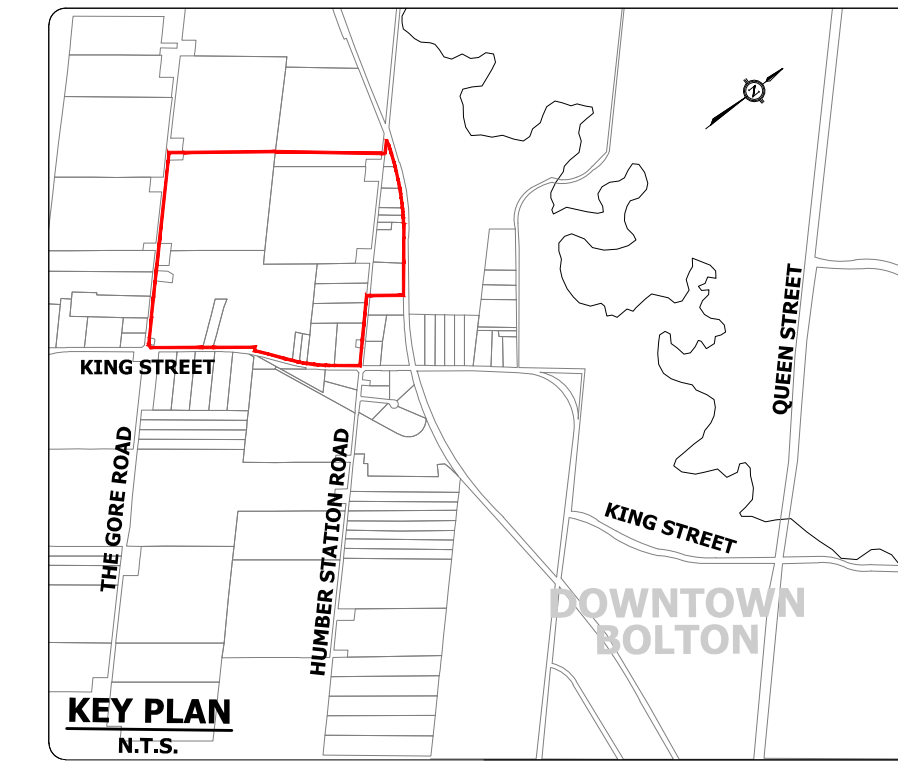
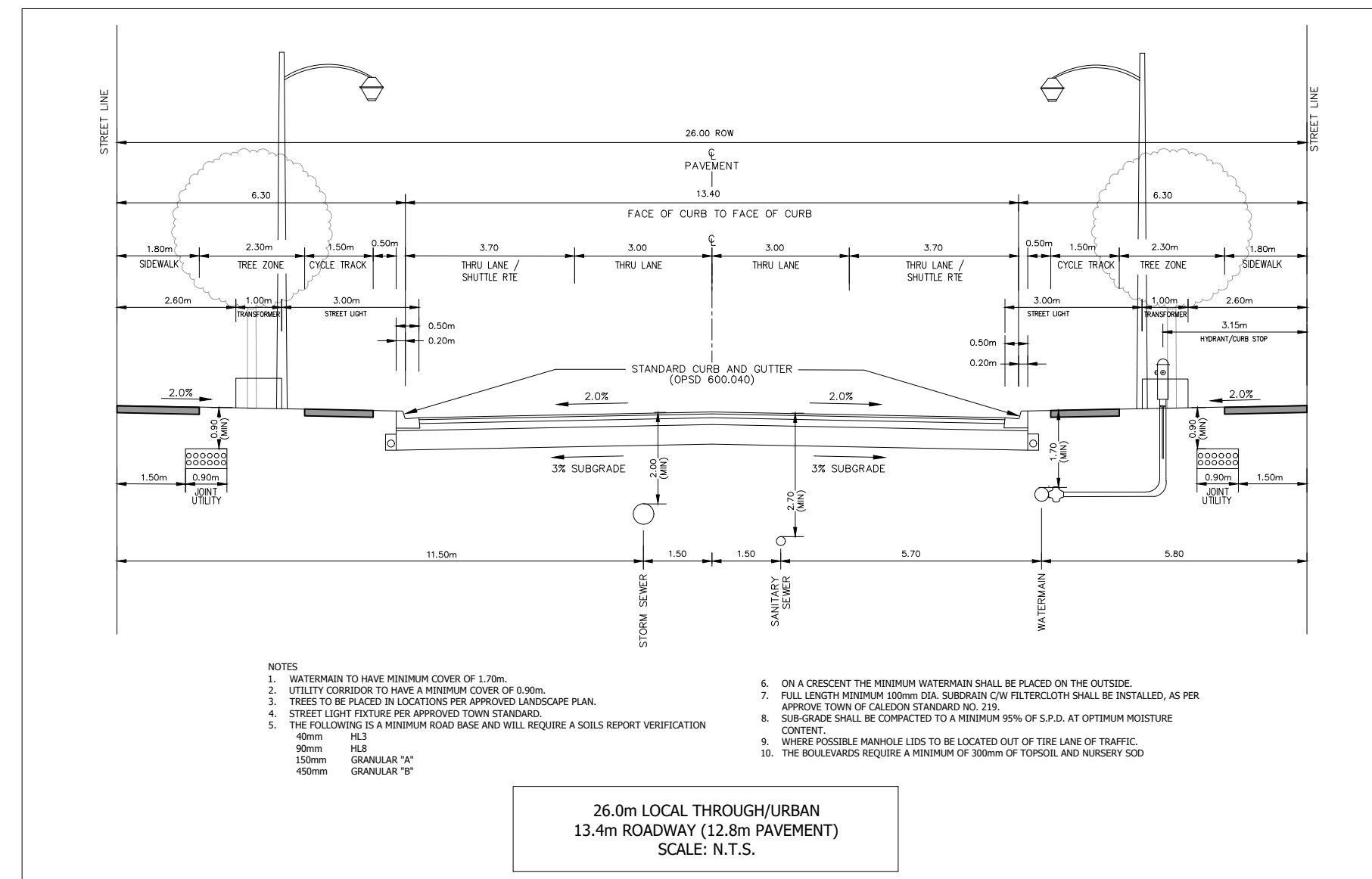
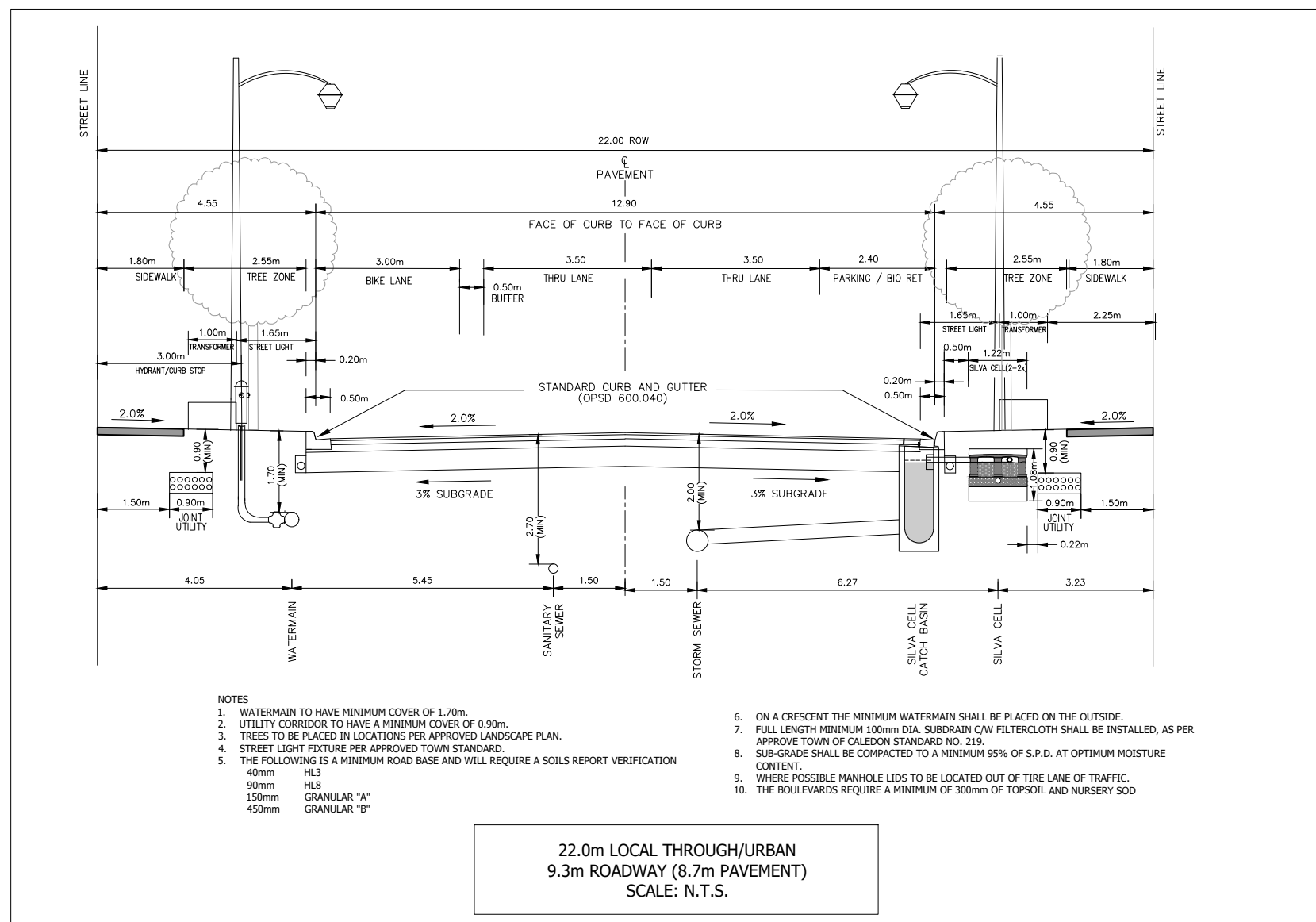
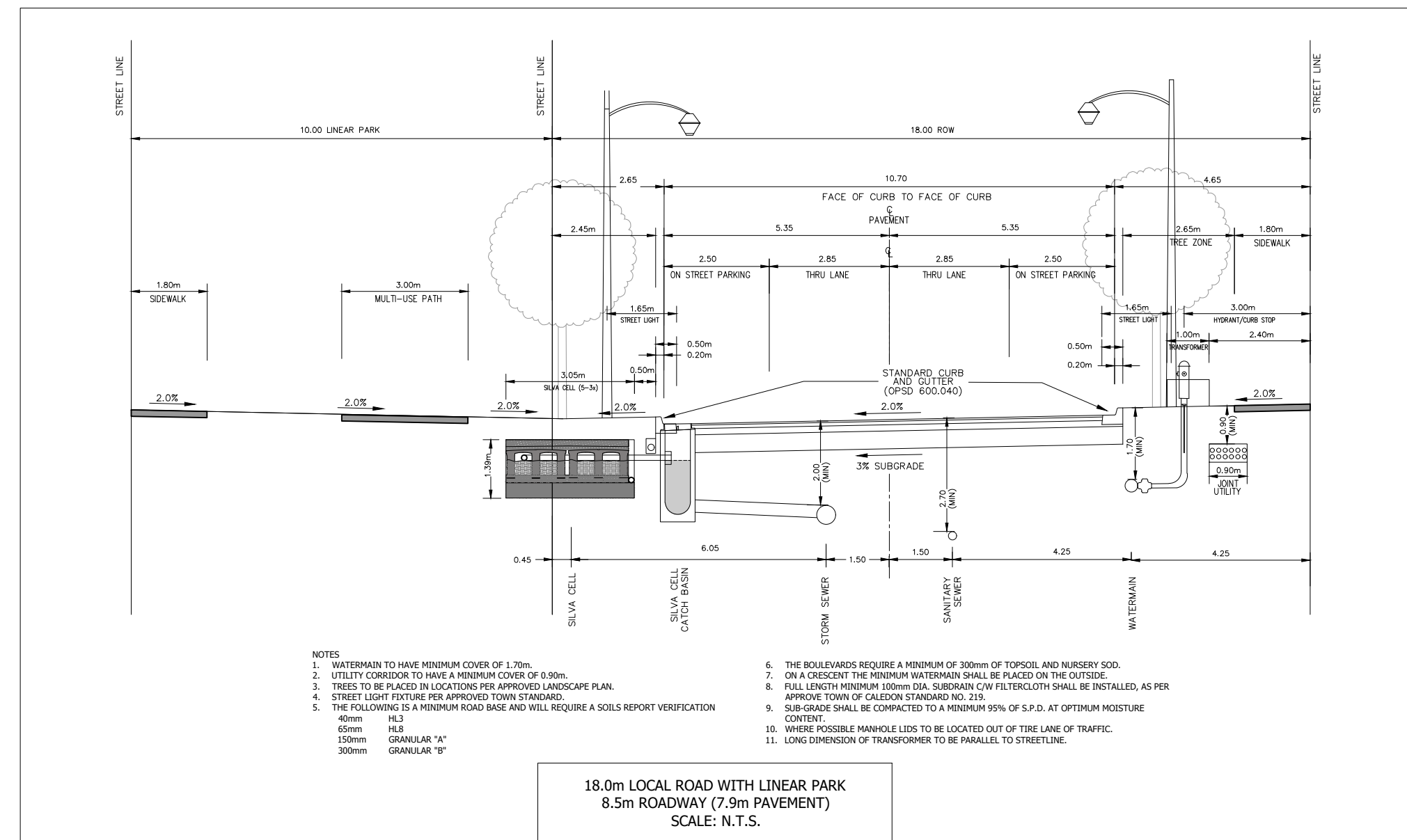
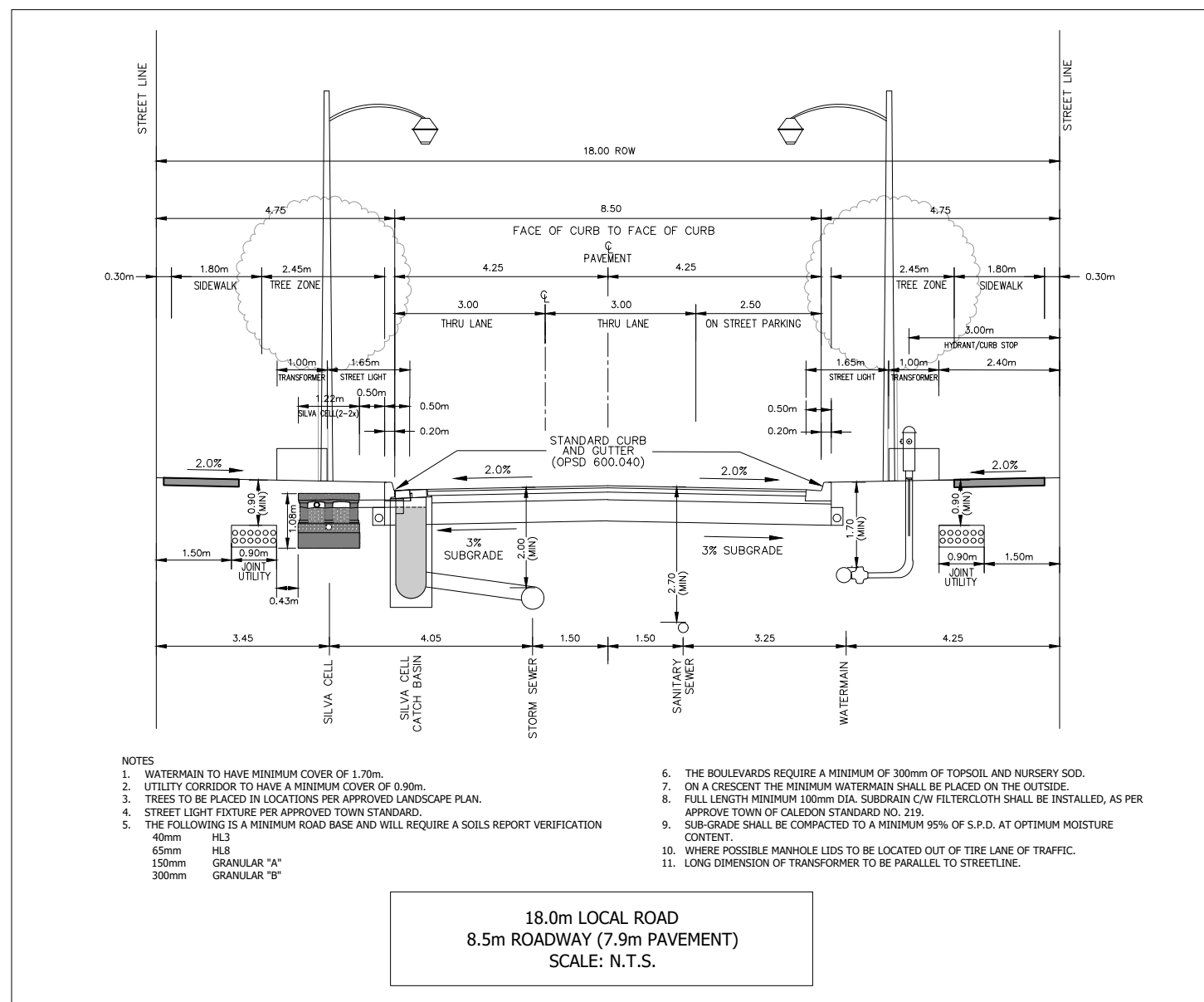
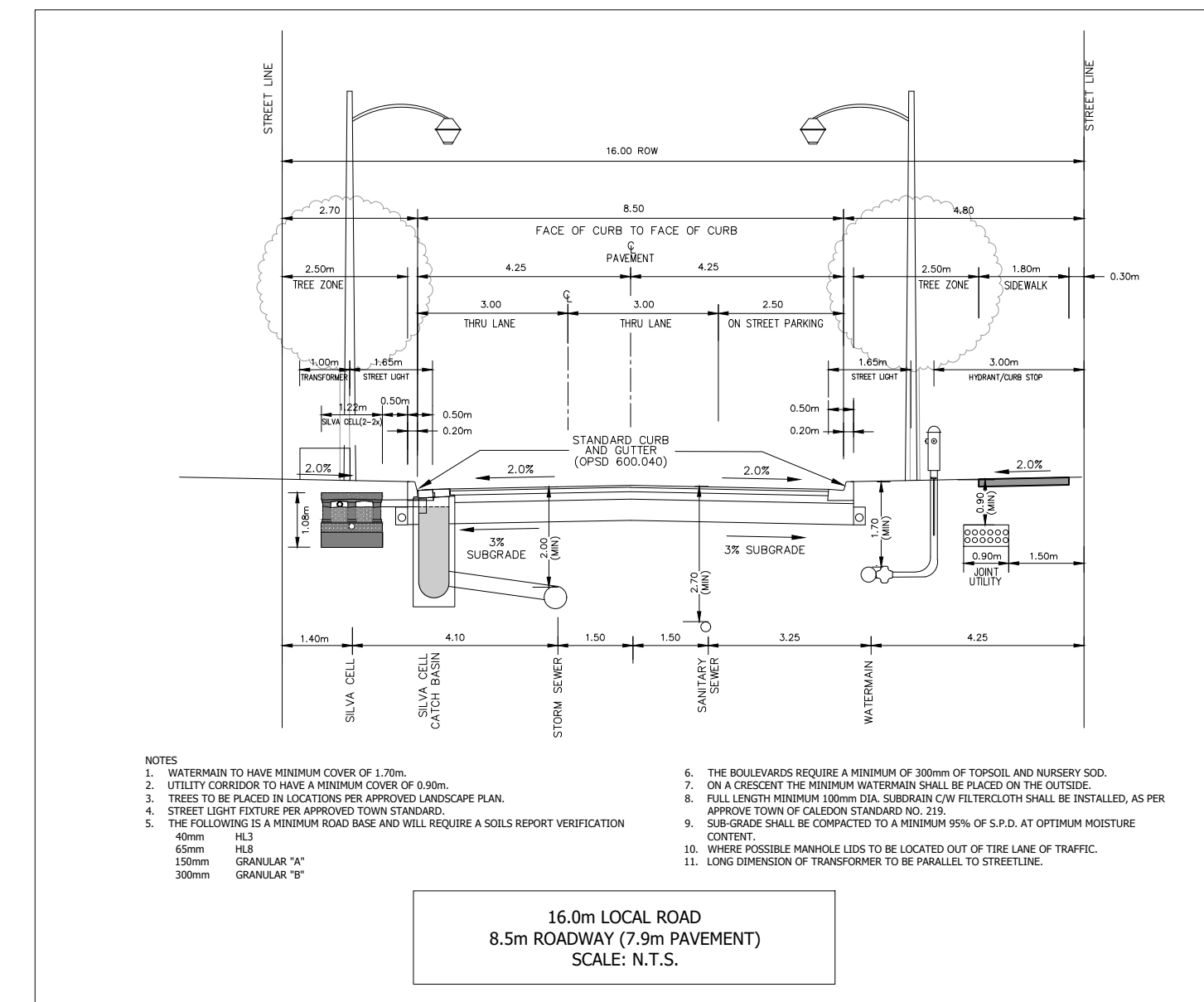
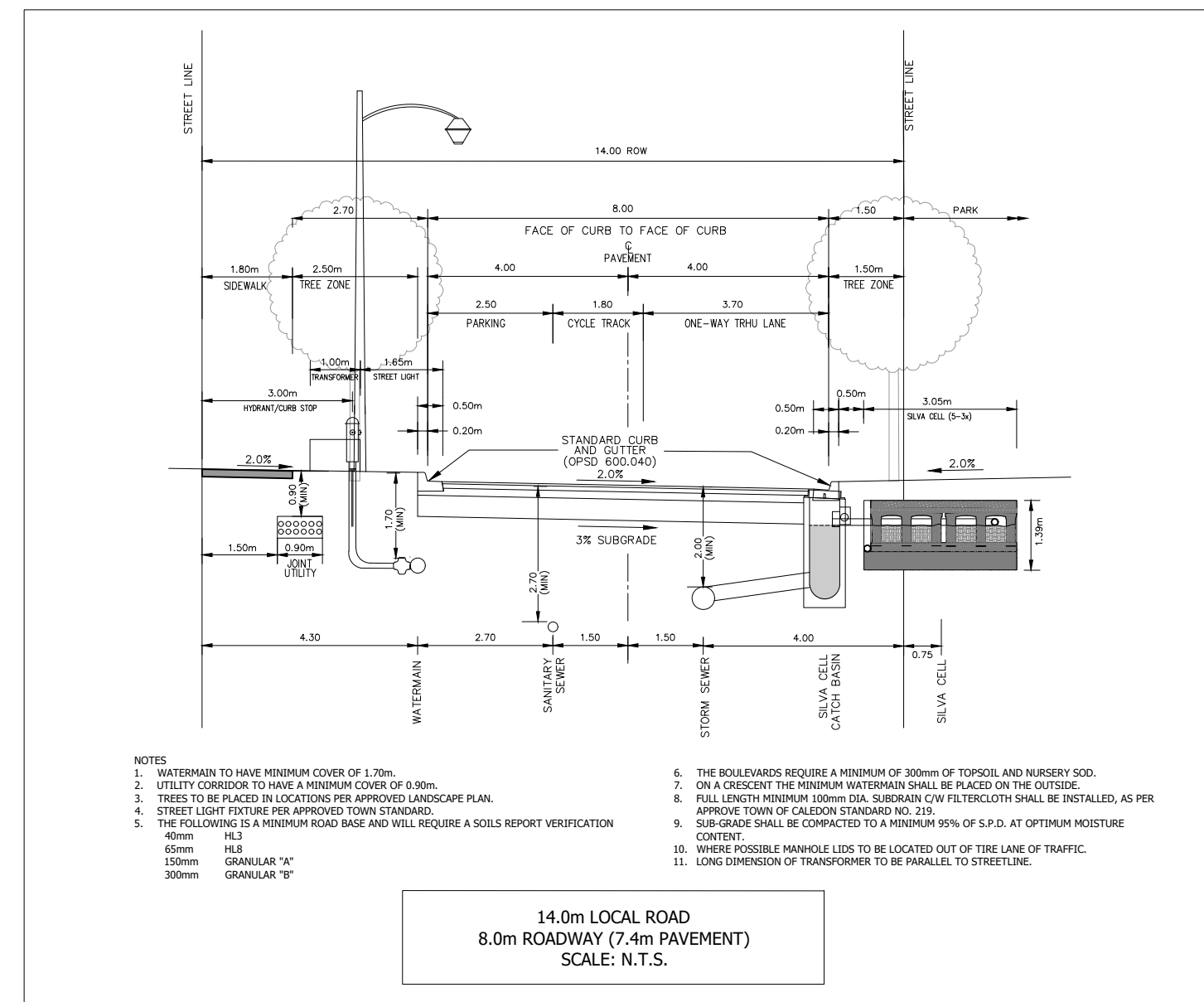
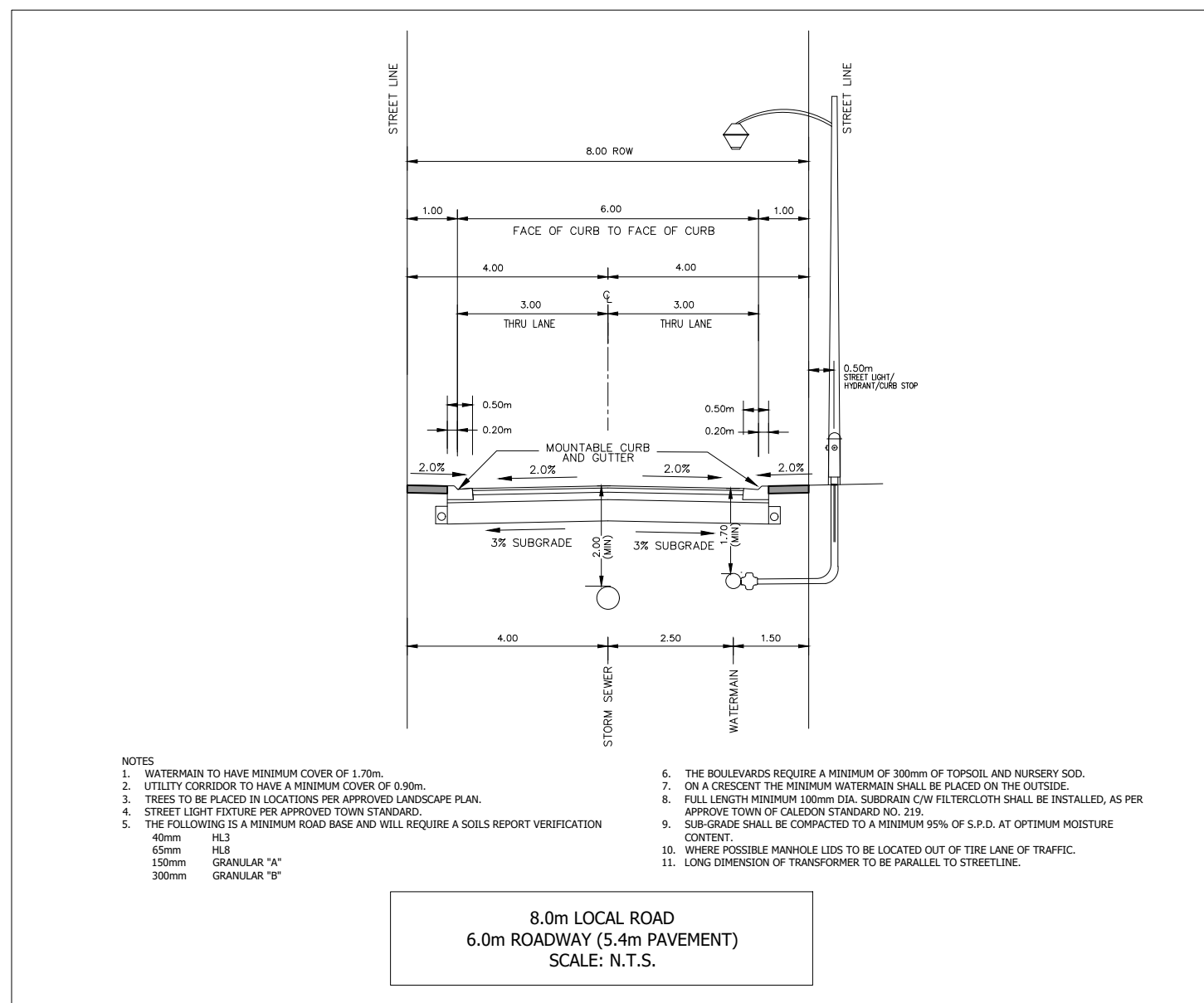
Figure 12: Caledon Station Transportation Network



LEGEND

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

** ALL ARTERIAL AND COLLECTOR ROADS (EXCEPT MAIN STREET) TO BE DESIGNED TO PROVIDE SEPARATED CYCLING FACILITIES, BUS SERVICE, AND TWO-SIDED SIDEWALKS.



NOTE: SILVA CELLS ONLY PROPOSED ALONG RIGHT OF WAYS WHERE SHOWN ON DRAWING 703. IF SILVA CELLS ARE DESIGNED AS FILTERS, AN UNDERDRAIN SHALL BE INSTALLED AND CONNECTED TO STORM SEWER SYSTEM.

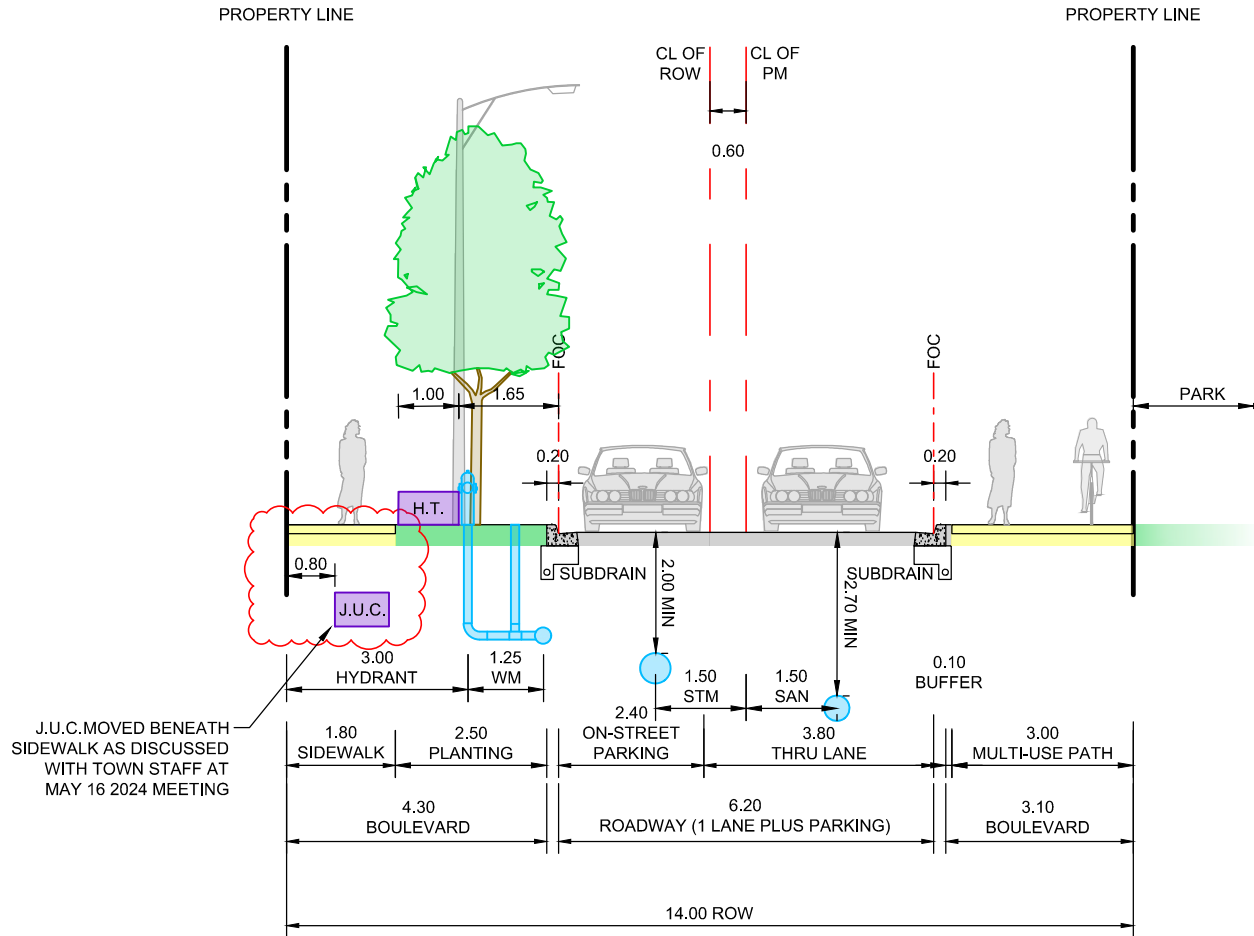


**TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL
CALEDON STATION SECONDARY PLAN**

TYPICAL ROW SECTIONS

SURVEYED BY:	J.D.B.	DATE:	2020	JOB NO.	15-458
DRAWN BY:	A.G./X.S.	CHECKED BY:	S.H.	DRAWING NO.	305
DESIGNED BY:	S.K./E.L.	CHECKED BY:	S.K./A.F.	SHEET NO.	
SCALE:	N.T.S.	DATE:	NOVEMBER 2023		


File name: J:\7694-U1\BA\1\Functional Road Plan\2024\U1_2024-05-08\BA-Macville - U1-03-5-June 12-2024-7694-U1-airphoto.dwg
 Date Plotted: June 12, 2024



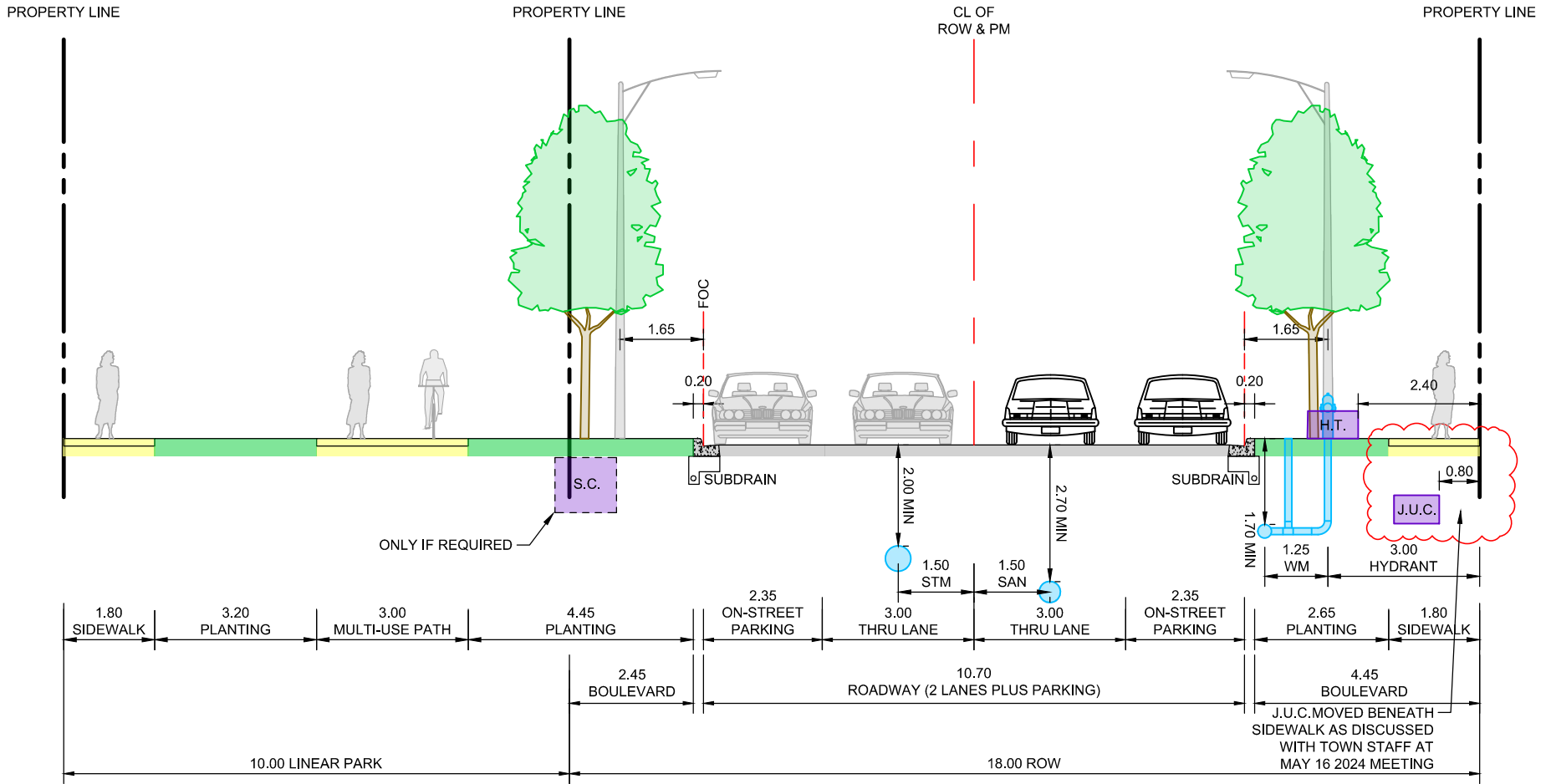
J.U.C. MOVED BENEATH
 SIDEWALK AS DISCUSSED
 WITH TOWN STAFF AT
 MAY 16 2024 MEETING

J.U.C. - JOINT USE UTILITY CORRIDOR
 H.T. - HYDRO TRANSFORMER
 S.C. - SOIL CELL

Scale


	<h2>CALEDON STATION</h2> <h3>Cross-Section</h3> <p>14m R.O.W. Local Road with 6.8m Roadway (6.2m Pavement) Width One-Way Road Adjacent to Park Block with MUP on Park Side</p>	Project: HUMBERKING
		Project No. 7694-01
		Date: May 09, 2024
		Revised: June 12, 2024
		Drawing No. XS-02

Date Plotted: May 31, 2024 File Name: J:\1694-U1\BA\Functional Road Main\24\U1_2024-U0-06\BA-wacv\16-1-U-09_0-MBY\ub-z4-7694-U1-airphoto.dwg

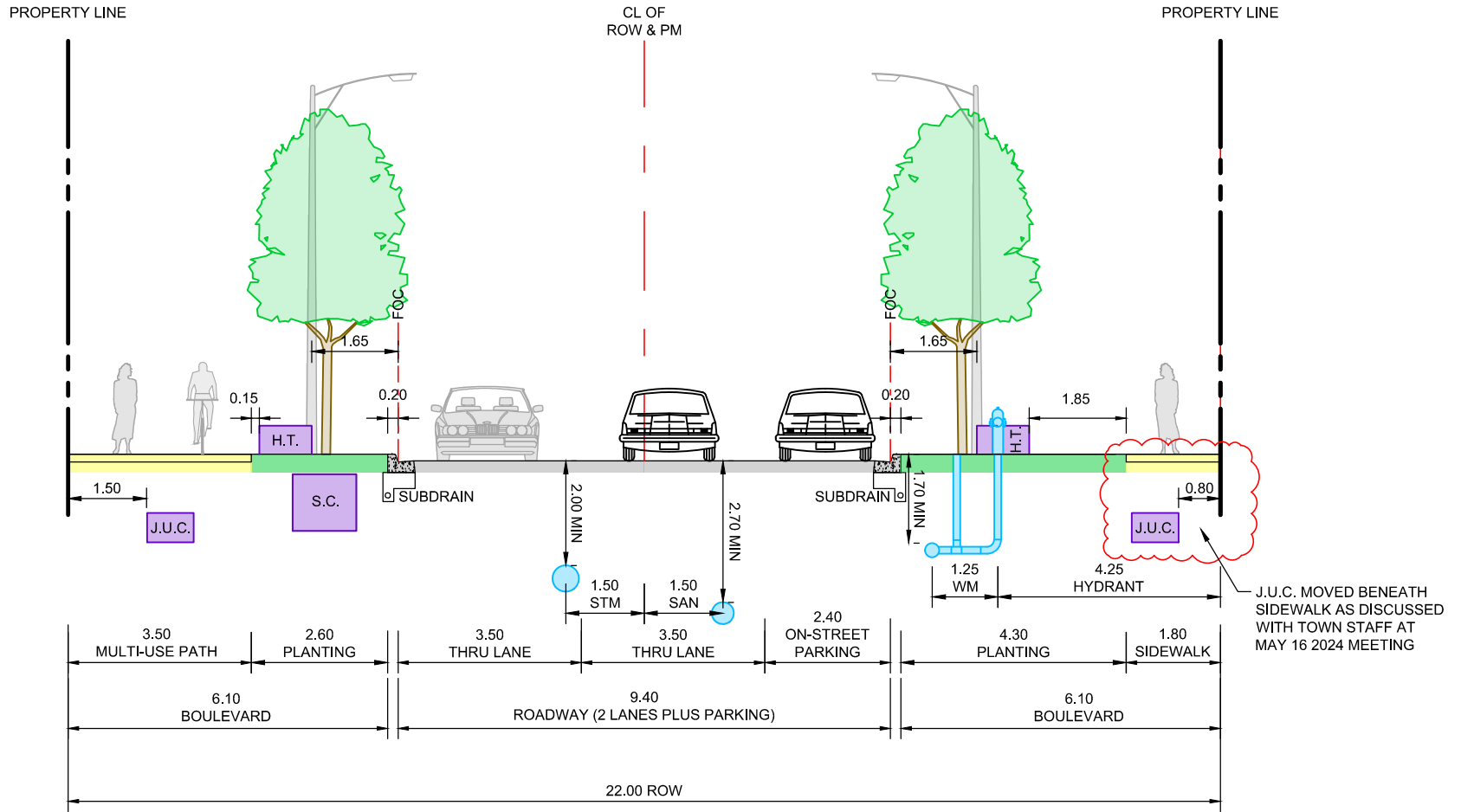


J.U.C. - JOINT USE UTILITY CORRIDOR
H.T. - HYDRO TRANSFORMER
S.C. - SOIL CELL

Scale


	<h2>CALEDON STATION</h2> <p>Cross-Section</p> <p>18m R.O.W. Local Road with 10.7m Roadway (10.1m Pavement) Width</p> <p>Section Adjacent to 10m Linear Park</p>	Project: HUMBERKING
		Project No. 7694-01
		Date: May 09, 2024
		Revised: May 29, 2024
		Drawing No. XS-03

File Name: J:\1694-U1\BA\1-Functional Road Main\24\U1_2024-U0-06\BA-wacv\16 - U-09-May\U0-24-7694-U1-airphoto.cwg
 Date Plotted: May 31, 2024



J.U.C. - JOINT USE UTILITY CORRIDOR
 H.T. - HYDRO TRANSFORMER
 S.C. - SOIL CELL

Scale

	<h2>CALEDON STATION</h2> <h3>Cross-Section</h3> <p>22m R.O.W. Collector Road with 9.4m Roadway (8.8m Pavement) Width Featuring 3.5m Multi-Use Path with Sidewalk</p>	Project: HUMBERKING
		Project No. 7694-01
		Date: May 09, 2024
		Revised: May 29, 2024
		Drawing No. XS-01

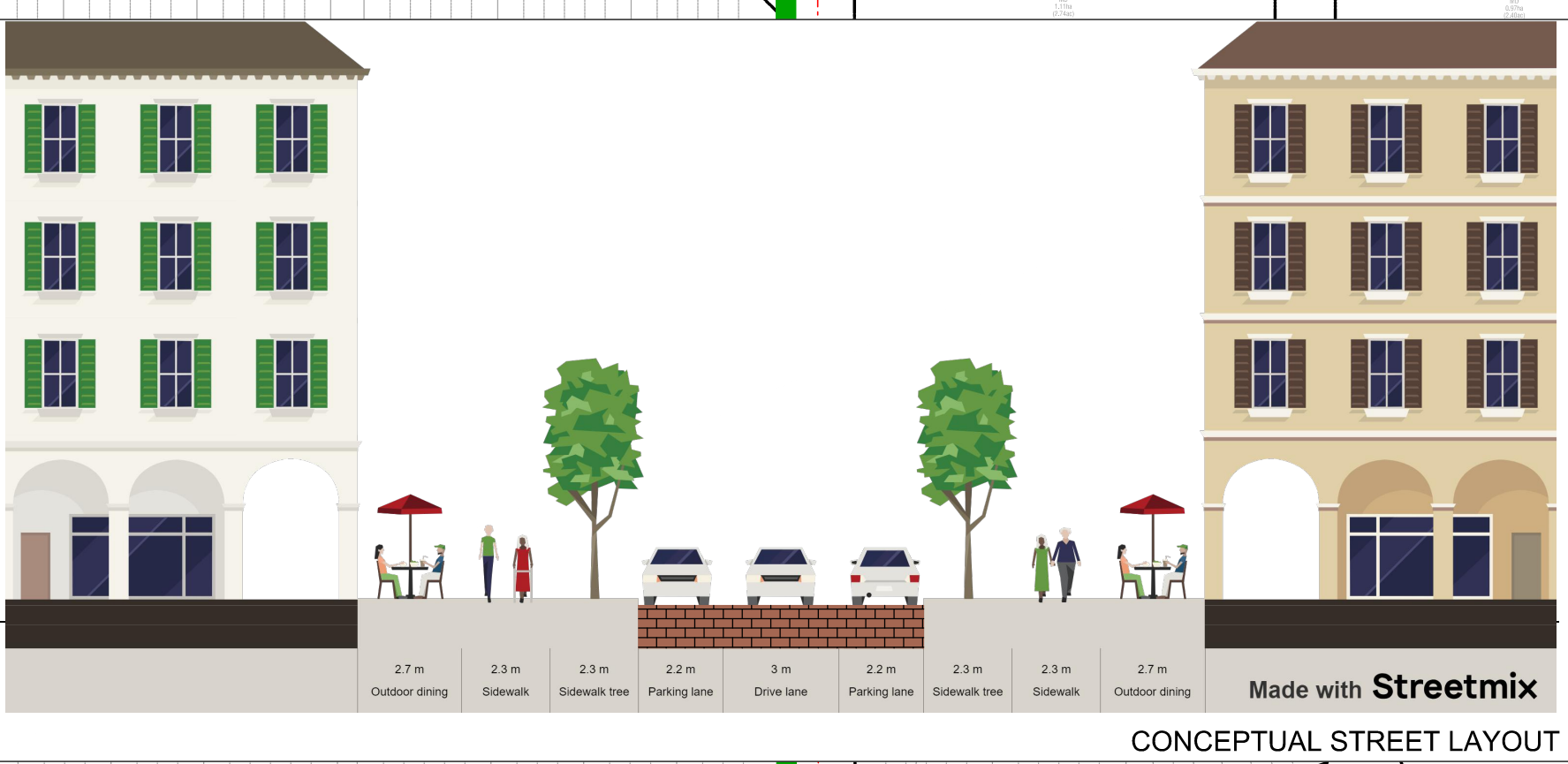
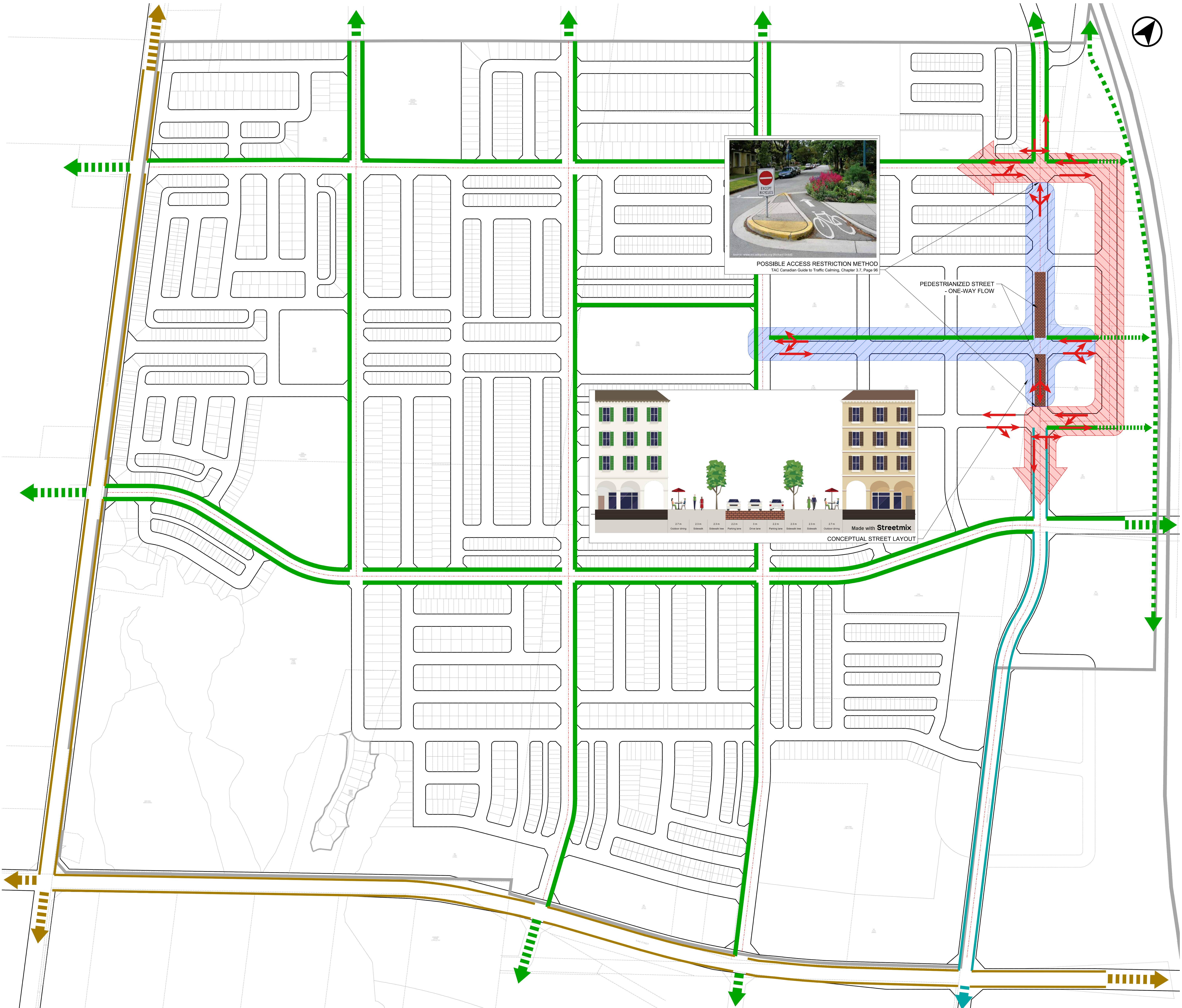
PRELIMINARY DRAFT
 FOR DISCUSSION PURPOSES ONLY

SUBJECT TO CONFIRMATION OF TOWN OF CALEDON ENGINEERING DESIGN STANDARDS

NOTE: DESIGN REFLECTS CALEDON ELBOW DESIGN STANDARD FOR A LOCAL ROAD WITH MODIFICATIONS TO ACCOMMODATE BACK-TO-BACK TAC HSU (DESIGN VEHICLE).

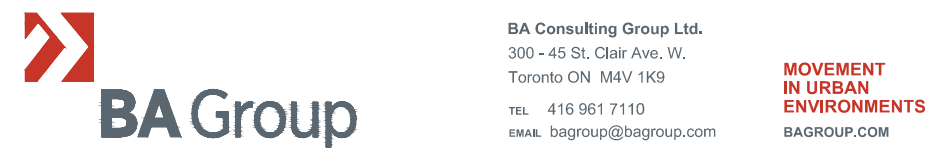
LEGEND

- PROPOSED M.U.P.
- PROPOSED TRAIL SYSTEM/CONNECTION
- PROPOSED CYCLE TRACK
- POTENTIAL REGIONAL CYCLING FACILITY
- POSSIBLE CYCLING EXTENSION INTO GROWTH AREAS
- MAIN STREET DISTRICT, UNIQUE DESIGN CHARACTERISTICS TO BE EXPLORED, PEDESTRIANS TO BE PRIORITIZED.
- TRANSIT PRIORITY AREA



PEDESTRIANIZED STREET
 ONE-WAY FLOW

01	07-08-24	WGC	ISSUED FOR RESUBMISSION
00	MM-DD-YR	INT	REVISION NOTE



MACVILLE DRAFT PLAN OF SUBDIVISION

PREFERRED AND PROPOSED CYCLING FACILITY ALIGNMENTS WITHIN PUBLIC R.O.W.s

ONE-WAY PED. ZONE

Date: November 27, 2023
 Project No.: 8096-02
 Scale: 1:1,000

FIG-02

Data Plotted: July 9, 2024 File Name: J:\7094\01\BA\Functional Road Plan\2024\01_2024-05-09\BA\MacB-45-00-04\July09-24\7094-01\mxd\CROSSSECTION-1 - Full Plot Street Option.dwg

4.2.3.3 Main Street

Main Street (Figure 24) will be a signature collector road designed to balance traffic and transportation needs with a vibrant and inviting environment. This street will feature wide sidewalks on both sides, constructed with high-quality materials like textured pavers or decorative concrete. The sidewalks will include curb ramps at intersections, pedestrian crosswalks with high-visibility markings, and clear signage for both pedestrians and cyclists. To enhance the pedestrian experience, the design will incorporate benches, public art installations, and decorative lighting. On-street parking will be provided on both sides of the street, with parallel parking spaces and clear signage for parking regulations. Parking bays may be landscaped with tree planters or decorative curbs to define the parking areas and enhance the streetscape. One travel lane in each direction will accommodate smooth traffic flow, with clearly visible lane markings and traffic signals to ensure safety for all road users.

In addition to these features, Main Street will be lined with a consistent row of street trees selected for their urban suitability and aesthetic appeal. These trees will provide shade, visual interest, and environmental benefits. The street will also include spill-out areas adjacent to at-grade commercial and retail spaces, offering spaces for outdoor seating, dining, and community gatherings. These areas will be designed with cafe tables and chairs, shade structures, and decorative planters to create a lively and welcoming atmosphere. By integrating these elements, Main Street will become a focal point of the community, offering a blend of functionality, beauty, and opportunities for social interaction..

Key features of Main Street will include:

- Sidewalks on both sides of the street.
- On-street parking on both sides of the street.
- One travel lane in each direction.
- A row of street trees on both sides of the street.
- Spill-out areas adjacent to the at-grade commercial and retail spaces for seating, dining, and other gathering activities.



Figure 24: 22.0m Major Collector Road ROW - Main Street

APPENDIX E:
Turning Movement Counts and Signal Timing Plans





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	
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	1448
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	1515
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08:30:00	3	79	21	0	0	103	40	1	53	0	0	94	16	34	2	0	0	52	10	0	1	0	0	11	260	1402
08:45:00	13	46	37	0	0	96	19	20	36	0	0	75	8	32	16	1	2	57	18	5	2	1	2	26	254	1226
BREAK																										
16:00:00	20	25	10	0	0	55	25	74	4	0	0	103	10	60	19	0	0	89	3	87	32	0	0	122	369	
16:15:00	11	20	10	0	0	41	25	84	4	0	0	113	13	71	16	0	0	100	5	96	30	0	0	131	385	
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	1599
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	1642
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	1676
17:30:00	9	25	4	0	0	38	20	112	2	0	0	134	2	68	17	0	0	87	4	92	35	0	0	131	390	1630
17:45:00	13	27	12	0	0	52	6	77	1	0	0	84	5	57	14	0	0	76	7	69	19	0	0	95	307	1528
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%	-	-	-	-	-



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

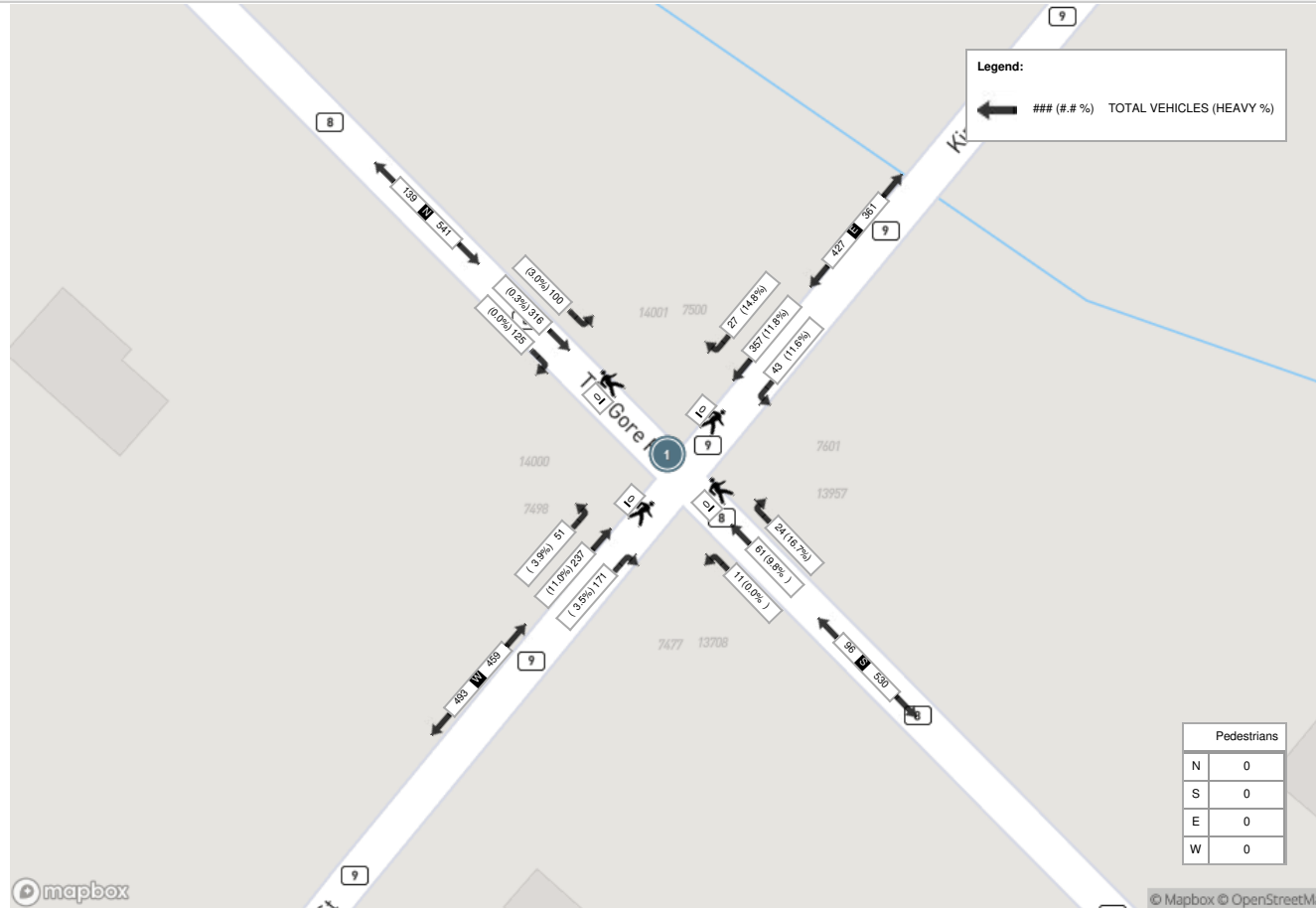
Start Time	N Approach GORE RD						E Approach KING ST						S Approach GORE RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00	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	-	-
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)





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)

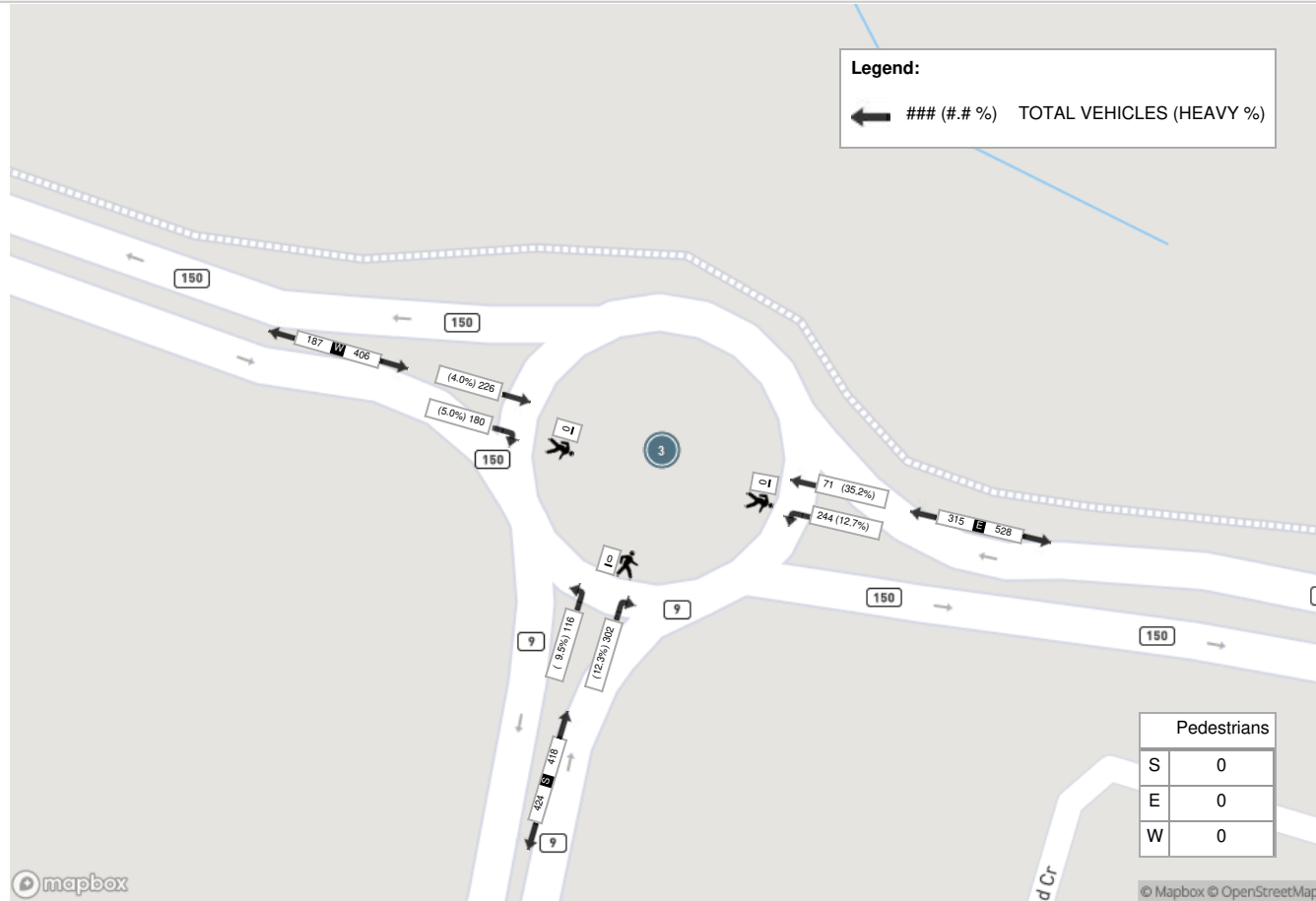
Start Time	E Approach EMIL KOLB PKWY					S Approach KING ST					W Approach EMIL KOLB PKWY				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
07:15:00	12	56	0	0	68	64	17	0	0	81	40	47	0	0	87	236
07:30:00	21	60	0	0	81	80	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%	-	-



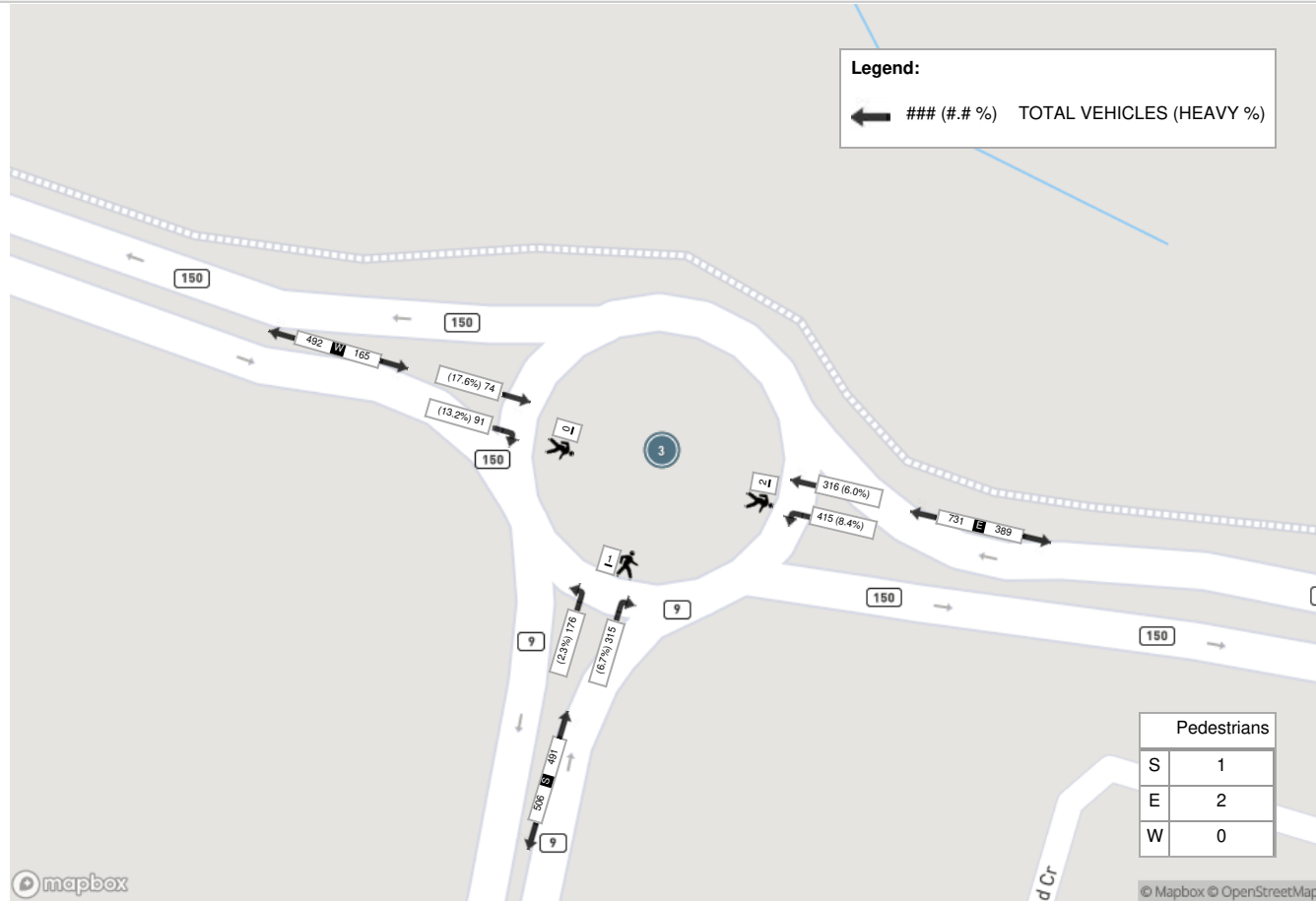
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)

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)





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%	5.6%	2.6%	38.2%	4%	0%	44.8%	4.1%	3.8%	4.3%	0%	12.2%	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%	-	-	-	-



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

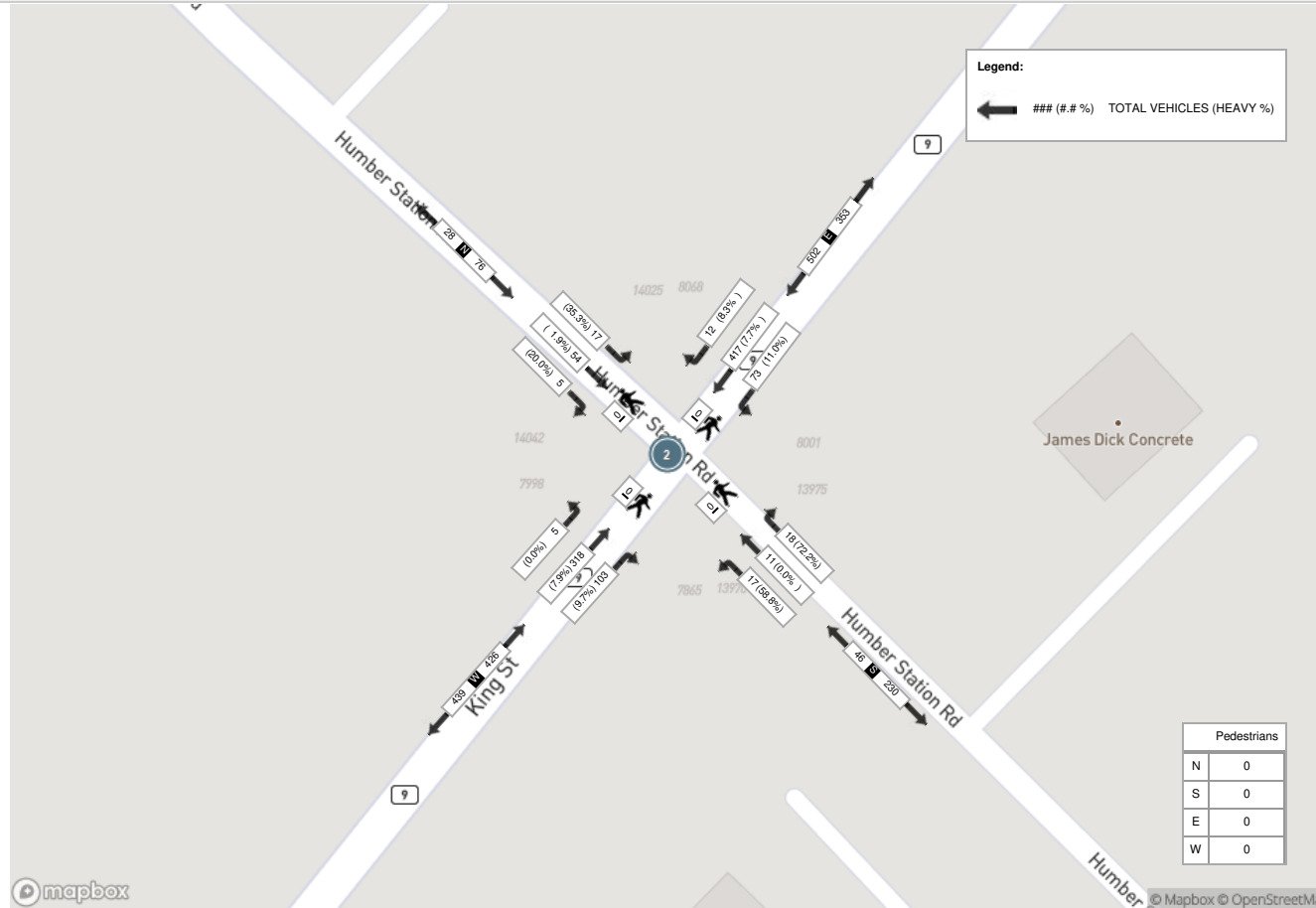
Start Time	N Approach HUMBER STATION RD						E Approach KING ST						S Approach HUMBER STATION RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	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%	7.2%	1.1%	39.7%	7%	0%	47.8%	47.8%	1.7%	1%	1.6%	0%	4.4%	9.8%	30.3%	0.5%	0%	40.6%	40.6%	-	
PHF	0.63	0.64	0.61	0	0.68	0.68	0.6	0.9	0.79	0	0.93	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	8	1	32	8	0	41	41	13	0	10	0	23	10	25	0	0	35	-		
Heavy %	20%	1.9%	35.3%	0%	10.5%	10.5%	8.3%	7.7%	11%	0%	8.2%	8.2%	72.2%	0%	58.8%	0%	50%	9.7%	7.9%	0%	0%	8.2%	-		
Lights	4	53	11	0	68	68	11	385	65	0	461	461	5	11	7	0	23	93	293	5	0	391	-		
Lights %	80%	98.1%	64.7%	0%	89.5%	89.5%	91.7%	92.3%	89%	0%	91.8%	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	7	1	13	5	0	19	19	4	0	6	0	10	1	6	0	0	7	-		
Single-Unit Trucks %	20%	1.9%	29.4%	0%	9.2%	9.2%	8.3%	3.1%	6.8%	0%	3.8%	3.8%	22.2%	0%	35.3%	0%	21.7%	1%	1.9%	0%	0%	1.6%	-		
Buses	0	0	1	0	1	1	0	8	0	0	8	8	2	0	0	0	2	1	13	0	0	14	-		
Buses %	0%	0%	5.9%	0%	1.3%	1.3%	0%	1.9%	0%	0%	1.6%	1.6%	11.1%	0%	0%	0%	4.3%	1%	4.1%	0%	0%	3.3%	-		
Articulated Trucks	0	0	0	0	0	0	0	11	3	0	14	14	7	0	4	0	11	8	6	0	0	14	-		
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	2.6%	4.1%	0%	2.8%	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	-		
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	1	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)



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	-	-	-	-	-	-	-	-

<p>System Control Yes</p> <p>Semi-Actuated Mode Yes</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>TIME (M-F)</th> <th>PEAK</th> <th>CYCLE LENGTH (s)</th> <th>OFFSET (s)</th> </tr> </thead> <tbody> <tr style="background-color: #e1f5fe;"> <td>06:00-09:00</td> <td>AM</td> <td>110</td> <td>36</td> </tr> <tr> <td>09:00-15:00</td> <td>OFF</td> <td>70</td> <td>36</td> </tr> <tr style="background-color: #e1f5fe;"> <td>15:00-19:00</td> <td>PM</td> <td>80</td> <td>57</td> </tr> </tbody> </table>	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
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		

<p>System Control Yes</p> <p>Semi-Actuated Mode Yes</p>				
	TIME (M-F)	PEAK	CYCLE LENGTH (s)	OFFSET (s)
	FREE	AM/OFF/PM	0	0

APPENDIX F:
Analysis Output Summary



Analysis Output Summary - Signalized Intersections - Phase 1

Movement	Existing Conditions					Phase 1 Future Background No Improvements (2031)					Phase 1 Future Background With Improvements (2031)				
	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	0.11 (0.37)	9.4 (12.0)	A (B)	3.6 (11)	10.8 (29)	0.13 (0.38)	17.6 (12.3)	B (B)	6.8 (13)	17.4 (25)	0.10 (0.29)	12.7 (10.0)	B (B)	5.6 (12)	15.2 (25)
EBT	0.43 (0.39)	12.4 (10.7)	B (B)	29.5 (28)	61.5 (57)	0.53 (0.42)	23.9 (15.2)	C (B)	67.4 (46)	116.0 (93)	0.26 (0.37)	14.2 (14.0)	B (B)	31.6 (41)	59.1 (90)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.02)	12.8 (10.3)	B (B)	0.0 (0)	12.3 (0)
WBL	0.10 (0.03)	9.4 (7.8)	A (A)	3.0 (1)	9.7 (4)	0.10 (0.03)	12.9 (12.8)	B (B)	4.2 (1)	11.4 (4)	0.07 (0.03)	8.2 (12.2)	A (B)	3.3 (1)	9.4 (4)
WBT	0.42 (0.52)	12.3 (12.6)	B (B)	32.3 (40)	63.9 (82)	0.42 (0.62)	16.1 (23.4)	B (C)	55.0 (93)	95.1 (147)	0.35 (0.47)	10.8 (19.3)	B (B)	40.5 (67)	73.4 (118)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.09)	7.9 (14.1)	A (B)	0.0 (4)	3.6 (16)
NBL	0.08 (0.17)	20.2 (21.4)	C (C)	1.2 (7)	4.9 (15)	0.15 (0.33)	29.7 (37.3)	C (D)	1.9 (11)	6.4 (23)	0.11 (0.21)	35.3 (36.3)	D (D)	2.1 (11)	6.7 (21)
NBT	0.14 (0.67)	20.5 (28.2)	C (C)	6.9 (46)	17.0 (73)	0.15 (0.85)	28.9 (55.3)	C (E)	13.6 (94)	23.4 (124)	0.16 (0.81)	35.4 (52.9)	D (D)	13.9 (88)	23.6 (113)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.02)	34.0 (34.2)	C (C)	0.0 (0)	0.0 (0)
SBL	0.26 (0.20)	21.5 (21.8)	C (C)	11.9 (4)	23.8 (12)	0.28 (0.46)	30.6 (41.5)	C (D)	18.1 (8)	29.1 (19)	0.35 (0.41)	37.9 (40.8)	D (D)	20.3 (8)	33.1 (18)
SBT	0.78 (0.32)	32.2 (22.4)	C (C)	59.2 (17)	92.5 (33)	0.85 (0.40)	49.0 (37.4)	D (D)	110.7 (36)	137.1 (54)	0.79 (0.30)	50.5 (37.2)	D (D)	86.8 (27)	110.1 (41)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.04)	34.7 (34.5)	C (C)	0.0 (0)	13.6 (8)
OVERALL	0.55 (0.57)	19.1 (16.8)	B (B)			0.65 (0.67)	29.8 (30.0)	C (C)			0.49 (0.55)	25.6 (26.9)	C (C)		
Humber Station Rd & King St															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.02)	11.2 (10.5)	B (B)	0.3 (1)	2.1 (3)
EBT	0.33 (0.49)	5.7 (10.8)	A (B)	25.1 (32)	38.2 (60)	0.39 (0.45)	7.1 (10.2)	A (B)	28.7 (56)	62.4 (102)	0.37 (0.44)	15.6 (15.4)	B (B)	30.7 (52)	76.4 (119)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.02)	12.4 (10.6)	B (B)	0.0 (0)	7.5 (0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.05)	8.4 (9.5)	A (A)	3.1 (1)	13.5 (5)
WBT	0.44 (0.53)	6.8 (11.5)	A (B)	36.3 (33)	54.2 (64)	0.50 (0.46)	8.0 (10.3)	A (B)	39.5 (58)	85.0 (105)	0.47 (0.48)	14.7 (15.3)	B (B)	30.5 (56)	109.2 (128)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.25)	31.4 (36.1)	C (D)	2.9 (14)	6.7 (23)
NBT	0.21 (0.50)	41.4 (21.5)	D (C)	5.5 (18)	16.9 (36)	0.17 (0.83)	34.8 (65.7)	C (E)	5.2 (46)	14.4 (69)	0.07 (0.38)	33.7 (43.2)	C (D)	2.1 (22)	9.3 (41)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.08)	31.6 (43.4)	C (D)	2.9 (3)	6.6 (7)
SBT	0.34 (0.09)	42.4 (18.5)	D (B)	14.5 (3)	29.4 (10)	0.29 (0.12)	35.9 (37.0)	D (D)	14.4 (6)	25.6 (15)	0.18 (0.09)	34.8 (46.0)	C (D)	10.8 (4)	20.6 (12)
OVERALL	0.42 (0.52)	10.4 (13.2)	B (B)			0.50 (0.60)	10.8 (20.2)	B (C)			0.38 (0.45)	16.5 (20.3)	B (C)		
King St & Street JJ															
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.29 (0.32)	4.9 (3.7)	A (A)	12.6 (0)	50.1 (60)	0.28 (0.31)	4.8 (3.6)	A (A)	12.6 (0)	49.7 (60)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.34 (0.39)	5.3 (4.2)	A (A)	15.7 (0)	61.5 (79)	0.34 (0.38)	5.2 (4.1)	A (A)	15.6 (0)	60.6 (78)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.29 (0.37)	5.1 (3.9)	A (A)	- (-)	- (-)	0.28 (0.36)	5.0 (3.9)	A (A)		

Analysis Output Summary - Signalized Intersections - Phase 1

Movement	Phase 1 Future Total No Improvements (2031)					Phase 1 Future Total With Improvements (2031)				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St										
EBL	0.16 (0.67)	21.2 (30.2)	C (C)	7.6 (19)	18.0 (#35.6)	0.12 (0.31)	16.0 (11.5)	B (B)	6.2 (12)	17.5 (26)
EBT	0.62 (0.68)	29.9 (33.1)	C (C)	81.4 (98)	127.8 (137)	0.32 (0.49)	18.1 (19.6)	B (B)	38.7 (70)	74.3 (125)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.02)	15.8 (13.3)	B (B)	0.0 (0)	14.0 (0)
WBL	0.52 (0.42)	15.7 (20.9)	B (C)	25.2 (16)	42.2 (27)	0.36 (0.27)	9.5 (11.3)	A (B)	19.8 (11)	38.5 (23)
WBT	0.50 (0.86)	16.8 (45.1)	B (D)	71.5 (135)	109.4 (#200.9)	0.41 (0.52)	11.4 (20.4)	B (C)	50.8 (76)	89.5 (135)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.11)	7.9 (14.4)	A (B)	1.0 (5)	6.5 (18)
NBL	0.17 (0.21)	31.4 (25.6)	C (C)	1.9 (9)	7.2 (20)	0.11 (0.21)	35.6 (36.2)	D (D)	2.1 (11)	6.8 (21)
NBT	0.25 (0.95)	31.1 (61.3)	C (E)	18.1 (134)	34.3 (#209.8)	0.16 (0.81)	35.7 (52.2)	D (D)	13.9 (88)	23.8 (112)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.23)	34.8 (36.4)	C (D)	0.0 (6)	11.5 (25)
SBL	0.34 (0.63)	32.4 (44.2)	C (D)	19.6 (11)	34.2 (#34.0)	0.38 (0.60)	38.5 (49.6)	D (D)	21.7 (12)	35.3 (27)
SBT	0.88 (0.27)	54.7 (26.2)	D (C)	111.9 (28)	150.6 (47)	0.80 (0.30)	51.6 (37.0)	D (D)	87.1 (27)	111.2 (41)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.11 (0.04)	35.2 (34.3)	D (C)	1.7 (0)	15.4 (8)
OVERALL	0.71 (0.89)	31.2 (42.3)	C (D)			0.54 (0.58)	24.9 (28.1)	C (C)		
Humber Station Rd & King St										
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.50)	14.8 (19.6)	B (B)	3.3 (12)	8.6 (20)
EBT	0.83 (1.26)	25.7 (157.9)	C (F)	116.7 (~241.4)	#198.9 (#318.0)	0.57 (0.56)	23.4 (20.2)	C (C)	67.8 (79)	105.0 (133)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.24 (0.07)	18.2 (13.2)	B (B)	10.9 (0)	28.4 (8)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.21 (0.06)	13.8 (14.6)	B (B)	5.9 (2)	13.4 (5)
WBT	0.74 (0.84)	21.1 (31.3)	C (C)	94.7 (150)	#148.9 (#219.4)	0.67 (0.86)	25.7 (37.5)	C (D)	83.6 (156)	134.5 (#236.3)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.20 (0.50)	29.6 (35.7)	C (D)	5.5 (27)	12.2 (45)
NBT	0.30 (0.92)	25.9 (60.0)	C (E)	16.0 (103)	30.3 (#169.2)	0.22 (0.81)	33.5 (57.6)	C (E)	11.7 (69)	23.0 (#114.7)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.35 (0.38)	25.4 (38.7)	C (D)	18.5 (12)	30.8 (24)
SBT	0.84 (0.50)	44.2 (31.1)	D (C)	68.4 (40)	#113.5 (66)	0.61 (0.44)	36.5 (44.5)	D (D)	46.5 (27)	71.4 (49)
OVERALL	0.92 (1.21)	28.2 (81.8)	C (F)			0.62 (0.82)	25.5 (34.0)	C (C)		
King St & Street JJ										
EBL	0.15 (0.42)	7.4 (9.7)	A (A)	3.6 (9)	10.9 (20)	0.13 (0.40)	5.6 (8.8)	A (A)	2.9 (8)	9.7 (20)
EBT	0.36 (0.45)	8.5 (7.5)	A (A)	33.1 (43)	61.0 (81)	0.33 (0.43)	6.5 (6.8)	A (A)	27.2 (37)	55.0 (80)
WBT	0.55 (0.64)	10.8 (17.0)	B (B)	59.2 (86)	107.1 (150)	0.50 (0.61)	8.3 (15.5)	A (B)	48.6 (76)	95.9 (151)
WBR	0.03 (0.09)	6.1 (9.7)	A (A)	0.7 (4)	4.5 (13)	0.02 (0.09)	4.7 (9.0)	A (A)	0.6 (4)	4.1 (14)
SBL	0.77 (0.66)	41.3 (43.3)	D (D)	49.1 (37)	72.2 (57)	0.66 (0.52)	39.0 (39.7)	D (D)	37.8 (30)	55.0 (44)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.04)	30.4 (35.2)	C (D)	0.0 (0)	11.3 (10)
OVERALL	0.60 (0.63)	16.4 (15.9)	B (B)			0.53 (0.58)	13.6 (14.4)	B (B)		

Analysis Output Summary -Signalized Intersections - Phase 2

Movement	Existing Conditions					Phase 2 Future Background No Improvements (2031)					Phase 2 Future Background With Improvements (2031)				
	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	0.11 (0.37)	9.4 (12.0)	A (B)	3.6 (11)	10.8 (29)	0.13 (0.39)	17.6 (12.7)	B (B)	6.9 (13)	17.3 (25)	0.10 (0.29)	12.9 (10.1)	B (B)	5.7 (12)	15.4 (25)
EBT	0.43 (0.39)	12.4 (10.7)	B (B)	29.5 (28)	61.5 (57)	0.54 (0.43)	24.1 (16.3)	C (B)	69.4 (60)	117.9 (94)	0.27 (0.38)	14.5 (14.9)	B (B)	32.9 (53)	61.2 (92)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.01)	13.0 (10.9)	B (B)	0.0 (0)	12.4 (0)
WBL	0.10 (0.03)	9.4 (7.8)	A (A)	3.0 (1)	9.7 (4)	0.12 (0.07)	13.1 (12.6)	B (B)	4.8 (3)	12.5 (8)	0.08 (0.06)	8.3 (11.7)	A (B)	3.8 (3)	10.4 (8)
WBT	0.42 (0.52)	12.3 (12.6)	B (B)	32.3 (40)	63.9 (82)	0.42 (0.63)	16.2 (23.9)	B (C)	55.5 (95)	95.6 (148)	0.35 (0.48)	10.9 (19.4)	B (B)	41.2 (68)	74.0 (120)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.09)	8.0 (14.1)	A (B)	0.0 (4)	3.6 (16)
NBL	0.08 (0.17)	20.2 (21.4)	C (C)	1.2 (7)	4.9 (15)	0.12 (0.33)	29.1 (37.0)	C (D)	1.9 (11)	6.2 (23)	0.11 (0.21)	35.0 (36.4)	D (D)	2.1 (11)	6.7 (21)
NBT	0.14 (0.67)	20.5 (28.2)	C (C)	6.9 (46)	17.0 (73)	0.19 (0.85)	29.4 (55.8)	C (E)	15.6 (95)	26.6 (126)	0.17 (0.81)	35.3 (52.9)	D (D)	14.4 (88)	24.4 (113)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.03 (0.02)	33.9 (34.3)	C (C)	0.0 (0)	4.2 (2)
SBL	0.26 (0.20)	21.5 (21.8)	C (C)	11.9 (4)	23.8 (12)	0.29 (0.46)	30.7 (41.2)	C (D)	18.1 (8)	29.2 (19)	0.35 (0.40)	37.6 (40.7)	D (D)	20.2 (8)	32.9 (18)
SBT	0.78 (0.32)	32.2 (22.4)	C (C)	59.2 (17)	92.5 (33)	0.85 (0.40)	49.3 (37.1)	D (D)	110.9 (36)	137.3 (54)	0.79 (0.30)	50.6 (37.2)	D (D)	86.8 (28)	110.2 (42)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.04)	34.5 (34.5)	C (C)	0.0 (0)	13.5 (8)
OVERALL	0.55 (0.57)	19.1 (16.8)	B (B)			0.66 (0.68)	29.9 (30.3)	C (C)			0.49 (0.56)	25.7 (27.0)	C (C)		
Humber Station Rd & King St															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.03)	10.3 (11.0)	B (B)	1.3 (1)	7.2 (5)
EBT	0.33 (0.49)	5.7 (10.8)	A (B)	25.1 (32)	38.2 (60)	0.44 (0.47)	7.5 (11.3)	A (B)	31.8 (61)	69.8 (110)	0.37 (0.46)	15.5 (17.0)	B (B)	30.7 (52)	76.0 (119)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.02)	12.3 (11.6)	B (B)	0.0 (0)	7.5 (0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.05)	9.2 (11.0)	A (B)	3.1 (1)	13.5 (5)
WBT	0.44 (0.53)	6.8 (11.5)	A (B)	36.3 (33)	54.2 (64)	0.53 (0.48)	8.4 (11.3)	A (B)	42.7 (62)	92.2 (112)	0.48 (0.46)	16.3 (16.9)	B (B)	42.9 (50)	107.4 (115)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.03 (0.04)	11.2 (11.7)	B (B)	0.0 (0)	0.0 (0)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.24)	31.5 (34.2)	C (C)	2.9 (14)	6.7 (23)
NBT	0.21 (0.50)	41.4 (21.5)	D (C)	5.5 (18)	16.9 (36)	0.39 (0.87)	36.9 (68.9)	D (E)	19.1 (51)	32.5 (75)	0.29 (0.41)	35.7 (41.7)	D (D)	15.5 (27)	27.5 (48)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.06)	31.6 (39.9)	C (D)	2.9 (3)	6.7 (7)
SBT	0.34 (0.09)	42.4 (18.5)	D (B)	14.5 (3)	29.4 (10)	0.37 (0.33)	36.7 (38.0)	D (D)	18.7 (23)	31.7 (37)	0.25 (0.36)	35.4 (45.1)	D (D)	15.0 (23)	26.6 (39)
OVERALL	0.42 (0.52)	10.4 (13.2)	B (B)			0.55 (0.63)	12.9 (23.1)	B (C)			0.41 (0.43)	18.2 (22.7)	B (C)		
King St & Street JJ															
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.31 (0.32)	5.0 (3.7)	A (A)	13.8 (0)	54.2 (62)	0.30 (0.32)	5.0 (3.7)	A (A)	13.7 (0)	53.7 (61)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.35 (0.41)	5.3 (4.3)	A (A)	16.1 (0)	62.6 (85)	0.34 (0.40)	5.2 (4.2)	A (A)	16.0 (0)	62.1 (84)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.29 (0.38)	5.2 (4.0)	A (A)			0.30 (0.37)	5.1 (4.0)	A (A)		
The Gore Rd & Street A															
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.01)	36.6 (36.7)	D (D)	0.0 (0)	0.0 (0)	0.00 (0.01)	36.6 (36.7)	D (D)	0.0 (0)	0.0 (0)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.11 (0.47)	2.8 (4.8)	A (A)	0.0 (0)	19.4 (96)	0.11 (0.46)	2.7 (4.6)	A (A)	0.0 (0)	19.5 (81)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.01)	2.5 (2.4)	A (A)	0.0 (0)	3.1 (1)	0.02 (0.01)	2.5 (2.4)	A (A)	0.0 (0)	3.1 (1)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.45 (0.17)	4.7 (3.0)	A (A)	0.0 (0)	89.1 (29)	0.44 (0.17)	4.6 (3.0)	A (A)	0.0 (0)	87.8 (28)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.40 (0.42)	4.4 (4.8)	A (A)			0.39 (0.41)	4.3 (4.6)	A (A)		
Humber Station Rd & Street E															
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.38 (0.47)	27.8 (22.9)	C (C)	1.9 (6)	6.7 (15)	0.04 (0.15)	9.9 (10.8)	A (B)	1.3 (4)	4.7 (11)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.10)	1.9 (3.5)	A (A)	0.0 (4)	3.1 (11)	0.04 (0.17)	9.9 (10.8)	A (B)	1.6 (7)	5.5 (16)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.10 (0.03)	2.2 (3.2)	A (A)	0.0 (0)	4.9 (2)	0.11 (0.03)	10.4 (9.8)	B (A)	0.0 (0)	8.7 (3)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.03)	2.0 (3.3)	A (A)	0.0 (1)	6.4 (5)	0.11 (0.06)	10.3 (10.0)	B (A)	4.7 (2)	11.3 (7)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.11 (0.16)	4.1 (8.6)	A (A)			0.08 (0.16)	10.3 (10.5)	B (B)		
Humber Station Rd & Street Y															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.01)	36.1 (36.6)	D (D)	0.8 (0)	3.6 (2)	0.03 (0.01)	36.1 (36.6)	D (D)	0.8 (0)	3.6 (2)
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.00)	35.8 (36.5)	D (D)	0.0 (0)	0.0 (0)	0.00 (0.00)	35.9 (36.5)	D (D)	0.0 (0)	0.0 (0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.46 (0.12)	40.2 (37.4)	D (D)	10.6 (3)	20.7 (8)	0.46 (0.12)	40.2 (37.4)	D (D)	10.6 (3)	20.6 (7)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.01)	36.1 (36.6)	D (D)	0.0 (0)	0.0 (0)	0.04 (0.01)	36.2 (36.6)	D (D)	0.0 (0)	0.0 (0)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.01)	2.6 (2.5)	A (A)	0.0 (0)	0.6 (2)	0.00 (0.01)	2.6 (2.5)	A (A)	0.0 (0)	0.6 (2)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.10 (0.15)	3.0 (3.0)	A (A)	4.8 (5)	14.2 (18)	0.10 (0.15)	2.9 (3.0)	A (A)	4.7 (5)	14.0 (18)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.09)	2.7 (2.8)	A (A)	0.8 (2)	3.6 (9)	0.02 (0.09)	2.7 (2.8)	A (A)	0.7 (2)	3.6 (9)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.03)	2.8 (2.5)	A (A)	3.0 (1)	9.5 (6)	0.06 (0.03)	2.8 (2.5)	A (A)	3.0 (1)	9.5 (6)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.15 (0.15)	15.3 (5.8)	B (A)			0.14 (0.15)	15.3 (5.8)	B (A)		

Analysis Output Summary -Signalized Intersections - Phase 2

Movement	Phase 2 Future Total No Improvements (2031)					Phase 2 Future Total With Improvements (2031)				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St										
EBL	0.21 (1.20)	30.2 (165.4)	C (F)	8.9 (~40.8)	19.7 (#88.9)	0.15 (0.60)	22.7 (24.2)	C (C)	7.7 (24)	20.7 (32)
EBT	0.87 (0.94)	53.8 (63.6)	D (E)	107.5 (129)	#169.6 (#200.0)	0.43 (0.75)	26.5 (38.6)	C (D)	54.9 (117)	98.1 (144)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.16 (0.01)	22.4 (22.6)	C (C)	4.5 (0)	23.4 (0)
WBL	0.94 (1.02)	53.7 (92.0)	D (F)	54.3 (37)	#111.8 (#91.0)	0.62 (0.70)	14.9 (26.2)	B (C)	41.9 (31)	70.1 (40)
WBT	0.58 (1.03)	21.4 (82.1)	C (F)	86.6 (~167.4)	121.5 (#240.9)	0.49 (0.72)	14.8 (35.4)	B (D)	68.8 (117)	110.8 (139)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.11)	9.5 (21.8)	A (C)	0.0 (5)	3.7 (14)
NBL	0.21 (0.21)	29.0 (21.9)	C (C)	1.9 (9)	7.7 (19)	0.13 (0.16)	32.6 (26.2)	C (C)	2.0 (9)	6.8 (21)
NBT	0.40 (1.15)	29.7 (118.9)	C (F)	39.1 (~241.5)	63.2 (#319.7)	0.28 (0.87)	33.7 (47.7)	C (D)	26.3 (130)	40.5 (#220.6)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.33)	31.6 (28.3)	C (C)	0.0 (19)	12.5 (47)
SBL	0.33 (0.64)	29.0 (48.7)	C (D)	17.8 (7)	33.6 (#28.3)	0.33 (0.48)	34.6 (34.3)	C (C)	19.1 (7)	32.5 (#25.4)
SBT	0.96 (0.34)	63.8 (23.2)	E (C)	143.5 (40)	#219.4 (61)	0.85 (0.28)	52.3 (27.6)	D (C)	104.5 (32)	135.0 (56)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.06)	32.7 (25.2)	C (C)	7.5 (0)	22.9 (6)
OVERALL	0.97 (1.16)	44.9 (88.7)	D (F)			0.71 (0.80)	27.9 (34.8)	C (C)		
Humber Station Rd & King St										
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.28 (0.57)	18.9 (24.3)	B (C)	8.5 (19)	16.6 (31)
EBT	1.25 (1.85)	152.4 (424.2)	F (F)	~217.0 (~332.2)	#292.3 (#411.5)	0.66 (0.68)	30.7 (31.1)	C (C)	78.9 (97)	114.7 (157)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.45 (0.17)	26.3 (20.8)	C (C)	26.8 (5)	56.2 (21)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.26 (0.09)	18.9 (23.2)	B (C)	7.9 (2)	15.7 (6)
WBT	0.95 (0.95)	48.2 (52.1)	D (D)	117.3 (170)	#195.6 (#255.8)	0.73 (0.83)	34.0 (44.7)	C (D)	89.6 (127)	119.1 (#106.4)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.13)	20.4 (24.9)	C (C)	0.0 (0)	3.7 (13)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.40 (0.82)	26.0 (44.8)	C (D)	7.6 (39)	15.9 (#73.2)
NBT	0.59 (1.83)	26.6 (419.0)	C (F)	41.8 (~279.6)	69.7 (#355.7)	0.40 (0.92)	29.5 (60.0)	C (E)	30.5 (122)	50.5 (#190.5)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.32 (0.43)	21.9 (34.8)	C (C)	14.2 (10)	26.0 (19)
SBT	1.13 (0.84)	109.8 (42.5)	F (D)	~141.5 (90)	#209.5 (#151.9)	0.93 (0.86)	58.5 (59.4)	E (E)	89.9 (82)	119.2 (#122.5)
OVERALL	1.32 (1.99)	99.6 (265.2)	F (F)			0.75 (0.85)	34.7 (42.6)	C (D)		
King St & Street JJ										
EBL	0.35 (0.69)	15.3 (22.0)	B (C)	6.5 (15)	17.4 (#37.6)	0.26 (0.58)	12.3 (16.2)	B (B)	4.2 (11)	9.4 (29)
EBT	0.44 (0.50)	12.7 (9.9)	B (A)	46.6 (61)	69.9 (87)	0.38 (0.46)	8.8 (8.1)	A (A)	38.1 (48)	61.0 (86)
WBT	0.73 (0.80)	19.0 (25.8)	B (C)	98.9 (136)	146.5 (#192.1)	0.76 (0.77)	22.0 (23.6)	C (C)	111.2 (118)	149.0 (#200.2)
WBR	0.04 (0.15)	8.8 (12.4)	A (B)	1.5 (9)	5.9 (18)	0.04 (0.15)	10.2 (11.9)	B (B)	2.0 (8)	7.5 (22)
SBL	0.94 (0.85)	56.8 (54.0)	E (D)	81.7 (58)	#142.9 (#100.4)	0.81 (0.68)	44.3 (43.5)	D (D)	57.5 (44)	86.3 (65)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.11 (0.07)	27.4 (33.7)	C (C)	0.0 (0)	14.3 (13)
OVERALL	0.80 (0.80)	27.2 (24.3)	C (C)			0.76 (0.73)	22.6 (20.2)	C (C)		
The Gore Rd & Street A										
WBL	0.52 (0.35)	37.5 (36.2)	D (D)	21.5 (14)	34.8 (24)	0.51 (0.35)	37.3 (36.1)	D (D)	21.4 (14)	34.5 (24)
NBT	0.16 (0.62)	4.2 (8.2)	A (A)	8.9 (50)	23.6 (137)	0.16 (0.61)	4.1 (5.6)	A (A)	8.8 (49)	23.8 (52)
SBL	0.04 (0.13)	3.6 (4.3)	A (A)	1.1 (2)	4.8 (8)	0.04 (0.12)	3.6 (4.3)	A (A)	1.1 (2)	4.8 (8)
SBT	0.47 (0.18)	6.4 (4.1)	A (A)	38.6 (10)	89.1 (29)	0.46 (0.18)	6.3 (4.0)	A (A)	37.9 (10)	87.8 (28)
OVERALL	0.48 (0.58)	10.0 (9.5)	B (A)			0.47 (0.57)	9.9 (7.7)	A (A)		
Humber Station Rd & Street E										
EBT	0.05 (0.09)	17.6 (17.1)	B (B)	0.5 (2)	6.8 (8)	0.04 (0.06)	9.9 (10.0)	A (A)	0.3 (1)	5.6 (6)
WBT	0.50 (0.54)	20.8 (20.9)	C (C)	8.9 (10)	18.4 (21)	0.23 (0.27)	11.6 (12.1)	B (B)	6.4 (8)	15.2 (18)
NBL	0.03 (0.09)	4.3 (4.9)	A (A)	0.7 (2)	3.3 (8)	0.05 (0.14)	10.0 (10.8)	B (B)	1.1 (4)	4.3 (10)
NBT	0.14 (0.40)	4.7 (6.9)	A (A)	5.7 (20)	15.0 (46)	0.22 (0.60)	11.2 (16.0)	B (B)	9.2 (31)	19.1 (55)
NBR	0.12 (0.09)	4.7 (4.9)	A (A)	0.0 (0)	7.4 (7)	0.13 (0.09)	10.6 (10.3)	B (B)	0.0 (0)	9.5 (8)
SBL	0.00 (0.01)	4.1 (4.5)	A (A)	0.0 (0)	0.6 (1)	0.00 (0.01)	9.6 (9.7)	A (A)	0.1 (0)	0.8 (1)
SBT	0.25 (0.15)	5.4 (5.2)	A (A)	11.4 (6)	26.9 (17)	0.39 (0.22)	12.9 (11.2)	B (B)	18.4 (10)	34.1 (20)
OVERALL	0.31 (0.43)	8.0 (8.6)	A (A)			0.31 (0.43)	11.6 (13.2)	B (B)		
Humber Station Rd & Street Y										
EBL	0.03 (0.01)	31.4 (31.7)	C (C)	1.1 (0)	4.6 (2)	0.03 (0.01)	31.5 (31.8)	C (C)	1.1 (0)	4.6 (2)
EBT	0.66 (0.42)	40.1 (34.9)	D (C)	34.4 (20)	53.2 (35)	0.65 (0.41)	39.6 (34.9)	D (C)	34.2 (20)	52.9 (35)
WBL	0.59 (0.43)	41.3 (35.5)	D (D)	13.6 (13)	27.3 (25)	0.59 (0.42)	40.9 (35.5)	D (D)	13.6 (13)	27.2 (25)
WBT	0.19 (0.66)	32.5 (40.7)	C (D)	9.5 (34)	19.1 (54)	0.19 (0.65)	32.6 (40.3)	C (D)	9.5 (34)	19.1 (54)
WBR	0.05 (0.03)	31.5 (31.8)	C (C)	0.0 (0)	10.7 (9)	0.05 (0.03)	31.6 (31.9)	C (C)	0.0 (0)	10.7 (9)
NBL	0.01 (0.03)	4.1 (4.1)	A (A)	0.3 (1)	1.7 (4)	0.01 (0.03)	4.1 (4.1)	A (A)	0.3 (1)	1.7 (4)
NBT	0.30 (0.58)	5.8 (8.7)	A (A)	19.3 (54)	39.4 (99)	0.30 (0.57)	5.7 (8.4)	A (A)	19.8 (52)	40.0 (97)
SBL	0.08 (0.24)	4.6 (6.2)	A (A)	2.7 (5)	8.0 (15)	0.08 (0.24)	4.5 (6.0)	A (A)	2.7 (5)	7.9 (14)
SBT	0.32 (0.18)	5.9 (4.8)	A (A)	25.0 (13)	47.7 (25)	0.31 (0.18)	5.8 (4.8)	A (A)	24.8 (13)	47.2 (25)
OVERALL	0.38 (0.60)	16.3 (16.3)	B (B)			0.38 (0.59)	16.2 (16.1)	B (B)		

Analysis Output Summary -Signalized Intersections - Full Build-out

Movement	Existing Conditions					Full Build-out Future Background No Improvements (2041)					Full Build-out Future Background With Improvements (2041)				
	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	0.11 (0.37)	9.4 (12.0)	A (B)	3.6 (11)	10.8 (29)	0.16 (0.49)	20.7 (17.4)	C (B)	7.8 (15)	18.0 (27)	0.10 (0.24)	9.3 (6.1)	A (A)	4.8 (9)	12.3 (18)
EBT	0.43 (0.39)	12.4 (10.7)	B (B)	29.5 (28)	61.5 (57)	0.63 (0.52)	29.6 (21.7)	C (C)	87.1 (78)	132.9 (111)	0.14 (0.20)	9.3 (9.6)	A (A)	14.9 (23)	25.1 (36)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.02)	9.4 (8.3)	A (A)	0.9 (0)	11.0 (0)
WBL	0.10 (0.03)	9.4 (7.8)	A (A)	3.0 (11)	9.7 (4)	0.16 (0.13)	16.0 (14.9)	B (B)	6.2 (5)	14.2 (11)	0.08 (0.09)	5.5 (7.7)	A (A)	3.3 (3)	8.3 (8)
WBT	0.42 (0.52)	12.3 (12.6)	B (B)	32.3 (40)	63.9 (82)	0.50 (0.74)	20.1 (31.1)	C (C)	71.3 (124)	111.5 (174)	0.18 (0.25)	6.1 (11.4)	A (B)	16.6 (28)	26.9 (45)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.07)	5.3 (10.3)	A (B)	0.0 (0)	2.7 (8)
NBL	0.08 (0.17)	20.2 (21.4)	C (C)	1.2 (7)	4.9 (15)	0.14 (0.29)	26.5 (32.7)	C (C)	1.8 (10)	6.2 (22)	0.11 (0.28)	41.3 (43.2)	D (D)	2.3 (12)	7.6 (24)
NBT	0.14 (0.67)	20.5 (28.2)	C (C)	6.9 (46)	17.0 (73)	0.23 (0.89)	26.8 (55.9)	C (E)	19.8 (115)	33.3 (#160.4)	0.14 (0.71)	41.1 (49.9)	D (D)	10.2 (57)	16.9 (72)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.03)	40.3 (40.5)	D (D)	0.0 (0)	10.0 (0)
SBL	0.26 (0.20)	21.5 (21.8)	C (C)	11.9 (4)	23.8 (12)	0.27 (0.51)	27.4 (40.3)	C (D)	16.8 (8)	28.6 (#22.4)	0.47 (0.41)	45.3 (42.3)	D (D)	22.2 (8)	38.0 (13)
SBT	0.78 (0.32)	32.2 (22.4)	C (C)	59.2 (17)	92.5 (33)	0.88 (0.40)	49.3 (33.5)	D (C)	127.9 (41)	165.2 (62)	0.69 (0.26)	48.9 (40.1)	D (D)	56.3 (19)	70.3 (21)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.04)	40.7 (15.7)	D (B)	0.0 (0)	15.6 (1)
OVERALL	0.55 (0.67)	19.1 (16.8)	B (B)			0.74 (0.77)	32.4 (34.1)	C (C)			0.30 (0.35)	24.8 (23.4)	C (C)		
Humber Station Rd & King St															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.05)	15.4 (9.9)	B (A)	4.5 (2)	18.5 (7)
EBT	0.33 (0.49)	5.7 (10.8)	A (B)	25.1 (32)	38.2 (60)	0.53 (0.55)	8.6 (13.5)	A (B)	41.9 (76)	88.2 (140)	0.23 (0.25)	15.6 (11.3)	B (B)	16.8 (28)	42.6 (48)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.02)	14.3 (9.5)	B (A)	0.0 (0)	6.9 (0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.05)	9.0 (14.5)	A (B)	3.3 (2)	14.6 (8)
WBT	0.44 (0.53)	6.8 (11.5)	A (B)	36.3 (33)	54.2 (64)	0.60 (0.54)	9.7 (13.3)	A (B)	54.8 (76)	114.0 (139)	0.25 (0.29)	10.1 (16.6)	B (B)	14.9 (35)	42.2 (59)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.05 (0.04)	8.7 (14.2)	A (B)	0.0 (0)	6.2 (0)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.24)	29.7 (32.7)	C (C)	3.0 (14)	6.7 (22)
NBT	0.21 (0.50)	41.4 (21.5)	D (C)	5.5 (18)	16.9 (36)	0.57 (0.94)	39.5 (83.8)	D (F)	32.2 (58)	49.4 (84)	0.19 (0.14)	32.8 (37.1)	C (D)	13.1 (12)	19.0 (19)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.05)	31.6 (36.3)	C (D)	0.0 (0)	0.0 (0)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.06)	31.7 (40.3)	C (D)	2.9 (3)	6.4 (7)
SBT	0.34 (0.09)	42.4 (18.5)	D (B)	14.5 (3)	29.4 (10)	0.47 (0.51)	37.6 (38.8)	D (D)	24.7 (41)	40.1 (57)	0.16 (0.24)	34.5 (44.1)	C (D)	9.5 (17)	15.3 (25)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.04)	33.6 (42.5)	C (D)	0.0 (0)	0.0 (0)
OVERALL	0.42 (0.52)	10.4 (13.2)	B (B)			0.66 (0.72)	15.3 (27.7)	B (C)			0.25 (0.29)	16.7 (21.0)	B (C)		
King St & Street JJ															
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.36 (0.36)	5.4 (4.0)	A (A)	16.7 (0)	64.9 (72)	0.18 (0.19)	4.1 (2.9)	A (A)	7.5 (0)	27.2 (29)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.39 (0.47)	6.5 (3.0)	A (A)	42.4 (0)	107.7 (41)	0.20 (0.24)	5.0 (2.3)	A (A)	18.4 (0)	44.0 (21)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.33 (0.44)	6.9 (3.4)	A (A)			0.17 (0.23)	4.6 (2.5)	A (A)		
King St & Street I															
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.36 (0.36)	11.4 (2.7)	B (A)	16.7 (0)	127.6 (33)	0.18 (0.19)	9.4 (2.2)	A (A)	7.5 (0)	56.6 (17)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.39 (0.47)	5.7 (4.7)	A (A)	18.9 (0)	72.8 (103)	0.20 (0.24)	4.2 (3.1)	A (A)	8.2 (0)	29.7 (39)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.33 (0.44)	8.4 (3.9)	A (A)			0.17 (0.23)	6.7 (2.7)	A (A)		
The Gore Rd & Street Y															
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.03)	36.7 (36.8)	D (D)	0.2 (1)	1.4 (3)	0.01 (0.04)	36.7 (51.8)	D (D)	0.2 (1)	1.4 (5)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.57)	2.9 (5.9)	A (A)	0.0 (0)	23.6 (135)	0.15 (0.55)	2.9 (12.5)	A (B)	0.0 (95)	24.7 (187)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.00)	2.4 (4.4)	A (A)	0.0 (0)	1.2 (m0.3)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.54 (0.21)	7.8 (3.1)	A (A)	0.0 (0)	109.0 (34)	0.53 (0.19)	7.6 (2.4)	A (A)	0.0 (0)	107.3 (33)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.48 (0.51)	6.8 (5.3)	A (A)			0.47 (0.51)	6.6 (10.0)	A (A)		
The Gore Rd & Street A															
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.02)	36.7 (35.8)	D (D)	0.0 (0)	0.0 (0)	0.00 (0.02)	36.7 (35.8)	D (D)	0.0 (0)	0.0 (0)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.58)	2.7 (7.5)	A (A)	0.0 (37)	23.3 (115)	0.14 (0.57)	2.7 (6.3)	A (A)	0.0 (37)	23.4 (132)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.03 (0.02)	2.5 (2.8)	A (A)	0.0 (0)	4.8 (2)	0.03 (0.02)	2.5 (2.8)	A (A)	0.0 (0)	4.8 (2)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.54 (0.21)	5.6 (3.5)	A (A)	0.0 (9)	123.4 (35)	0.53 (0.21)	5.5 (3.5)	A (A)	0.0 (9)	121.1 (35)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.48 (0.51)	5.2 (7.1)	A (A)			0.47 (0.50)	5.1 (6.2)	A (A)		
Humber Station Rd & Street E															
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.27)	10.2 (12.0)	B (B)	2.6 (9)	7.7 (20)	0.51 (0.64)	44.9 (40.3)	D (D)	7.9 (25)	18.0 (41)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.04 (0.18)	9.9 (10.9)	A (B)	1.7 (8)	5.7 (17)	0.02 (0.10)	1.4 (4.6)	A (A)	1.3 (7)	2.8 (16)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.05)	11.1 (10.0)	B (A)	0.0 (0)	11.8 (6)	0.22 (0.06)	7.5 (4.5)	A (A)	0.1 (0)	0.0 (5)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.12 (0.06)	10.4 (10.0)	B (B)	5.1 (3)	12.2 (7)	0.06 (0.03)	2.0 (4.3)	A (A)	3.0 (2)	7.3 (7)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.14 (0.23)	10.8 (11.0)	B (B)			0.24 (0.20)	9.7 (17.6)	A (B)		
Humber Station Rd & Street Y															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.02)	32.5 (36.5)	C (D)	1.9 (1)	6.2 (3)	0.08 (0.02)	37.3 (40.3)	D (D)	2.1 (1)	6.3 (3)
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.00)	32.1 (36.4)	C (D)	0.0 (0)	0.0 (0)	0.01 (0.00)	36.7 (40.2)	D (D)	0.0 (0)	0.0 (0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.62 (0.23)	41.3 (38.2)	D (D)	20.4 (5)	35.6 (12)	0.36 (0.21)	27.4 (41.8)	C (D)	17.3 (6)	24.2 (13)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.02)	32.7 (36.5)	C (D)	0.0 (0)	0.0 (0)	0.08 (0.02)	25.5 (40.3)	C (D)	0.0 (0)	0.0 (0)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.00 (0.02)	3.8 (2.5)	A (A)	0.2 (1)	m0.9 (3)	0.00 (0.02)	8.8 (5.9)	A (A)	0.2 (1)	1.7 (5)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.22)	4.5 (3.2)	A (A)	11.3 (8)	24.2 (22)	0.11 (0.12)	9.5 (6.3)	A (A)	6.9 (5)	17.7 (14)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.05 (0.18)	4.0 (3.4)	A (A)	1.9 (5)	6.1 (17)	0.06 (0.17)	10.3 (2.9)	B (A)	3.4 (4)	13.2 (14)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.07 (0.03)	4.1 (2.6)	A (A)	4.3 (1)	11.0 (6)	0.04 (0.02)	9.9 (2.6)	A (A)	3.8 (1)	12.0 (3)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.27 (0.22)	17.4 (6.9)	B (A)			0.19 (0.18)	16.8 (9.0)	B (A)		
Humber Station Rd & Street EE															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.03)	37.1 (37.9)	D (D)	2.4 (1)	7.0 (3)	0.08 (0.03)	37.1 (37.9)	D (D)	2.4 (1)	7.0 (3)
NBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.14)	3.1 (2.6)	A (A)	8.3 (0)	27.4 (20)	0.10 (0.07)	2.7 (2.3)	A (A)	4.0 (0)	12.7 (10)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.10 (0.16)	2.9 (2.6)	A (A)	3.0 (0)	19.7 (24)	0.05 (0.08)	2.7 (2.3)	A (A)	1.7 (0)	8.0 (11)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
OVERALL	- (-)	- (-)	- (-)	- (-)	- (-)	0.17 (0.14)	4.2 (2.9)	A (A)			0.10 (0.08)	3.8 (2.7)	A (A)		

Analysis Output Summary -Signalized Intersections - Full Build-out

Movement	Full Build-out Future Total No Improvements (2041)					Full Build-out Future Total With Improvements (2041)				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St										
EBL	0.59 (1.35)	51.4 (219.1)	D (F)	18.0 (-69.0)	#40.7 (#123.9)	0.24 (0.52)	20.9 (13.2)	C (B)	12.4 (26)	30.2 (48)
EBT	1.00 (0.95)	83.3 (63.2)	F (E)	-120.4 (137)	#193.6 (#210.0)	0.21 (0.34)	19.3 (20.0)	B (B)	24.6 (43)	42.7 (69)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.20 (0.01)	19.6 (16.4)	B (B)	11.0 (0)	31.7 (0)
WBL	1.24 (0.99)	168.1 (95.2)	F (F)	-58.1 (27)	#112.5 (#72.1)	0.42 (0.38)	11.1 (14.2)	B (B)	25.5 (18)	46.1 (34)
WBT	0.76 (1.21)	37.1 (150.5)	D (F)	115.7 (-205.2)	162.3 (#279.8)	0.26 (0.37)	10.9 (22.0)	B (C)	29.7 (48)	46.0 (77)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.07)	9.1 (18.5)	A (B)	0.0 (0)	3.7 (11)
NBL	0.20 (0.35)	20.5 (23.7)	C (C)	1.5 (9)	6.9 (22)	0.14 (0.24)	33.7 (33.6)	C (C)	2.1 (11)	6.9 (21)
NBT	0.40 (1.42)	21.1 (228.5)	C (F)	44.3 (-352.6)	68.4 (#434.4)	0.20 (0.78)	33.5 (43.6)	C (D)	19.0 (96)	26.4 (108)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.28)	32.5 (33.8)	C (C)	0.0 (10)	13.7 (30)
SBL	0.26 (0.66)	19.6 (50.2)	B (D)	14.4 (7)	27.4 (#28.4)	0.34 (0.51)	35.5 (35.4)	D (D)	19.6 (8)	33.0 (m19.4)
SBT	1.18 (0.64)	124.1 (28.3)	F (C)	-292.1 (93)	#372.9 (132)	0.78 (0.37)	44.0 (30.5)	D (C)	92.0 (43)	105.2 (38)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.22 (0.09)	33.8 (20.0)	C (C)	6.4 (3)	24.8 (7)
OVERALL	1.23 (1.41)	85.8 (140.9)	F (F)			0.55 (0.62)	27.0 (27.7)	C (C)		
Humber Station Rd & King St										
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.36 (0.61)	24.2 (20.7)	C (C)	15.5 (32)	35.5 (55)
EBT	1.76 (2.71)	374.5 (807.2)	F (F)	-306.0 (-344.2)	#384.3 (#425.6)	0.37 (0.32)	21.8 (17.5)	C (B)	35.9 (43)	57.2 (62)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.38 (0.18)	23.1 (16.2)	C (B)	12.3 (6)	44.5 (22)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.09)	13.2 (27.7)	B (C)	6.3 (3)	15.9 (10)
WBT	1.18 (1.11)	122.6 (99.3)	F (F)	-175.5 (-239.8)	#247.3 (#318.5)	0.31 (0.51)	14.7 (33.0)	B (C)	29.3 (62)	49.0 (90)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.26)	12.7 (29.9)	B (C)	0.0 (11)	9.6 (38)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.30 (0.72)	28.2 (35.4)	C (D)	10.7 (50)	18.3 (69)
NBT	0.73 (2.16)	30.4 (564.9)	C (F)	61.0 (-364.9)	98.0 (#444.6)	0.38 (0.62)	34.9 (40.3)	C (D)	26.8 (67)	35.8 (78)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.05)	32.1 (33.3)	C (C)	0.0 (0)	0.0 (0)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.40 (0.48)	25.4 (38.9)	C (D)	21.4 (19)	31.2 (30)
SBT	1.35 (1.29)	199.1 (180.3)	F (F)	-185.5 (-202.9)	#256.5 (#276.4)	0.54 (0.63)	35.6 (49.3)	D (D)	42.4 (44)	53.8 (57)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.12)	31.5 (43.6)	C (D)	0.0 (0)	11.8 (17)
OVERALL	1.73 (2.64)	221.1 (450.0)	F (F)			0.45 (0.71)	24.3 (32.1)	C (C)		
King St & Street JJ										
EBL	0.07 (0.26)	6.4 (10.7)	A (B)	1.4 (4)	5.0 (10)	0.06 (0.18)	6.3 (5.3)	A (A)	1.3 (4)	5.4 (10)
EBT	0.47 (0.60)	9.5 (9.6)	A (A)	48.0 (68)	82.0 (134)	0.24 (0.31)	7.2 (5.8)	A (A)	20.6 (26)	36.3 (46)
WBT	0.61 (0.73)	12.4 (14.8)	B (B)	101.9 (88)	165.9 (#101.3)	0.32 (0.38)	8.9 (7.2)	A (A)	42.2 (26)	67.8 (35)
WBR	0.04 (0.17)	3.5 (11.5)	A (B)	1.8 (10)	m2.5 (m13.5)	0.04 (0.15)	7.2 (4.9)	A (A)	3.0 (2)	9.6 (7)
SBL	0.78 (0.63)	43.2 (42.5)	D (D)	48.5 (35)	73.9 (54)	0.73 (0.61)	39.2 (41.8)	D (D)	47.1 (34)	67.7 (53)
OVERALL	0.65 (0.71)	16.8 (15.0)	B (B)			0.42 (0.42)	13.9 (9.7)	B (A)		
King St & Street I										
EBL	0.06 (0.34)	9.5 (12.9)	A (B)	0.0 (3)	m4.7 (m5.9)	0.05 (0.20)	9.9 (4.2)	A (A)	2.1 (3)	m7.0 (7)
EBT	0.62 (0.65)	16.5 (6.5)	B (A)	104.3 (41)	140.8 (74)	0.32 (0.33)	12.0 (4.2)	B (A)	44.5 (17)	65.8 (32)
WBT	0.57 (0.82)	10.8 (21.4)	B (C)	62.9 (135)	108.7 (#260.5)	0.29 (0.42)	7.4 (10.8)	A (B)	25.5 (47)	44.1 (79)
WBR	0.04 (0.17)	5.9 (8.9)	A (A)	1.1 (8)	5.6 (22)	0.04 (0.15)	6.0 (8.8)	A (A)	0.5 (5)	5.3 (18)
SBL	0.78 (0.63)	42.9 (42.5)	D (D)	48.0 (35)	72.9 (54)	0.73 (0.61)	39.0 (41.8)	D (D)	46.5 (34)	67.4 (53)
OVERALL	0.66 (0.78)	18.5 (16.4)	B (B)			0.43 (0.46)	14.7 (10.7)	B (B)		
The Gore Rd & Street Y										
WBL	0.70 (0.61)	41.2 (38.9)	D (D)	38.4 (29)	59.0 (45)	0.70 (0.69)	40.7 (56.4)	D (E)	38.5 (40)	58.7 (62)
NBT	0.27 (1.00)	6.1 (37.1)	A (D)	19.8 (188)	38.5 (#349.9)	0.24 (0.83)	5.9 (30.1)	A (C)	18.4 (291)	36.3 (#324.1)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.03 (0.13)	4.7 (11.0)	A (B)	0.0 (21)	4.0 (27)
SBL	0.02 (0.53)	5.1 (27.2)	A (C)	0.6 (2)	m2.0 (m#24.5)	0.02 (0.30)	4.9 (9.8)	A (A)	0.6 (3)	m1.8 (11)
SBT	0.78 (0.34)	11.2 (4.1)	B (A)	74.5 (18)	#154.6 (34)	0.76 (0.31)	10.4 (5.2)	B (A)	76.3 (29)	137.9 (50)
OVERALL	0.76 (0.92)	14.5 (29.5)	B (C)			0.75 (0.81)	13.8 (25.1)	B (C)		
The Gore Rd & Street A										
WBL	0.70 (0.62)	40.9 (39.3)	D (D)	38.8 (29)	58.5 (49)	0.70 (0.62)	40.5 (39.2)	D (D)	38.8 (29)	58.5 (45)
NBT	0.23 (0.81)	6.1 (14.7)	A (B)	14.7 (124)	30.0 (m127.3)	0.23 (0.79)	5.7 (13.8)	A (B)	14.7 (101)	29.5 (#246.2)
SBL	0.06 (0.25)	5.0 (7.8)	A (A)	2.2 (3)	7.0 (11)	0.06 (0.24)	5.0 (7.4)	A (A)	2.2 (3)	6.9 (11)
SBT	0.63 (0.26)	10.4 (5.3)	B (A)	70.8 (19)	132.8 (41)	0.61 (0.26)	10.0 (5.2)	B (A)	69.0 (19)	128.2 (40)
OVERALL	0.64 (0.77)	14.6 (15.3)	B (B)			0.63 (0.76)	14.2 (14.7)	B (B)		
Humber Station Rd & Street E										
EBT	0.04 (0.05)	9.9 (10.0)	A (A)	0.4 (1)	5.8 (6)	0.06 (0.08)	31.4 (27.9)	C (C)	1.1 (3)	10.5 (11)
WBT	0.28 (0.41)	12.1 (13.9)	B (B)	8.2 (13)	18.5 (27)	0.65 (0.74)	41.6 (42.5)	D (D)	22.9 (34)	38.5 (52)
NBL	0.05 (0.17)	10.1 (11.0)	B (B)	1.2 (5)	4.6 (12)	0.03 (0.11)	2.6 (6.4)	A (A)	0.8 (5)	2.2 (13)
NBT	0.26 (0.72)	11.5 (19.6)	B (B)	11.2 (39)	22.4 (#79.7)	0.14 (0.42)	3.0 (8.8)	A (A)	7.5 (41)	10.9 (79)
NBR	0.22 (0.14)	11.4 (10.7)	B (B)	0.0 (0)	12.7 (10)	0.25 (0.16)	5.6 (6.7)	A (A)	1.2 (0)	8.7 (10)
SBL	0.00 (0.02)	9.6 (9.8)	A (A)	0.1 (0)	0.8 (2)	0.00 (0.01)	4.1 (5.7)	A (A)	0.1 (0)	0.6 (2)
SBT	0.45 (0.25)	13.6 (11.5)	B (B)	21.1 (11)	38.5 (22)	0.24 (0.15)	5.4 (6.5)	A (A)	17.9 (11)	37.1 (26)
OVERALL	0.36 (0.57)	12.0 (14.9)	B (B)			0.33 (0.50)	11.1 (14.1)	B (B)		
Humber Station Rd & Street Y										
EBL	0.10 (0.30)	27.0 (32.3)	C (C)	4.3 (6)	9.7 (16)	0.11 (0.28)	28.0 (34.7)	C (C)	4.3 (7)	10.4 (15)
EBT	0.71 (0.53)	36.8 (34.2)	D (C)	49.3 (29)	66.3 (50)	0.73 (0.49)	39.1 (36.2)	D (D)	49.6 (33)	70.5 (49)
WBL	0.99 (0.88)	104.0 (71.5)	F (E)	-26.8 (27)	#51.7 (#60.8)	0.42 (0.81)	20.7 (59.3)	C (E)	16.4 (30)	23.5 (49)
WBT	0.17 (0.73)	27.5 (41.4)	C (D)	11.0 (45)	19.1 (71)	0.10 (0.68)	18.1 (41.6)	B (D)	8.6 (50)	14.5 (69)
WBR	0.09 (0.09)	26.9 (29.8)	C (C)	0.0 (2)	11.7 (13)	0.09 (0.05)	18.0 (32.0)	B (C)	0.0 (0)	8.9 (9)
NBL	0.14 (0.15)	7.7 (6.1)	A (A)	4.4 (6)	13.9 (m12.7)	0.17 (0.19)	18.0 (12.2)	B (B)	6.7 (10)	22.5 (25)
NBT	0.46 (0.84)	10.0 (18.2)	B (B)	40.6 (121)	77.5 (#229.2)	0.30 (0.52)	18.4 (15.4)	B (B)	24.8 (55)	55.6 (95)
SBL	0.18 (0.92)	7.8 (61.7)	A (E)	5.5 (25)	16.5 (#37.4)	0.21 (0.43)	15.6 (8.7)	B (A)	10.4 (10)	25.1 (23)
SBT	0.40 (0.21)	9.2 (6.0)	A (A)	36.3 (17)	75.0 (27)	0.26 (0.11)	15.3 (5.8)	B (A)	31.3 (9)	50.2 (17)
OVERALL	0.61 (0.91)	23.7 (27.8)	C (C)			0.44 (0.58)	21.2 (22.3)	C (C)		
Humber Station Rd & Street EE										
EBL	0.08 (0.03)	37.1 (37.9)	D (D)	2.4 (1)	7.0 (3)	0.08 (0.03)	37.1 (37.9)	D (D)	2.4 (1)	7.0 (3)
NBT	0.41 (0.72)	4.3 (7.9)	A (A)	22.8 (0)	69.4 (#217.7)	0.21 (0.37)	3.1 (3.4)	A (A)	9.8 (0)	27.7 (55)
SBT	0.49 (0.45)	4.1 (3.7)	A (A)	23.5 (0)	67.3 (m88.9)	0.25 (0.23)	2.1 (2.8)	A (A)	9.6 (0)	20.1 (31)
OVERALL	0.44 (0.65)	4.5 (6.4)	A (A)			0.23 (0.34)	2.9 (3.2)	A (A)		

Analysis Output Summary -Unsignalized Intersections - Phase 1

Movement	Phase 1 Future Total With No improvements				Phase 1 Future Total With improvements			
	V/C	Delay (Sec)	LOS	95thQueue	V/C	Delay (Sec)	LOS	95thQueue
King St & Street I								
SBR	0.22 (0.17)	15.9 (17.6)	C (C)	6.5 (4.7)	0.21 (0.17)	15.6 (17.3)	C (C)	6.3 (4.6)
Humber Station Rd & Street E								
EBR	0.02 (0.01)	6.8 (6.9)	A (A)	6.8 (6.9)	0.02 (0.01)	6.7 (6.9)	A (A)	6.7 (6.9)
WB	0 (0)	0 (0)	A (A)	7.3 (7.5)	0 (0)	0 (0)	A (A)	7.3 (7.5)
NBL	0.01 (0.03)	6.7 (7.5)	A (A)	7 (7.1)	0.01 (0.03)	6.7 (7.5)	A (A)	7 (7)
SB	0 (0)	7.1 (6.8)	A (A)	6.4 (6.4)	0 (0)	7 (6.8)	A (A)	6.4 (6.4)
Humber Station Rd & Street Y								
EBR	0 (0)	6.7 (6.9)	A (A)	6.7 (6.9)	0 (0)	6.7 (6.8)	A (A)	6.7 (6.8)
NBL	0 (0.01)	6.7 (7.6)	A (A)	6.9 (6.9)	0 (0.01)	6.7 (7.5)	A (A)	6.9 (6.9)
SB	0.14 (0.07)	7.7 (7.5)	A (A)	7.7 (7.5)	0.13 (0.07)	7.7 (7.5)	A (A)	7.7 (7.5)
Street JJ & Street Y								
EBR	0 (0)	6.5 (6.6)	A (A)	6.5 (6.6)	0 (0)	6.5 (6.6)	A (A)	6.5 (6.6)
WBL	0.08 (0.05)	7.6 (7.6)	A (A)	7.6 (7.6)	0.08 (0.05)	7.6 (7.6)	A (A)	7.6 (7.6)
NBTR	0.03 (0.09)	6.8 (7.1)	A (A)	6.8 (7.1)	0.03 (0.09)	6.8 (7)	A (A)	6.8 (7)
SB	0.04 (0.03)	7.3 (7.2)	A (A)	7.3 (7.2)	0.04 (0.03)	7.3 (7.2)	A (A)	7.3 (7.2)
Street I & Street Y								
EBR	0.01 (0.01)	6.4 (6.5)	A (A)	6.4 (6.5)	0.01 (0.01)	6.4 (6.4)	A (A)	6.4 (6.4)
WBL	0.01 (0)	7.2 (7.3)	A (A)	7.2 (7.3)	0.01 (0)	7.2 (7.2)	A (A)	7.2 (7.2)
NBLTR	0.01 (0.04)	7 (7.1)	A (A)	7 (7.1)	0.01 (0.04)	7 (7)	A (A)	7 (7)
SB	0.02 (0.01)	7.1 (7)	A (A)	7.1 (7)	0.02 (0.01)	7 (7)	A (A)	7 (7)
Street JJ & Street EE								
EBR	0 (0)	10.2 (9.8)	B (A)	0.1 (0)	0 (0)	10.1 (9.8)	B (A)	0.1 (0)
WBL	0.13 (0.09)	12.8 (13.3)	B (B)	3.4 (2.4)	0.13 (0.09)	12.7 (13.2)	B (B)	3.4 (2.4)
0	(0)	(0.1)	(A)	(0)	(0)	(0.1)	(A)	(0)
Street I & Street EE								
EBR	0.01 (0.01)	9.5 (9.4)	A (A)	0.4 (0.2)	0.01 (0.01)	6.5 (6.6)	A (A)	6.5 (6.6)
WB	0 (0)	0 (0)	A (A)	0 (0)	0 (0)	0 (0)	A (A)	7.1 (7.1)
NBLT	0 (0.01)	1.1 (1.3)	A (A)	0.1 (0.2)	0.02 (0.08)	7.1 (7.3)	A (A)	7.1 (7.3)
SB	0 (0)	0 (0)	A (A)	0 (0)	0.06 (0.04)	7.2 (7.1)	A (A)	7.2 (7.1)
Humber Station Rd & Street EE								
EB	0 (0)	0 (0)	A (A)	0 (0)	0 (0)	0 (0)	A (A)	0 (0)

Analysis Output Summary -Unsignalized Intersections - Phase 2

Movement	Phase 2 Future Total With No improvements				Phase 2 Future Total With improvements			
	V/C	Delay (Sec)	LOS	95thQueue	V/C	Delay (Sec)	LOS	95thQueue
King St & Street I								
SBR	0.4 (0.33)	20.8 (23.8)	C (C)	14.7 (11.2)	0.39 (0.33)	20.5 (23.5)	C (C)	14.4 (11)
The Gore Rd & Street DDD								
WBR	0.03 (0.04)	10.6 (18.4)	B (C)	0.7 (1.1)	0.03 (0.04)	10.5 (18.8)	B (C)	0.7 (1.1)
Street JJ & Street Y								
EBTR	0.05 (0.03)	8.3 (8.3)	A (A)	8.3 (8.3)	0.05 (0.03)	8.2 (8.3)	A (A)	8.2 (8.3)
WBLTR	0.09 (0.15)	8.6 (8.9)	A (A)	8.6 (8.9)	0.09 (0.15)	8.5 (8.8)	A (A)	8.5 (8.8)
NBTR	0.13 (0.32)	8 (9.5)	A (A)	8 (9.5)	0.13 (0.32)	8 (9.4)	A (A)	8 (9.4)
SBLT	0.41 (0.28)	10.3 (9.4)	B (A)	10.3 (9.4)	0.41 (0.28)	10.2 (9.3)	B (A)	10.2 (9.3)
Street I & Street Y								
EBTR	0.12 (0.07)	7.8 (7.7)	A (A)	7.8 (7.7)	0.11 (0.07)	7.7 (7.7)	A (A)	7.7 (7.7)
WBLTR	0.05 (0.17)	7.6 (8.2)	A (A)	7.6 (8.2)	0.05 (0.17)	7.5 (8.1)	A (A)	7.5 (8.1)
NBLTR	0.03 (0.11)	7.5 (8)	A (A)	7.5 (8)	0.03 (0.11)	7.5 (8)	A (A)	7.5 (8)
SBLT	0.13 (0.09)	8 (8)	A (A)	8 (8)	0.13 (0.09)	7.9 (7.9)	A (A)	7.9 (7.9)
Street JJ & Street EE								
EBR	0 (0)	13.3 (10.8)	B (B)	0.1 (0)	0 (0)	13.2 (10.8)	B (B)	0.1 (0)
WBL	0.12 (0.09)	16.7 (17.3)	C (C)	3.3 (2.4)	0.12 (0.09)	16.6 (17.2)	C (C)	3.2 (2.4)
NBLTR	0 (0)	0 (0)	A (A)	0 (0)	0 (0)	0 (0)	A (A)	0 (0)
Street I & Street EE								
EBR	0.02 (0.01)	10 (9.6)	A (A)	0.4 (0.2)	0.01 (0.01)	6.7 (6.7)	A (A)	6.7 (6.7)
WB	0 (0)	0 (6.9)	A (A)	0 (6.9)	0 (0)	0 (6.9)	A (A)	0 (6.9)
NBLT	0 (0.01)	0.5 (0.6)	A (A)	0 (0.1)	0.04 (0.13)	7.2 (7.6)	A (A)	7.2 (7.6)
Humber Station Rd & Street EE								
EB	0 (0)	0 (0)	A (A)	0 (9.4)	0 (0)	0 (0)	A (A)	0 (0)

Analysis Output Summary -Unsignalized Intersections - Full Build-out

Movement	Future Total Full Build-out No improvements				Future Total Full Build-out With improvements			
	V/C	Delay (Sec)	LOS	95thQueue	V/C	Delay (Sec)	LOS	95thQueue
The Gore Rd & Street DDD								
WBR	0.03 (0.06)	11.1 (29.2)	B (D)	0.6 (1.6)	0.03 (0.06)	11 (27.5)	B (D)	0.6 (1.5)
Street VV & Street A								
EBTR	0.13 (0.24)	7.9 (8.4)	A (A)	7.9 (8.4)	0.13 (0.23)	7.8 (8.3)	A (A)	7.8 (8.3)
WBTR	0.26 (0.23)	8.5 (8.4)	A (A)	8.5 (8.4)	0.26 (0.23)	8.4 (8.3)	A (A)	8.4 (8.3)
NBL	0.01 (0.01)	7.9 (8)	A (A)	7.9 (8)	0.01 (0.01)	7.9 (8)	A (A)	7.9 (8)
SBLR	0.03 (0.01)	7.9 (7.9)	A (A)	7.9 (7.9)	0.03 (0.01)	7.8 (7.8)	A (A)	7.8 (7.8)
Street JJ & Street A								
EBLTR	0.16 (0.23)	8 (8.5)	A (A)	8 (8.5)	0.16 (0.23)	8 (8.5)	A (A)	8 (8.5)
WBLT	0.25 (0.23)	8.6 (8.6)	A (A)	8.6 (8.6)	0.25 (0.23)	8.6 (8.5)	A (A)	8.6 (8.5)
NBLR	0.04 (0.06)	8 (8)	A (A)	8 (8)	0.04 (0.06)	8 (8)	A (A)	8 (8)
SBTR	0.04 (0.02)	7.7 (7.8)	A (A)	7.7 (7.8)	0.04 (0.02)	7.7 (7.8)	A (A)	7.7 (7.8)
Street I & Street A								
EBLTR	0.14 (0.2)	7.9 (8.3)	A (A)	7.9 (8.3)	0.13 (0.2)	7.8 (8.2)	A (A)	7.8 (8.2)
WBLT	0.2 (0.2)	8.3 (8.4)	A (A)	8.3 (8.4)	0.2 (0.2)	8.2 (8.3)	A (A)	8.2 (8.3)
NBLR	0.05 (0.07)	7.9 (8)	A (A)	7.9 (8)	0.05 (0.07)	7.9 (8)	A (A)	7.9 (8)
SBTR	0.03 (0.02)	7.5 (7.6)	A (A)	7.5 (7.6)	0.03 (0.02)	7.5 (7.6)	A (A)	7.5 (7.6)
Humber Station Rd & Street A								
EBLTR	0.18 (0.19)	8.6 (9.4)	A (A)	8.6 (9.4)	0.18 (0.19)	8.6 (9.3)	A (A)	8.6 (9.3)
WBLTR	0.17 (0.23)	8.9 (9.8)	A (A)	8.9 (9.8)	0.17 (0.23)	8.8 (9.7)	A (A)	8.8 (9.7)
NBLTR	0.2 (0.48)	9 (12.2)	A (B)	9 (12.2)	0.2 (0.48)	9 (12.1)	A (B)	9 (12.1)
SBLTR	0.22 (0.15)	9.1 (9.1)	A (A)	9.1 (9.1)	0.22 (0.15)	9.1 (9.1)	A (A)	9.1 (9.1)
Street Y & Street VV								
EB	0.12 (0.26)	7.9 (8.7)	A (A)	7.9 (8.7)	0.12 (0.26)	7.8 (8.6)	A (A)	7.8 (8.6)
WBTR	0.3 (0.28)	8.8 (8.8)	A (A)	8.8 (8.8)	0.3 (0.28)	8.7 (8.7)	A (A)	8.7 (8.7)
SBLR	0.05 (0.02)	8.1 (8.2)	A (A)	8.1 (8.2)	0.05 (0.02)	8.1 (8.1)	A (A)	8.1 (8.1)
Street JJ & Street Y								
EBLTR	0.27 (0.39)	10.2 (11.9)	B (B)	10.2 (11.9)	0.27 (0.38)	10.1 (11.7)	B (B)	10.1 (11.7)
WBLTR	0.41 (0.5)	11.5 (13.5)	B (B)	11.5 (13.5)	0.4 (0.49)	11.4 (13.3)	B (B)	11.4 (13.3)
NBLTR	0.14 (0.31)	9.3 (11.3)	A (B)	9.3 (11.3)	0.14 (0.31)	9.3 (11.2)	A (B)	9.3 (11.2)
SBLTR	0.33 (0.23)	11 (10.7)	B (B)	11 (10.7)	0.33 (0.23)	10.9 (10.6)	B (B)	10.9 (10.6)
Street I & Street Y								
EBLTR	0.36 (0.43)	11 (12.6)	B (B)	11 (12.6)	0.36 (0.43)	10.8 (12.5)	B (B)	10.8 (12.5)
WBLTR	0.38 (0.55)	11.2 (14.8)	B (B)	11.2 (14.8)	0.37 (0.55)	11 (14.6)	B (B)	11 (14.6)
NBLTR	0.09 (0.3)	9.3 (11.6)	A (B)	9.3 (11.6)	0.09 (0.3)	9.3 (11.5)	A (B)	9.3 (11.5)
SBLTR	0.34 (0.25)	11.1 (11.1)	B (B)	11.1 (11.1)	0.34 (0.24)	11 (11)	B (B)	11 (11)
Street JJ & Street EE								
EBTR	0.04 (0.02)	12 (11.4)	B (B)	1.1 (0.4)	0.04 (0.02)	12 (11.4)	B (B)	1.1 (0.4)
WBL	0.05 (0.07)	13.5 (14)	B (B)	1.3 (1.7)	0.05 (0.07)	13.4 (13.9)	B (B)	1.3 (1.7)
NBLTR	0 (0.01)	0.3 (0.3)	A (A)	0 (0.1)	0 (0.01)	0.3 (0.3)	A (A)	0 (0.1)
Street I & Street EE								
EBTR	0.06 (0.03)	11.9 (11)	B (B)	1.5 (0.7)	0.06 (0.03)	11.8 (11)	B (B)	1.5 (0.7)
WB	0 (0.03)	12.5 (13.7)	B (B)	0.1 (0.9)	0 (0.03)	12.5 (13.6)	B (B)	0.1 (0.9)
NBLT	0 (0.01)	0.6 (0.7)	A (A)	0.1 (0.3)	0 (0.01)	0.6 (0.7)	A (A)	0.1 (0.3)

ROUNDBABOUT ANALYSIS- (ARCADY) - Existing Conditions

Movement	Existing Conditions				
	V/C	Delay	LOS	50thQueue	95thQueue
<i>King St & Emil Kolb Parkway</i>					
EB	0.22 (0.26)	3.4 (3.4)	A (A)	2.3 (3.8)	7.5 (14.3)
NB	0.25 (0.46)	3.9 (4.7)	A (A)	2.3 (7.5)	15.0 (22.5)
SB	0.23 (0.11)	3.3 (3.3)	A (A)	3.0 (1.5)	11.3 (5.3)
Overall	0.25 (0.46)	3.5 (4.1)	A (A)		

ROUNDBABOUT ANALYSIS- (ARCADY) - Phase 1

Movement	Phase1 Future Background (2031)					Phase 1 Future Total (2031)				
	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue
<i>King St & Emil Kolb Parkway</i>										
EB	0.24 (0.28)	3.5 (3.5)	A (A)	3.0 (3.8)	7.5 (12.8)	0.33 (0.34)	3.7 (3.6)	A (A)	5.3 (5.3)	15.0 (14.3)
NB	0.26 (0.51)	4.0 (5.0)	A (A)	3.0 (8.3)	15.0 (21.8)	0.32 (0.67)	4.3 (6.9)	A (A)	3.8 (12.8)	12.0 (39.8)
SB	0.24 (0.12)	3.4 (3.3)	A (A)	3.0 (1.5)	12.0 (5.3)	0.26 (0.17)	3.5 (3.7)	A (A)	3.8 (1.5)	12.8 (6.8)
Overall	0.26 (0.51)	3.6 (4.3)	A (A)			0.33 (0.67)	3.8 (5.4)	A (A)		

ROUNDBABOUT ANALYSIS- (ARCADY) - Phase 2

Movement	Phase2 Future Background (2031)					Phase 2 Future Total (2031)				
	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue
<i>King St & Emil Kolb Parkway</i>										
EB	0.27 (0.32)	4.0 (3.9)	A (A)	3.8 (5.3)	12.8 (16.5)	0.40 (0.38)	4.9 (4.4)	A (A)	6.8 (6.8)	21.8 (25.5)
NB	0.35 (0.57)	4.9 (5.9)	A (A)	4.5 (12.0)	13.5 (35.3)	0.44 (0.77)	5.3 (9.4)	A (A)	7.5 (27.0)	24.0 (64.5)
SB	0.28 (0.20)	3.8 (4.1)	A (A)	3.8 (3.0)	17.3 (12.8)	0.40 (0.28)	4.6 (4.7)	A (A)	6.8 (3.8)	25.5 (15.8)
Overall	0.35 (0.57)	4.3 (4.9)	A (A)			0.44 (0.77)	4.9 (7.1)	A (A)		
<i>Emil Kolb Parkway & GO station access</i>										
EB	0.04 (0.10)	3.9 (3.7)	A (A)	0.0 (0.8)	7.5 (3.0)	0.21 (0.21)	4.1 (3.7)	A (A)	3.0 (2.3)	12.8 (9.0)
NB	0.19 (0.26)	4.0 (3.6)	A (A)	1.5 (3.8)	8.3 (11.3)	0.21 (0.40)	3.5 (4.0)	A (A)	3.0 (6.0)	10.5 (18.8)
SB	0.23 (0.09)	3.7 (3.4)	A (A)	3.8 (1.5)	16.5 (9.0)	0.22 (0.15)	3.1 (3.1)	A (A)	3.0 (2.3)	9.8 (6.8)
Overall	0.19 (0.19)	3.8 (3.6)	A (A)	0	0	0.22 (0.40)	3.5 (3.8)	A (A)		

ROUNDBABOUT ANALYSIS- (ARCADY) - Full Build-out

Movement	Full Build-out Future Background (2041)					Full Build-out Future Total (2041)				
	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue
<i>King St & Emil Kolb Parkway</i>										
EB	0.28 (0.33)	3.6 (3.8)	A (A)	3.8 (4.5)	13.5 (14.3)	0.42 (0.41)	4.4 (4.3)	A (A)	7.5 (6.0)	22.5 (14.3)
NB	0.39 (0.56)	4.3 (5.4)	A (A)	5.3 (10.5)	16.5 (27.0)	0.49 (0.82)	4.7 (9.4)	A (A)	7.5 (30.0)	22.5 (82.5)
SB	0.29 (0.22)	3.5 (3.5)	A (A)	3.8 (3.8)	15.0 (15.0)	0.40 (0.31)	3.9 (4.0)	A (A)	6.8 (5.3)	25.5 (15.0)
Overall	0.39 (0.56)	3.8 (4.5)	A (A)			0.49 (0.82)	4.3 (6.9)	A (A)		
<i>Emil Kolb Parkway & GO station access</i>										
EB	0.06 (0.19)	3.5 (3.6)	A (A)	0.0 (2.3)	7.5 (6.8)	0.30 (0.33)	4.5 (4.3)	A (A)	4.5 (4.5)	22.5 (16.5)
NB	0.23 (0.28)	3.5 (3.5)	A (A)	3.0 (4.5)	9.0 (13.5)	0.31 (0.50)	3.9 (4.6)	A (A)	4.5 (9.0)	15.0 (26.3)
SB	0.23 (0.08)	3.1 (2.8)	A (A)	3.0 (1.5)	9.8 (6.0)	0.26 (0.18)	3.3 (3.3)	A (A)	4.5 (3.0)	12.0 (10.5)
Overall	0.19 (0.20)	3.3 (3.4)	A (A)			0.31 (0.50)	3.8 (4.3)	A (A)		

APPENDIX G:
Synchro and Arcady Worksheets



Lanes and Geometrics
1: The Gore Rd & King St

Existing Conditions
Morning Peak Hour

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)	1716	1666	0	1594	1693	0	1785	1644	0	1733	1839	0
Flt Permitted	0.493			0.472			0.259			0.702		
Satd. Flow (perm)	891	1666	0	792	1693	0	487	1644	0	1281	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

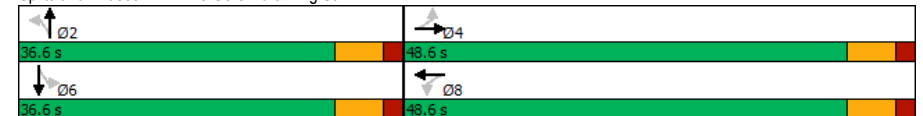
Existing Conditions
Morning Peak Hour

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	0.11	0.44	0.10	0.42	0.08	0.17	0.27	0.79
Control Delay	11.2	11.9	11.2	13.4	20.6	15.9	22.7	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	11.9	11.2	13.4	20.6	15.9	22.7	34.7
LOS	B	B	B	B	C	B	C	C
Approach Delay		11.8		13.2		16.5		32.5
Approach LOS		B		B		B		C

Intersection Summary

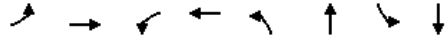
Cycle Length: 85.2
 Actuated Cycle Length: 78.5
 Natural Cycle: 55
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 19.8
 Intersection LOS: B
 Intersection Capacity Utilization 67.8%
 ICU Level of Service C
 Analysis Period (min) 15

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



Queues
1: The Gore Rd & King St

Existing Conditions
Morning Peak Hour



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	0.11	0.44	0.10	0.42	0.08	0.17	0.27	0.79
Control Delay	11.2	11.9	11.2	13.4	20.6	15.9	22.7	34.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	11.9	11.2	13.4	20.6	15.9	22.7	34.7
Queue Length 50th (m)	3.6	29.5	3.0	32.3	1.2	6.9	11.9	59.2
Queue Length 95th (m)	10.8	61.5	9.7	63.9	4.9	17.0	23.8	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)	478	921	424	911	186	644	490	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	0.11	0.44	0.10	0.42	0.06	0.13	0.20	0.61

Intersection Summary

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

Existing Conditions
Morning Peak Hour



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	
Flt	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)	1716	1666		1594	1694		1785	1643		1733	1839	
Flt Permitted	0.49	1.00		0.47	1.00		0.26	1.00		0.70	1.00	
Satd. Flow (perm)	890	1666		792	1694		487	1643		1280	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 (%)	4%	11%	4%	12%	12%	15%	0%	10%	17%	3%	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)	477	893		424	908		143	485		378	543	
v/s Ratio Prot		c0.23			0.23			0.04			c0.23	
v/s Ratio Perm	0.06			0.05			0.02			0.08		
v/c Ratio	0.11	0.43		0.10	0.42		0.08	0.14		0.26	0.78	
Uniform Delay, d1	9.0	10.9		8.9	10.9		19.9	20.3		21.1	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	1.5		0.5	1.4		0.2	0.1		0.4	6.9	
Delay (s)	9.4	12.4		9.4	12.3		20.2	20.5		21.5	32.2	
Level of Service	A	B		A	B		C	C		C	C	
Approach Delay (s)		12.1			12.0			20.4			30.3	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	19.1	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		

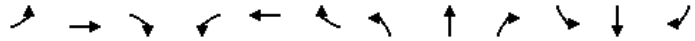
c Critical Lane Group

Lanes and Geometrics

2: Humber Station Rd & King St

Existing Conditions

Morning Peak Hour



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	1712	0	0	1754	0	0	1191	0	0	1703	0
Flt Permitted	0.995				0.880			0.866			0.921	
Satd. Flow (perm)	0	1705	0	0	1554	0	0	1050	0	0	1586	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

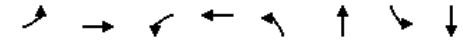
Area Type: Other

Timings

2: Humber Station Rd & King St

Existing Conditions

Morning Peak Hour



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		14.4		14.4
Actuated g/C Ratio		0.73		0.73		0.14		0.14
v/c Ratio		0.34		0.44		0.29		0.35
Control Delay		5.4		6.9		33.6		44.8
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		5.4		6.9		33.6		44.8
LOS		A		A		C		D
Approach Delay		5.4		6.9		33.6		44.8
Approach LOS		A		A		C		D

Intersection Summary

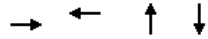
Cycle Length: 110
 Actuated Cycle Length: 105.8
 Natural Cycle: 55
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.44
 Intersection Signal Delay: 10.2
 Intersection LOS: B
 Intersection Capacity Utilization 79.7%
 ICU Level of Service D
 Analysis Period (min) 15

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



Queues
2: Humber Station Rd & King St

Existing Conditions
Morning Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	426	502	46	76
v/c Ratio	0.34	0.44	0.29	0.35
Control Delay	5.4	6.9	33.6	44.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	5.4	6.9	33.6	44.8
Queue Length 50th (m)	25.1	36.3	5.5	14.5
Queue Length 95th (m)	38.2	54.2	16.9	29.4
Internal Link Dist (m)	318.4	816.4	324.4	715.7
Turn Bay Length (m)				
Base Capacity (vph)	1259	1140	199	281
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	0.44	0.23	0.27

Intersection Summary

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

Existing Conditions
Morning Peak Hour



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	
Fr't		0.97			1.00			0.95			0.99	
Flt Protected		1.00			0.99			0.98			0.99	
Satd. Flow (prot)		1714			1753			1191			1703	
Flt Permitted		1.00			0.88			0.87			0.92	
Satd. Flow (perm)		1706			1554			1051			1586	
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%	8%	10%	11%	8%	8%	59%	0%	72%	35%	2%	20%
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			14.4			14.4	
Effective Green, g (s)		77.6			77.6			14.4			14.4	
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)		1251			1139			143			215	
v/s Ratio Prot												
v/s Ratio Perm		0.24			0.32			0.03			0.05	
v/c Ratio		0.33			0.44			0.21			0.34	
Uniform Delay, d1		5.0			5.5			40.7			41.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			1.2			0.7			1.0	
Delay (s)		5.7			6.8			41.4			42.4	
Level of Service		A			A			D			D	
Approach Delay (s)		5.7			6.8			41.4			42.4	
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	0.42		
Actuated Cycle Length (s)	105.8	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
3: Harvest moon Dr & King St

Existing Conditions
Morning Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
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	
Storage Lanes	0		0		1	
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	0.994			0.957		
Flt Protected				0.997	0.967	
Satd. Flow (prot)	1719	0	0	1818	1716	0
Flt Permitted				0.997	0.967	
Satd. Flow (perm)	1719	0	0	1818	1716	0
Link Speed (k/h)	50		50		50	
Link Distance (m)	840.4		128.4		109.0	
Travel Time (s)	60.5		9.2		7.8	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis
3: Harvest moon Dr & King St

Existing Conditions
Morning Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Volume (veh/h)	356	18	26	476	130	60
Future Volume (Veh/h)	356	18	26	476	130	60
Sign Control	Free			Free	Stop	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	356	18	26	476	130	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			374		893	365
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			374		893	365
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			98		57	91
cM capacity (veh/h)			1132		305	669
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	374	502	190			
Volume Left	0	26	130			
Volume Right	18	0	60			
cSH	1700	1132	368			
Volume to Capacity	0.22	0.02	0.52			
Queue Length 95th (m)	0.0	0.6	22.7			
Control Delay (s)	0.0	0.7	24.8			
Lane LOS			A		C	
Approach Delay (s)	0.0	0.7	24.8			
Approach LOS			C			
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			63.8%		ICU Level of Service B	
Analysis Period (min)			15			

Lanes and Geometrics
4: Emil Kolb Parkway & King St

Existing Conditions
Morning Peak Hour



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	2	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	0.97	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.892				0.933	
Flt Protected	0.986			0.963		
Satd. Flow (prot)	2949	0	0	2980	3261	0
Flt Permitted	0.986			0.963		
Satd. Flow (perm)	2949	0	0	2980	3261	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	167.3			239.7	397.1	
Travel Time (s)	12.0			17.3	28.6	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis
4: Emil Kolb Parkway & King St

Existing Conditions
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Right Turn Channelized						
Traffic Volume (veh/h)	116	302	244	71	226	180
Future Volume (veh/h)	116	302	244	71	226	180
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	116	302	244	71	226	180
Approach Volume (veh/h)	418			315	406	
Crossing Volume (veh/h)	226			116	244	
High Capacity (veh/h)	1160			1265	1144	
High v/c (veh/h)	0.36			0.25	0.35	
Low Capacity (veh/h)	957			1052	943	
Low v/c (veh/h)	0.44			0.30	0.43	
Intersection Summary						
Maximum v/c High				0.36		
Maximum v/c Low				0.44		
Intersection Capacity Utilization			48.4%		ICU Level of Service	A

Lanes and Geometrics
1: The Gore Rd & King St

Existing Conditions
Afternoon Peak Hour

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)	1750	1783	0	1451	1763	0	1785	1875	0	1785	1738	0
Flt Permitted	0.394			0.502			0.649			0.375		
Satd. Flow (perm)	726	1783	0	767	1763	0	1219	1875	0	705	1738	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

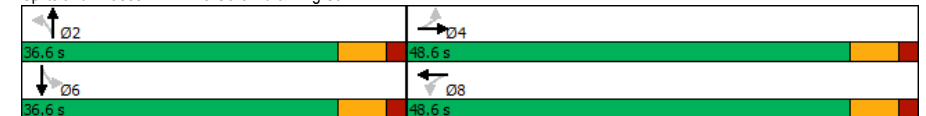
Existing Conditions
Afternoon Peak Hour

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	0.37	0.39	0.03	0.52	0.17	0.68	0.20	0.35
Control Delay	13.6	11.4	9.2	13.1	22.2	31.5	23.9	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	11.4	9.2	13.1	22.2	31.5	23.9	19.9
LOS	B	B	A	B	C	C	C	B
Approach Delay		12.0		13.0		30.2		20.6
Approach LOS		B		B		C		C

Intersection Summary

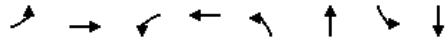
Cycle Length: 85.2
 Actuated Cycle Length: 75.9
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.8
 Intersection LOS: B
 Intersection Capacity Utilization 92.2%
 ICU Level of Service F
 Analysis Period (min) 15

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



Queues
1: The Gore Rd & King St

Existing Conditions
Afternoon Peak Hour



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	0.37	0.39	0.03	0.52	0.17	0.68	0.20	0.35
Control Delay	13.6	11.4	9.2	13.1	22.2	31.5	23.9	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.6	11.4	9.2	13.1	22.2	31.5	23.9	19.9
Queue Length 50th (m)	10.7	27.7	0.8	39.9	6.6	45.6	4.4	16.7
Queue Length 95th (m)	28.9	56.8	3.7	81.5	15.4	72.8	12.0	32.5
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)	402	990	425	985	482	745	279	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.39	0.03	0.52	0.12	0.47	0.14	0.24

Intersection Summary

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

Existing Conditions
Afternoon Peak Hour



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	
Flt	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)	1750	1783		1451	1762		1785	1875		1785	1739	
Flt Permitted	0.39	1.00		0.50	1.00		0.65	1.00		0.38	1.00	
Satd. Flow (perm)	726	1783		766	1762		1218	1875		705	1739	
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 (%)	2%	7%	5%	23%	7%	1%	0%	1%	4%	0%	4%	7%
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)	402	988		424	977		330	508		191	471	
v/s Ratio Prot		0.21			c0.29			c0.18			0.09	
v/s Ratio Perm	0.20			0.02			0.05			0.05		
v/c Ratio	0.37	0.39		0.03	0.52		0.17	0.67		0.20	0.32	
Uniform Delay, d1	9.5	9.6		7.7	10.6		21.1	24.7		21.3	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	1.1		0.1	2.0		0.3	3.5		0.5	0.4	
Delay (s)	12.0	10.7		7.8	12.6		21.4	28.2		21.8	22.4	
Level of Service	B	B		A	B		C	C		C	C	
Approach Delay (s)		11.1			12.4			27.2			22.3	
Approach LOS		B			B			C			C	

Intersection Summary

HCM 2000 Control Delay	16.8	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

Existing Conditions

Afternoon Peak Hour

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	1808	0	0	1736	0	0	1697	0	0	1789	0
Flt Permitted		0.992			0.976			0.870			0.858	
Satd. Flow (perm)	0	1795	0	0	1698	0	0	1502	0	0	1562	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

Existing Conditions

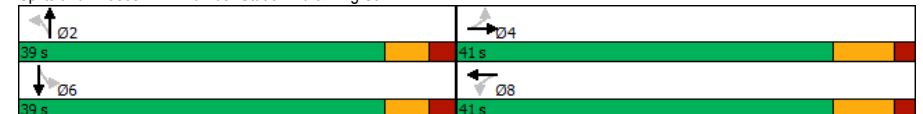
Afternoon Peak Hour

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)		33.6		33.6		15.0		15.0
Actuated g/C Ratio		0.54		0.54		0.24		0.24
v/c Ratio		0.49		0.53		0.53		0.11
Control Delay		11.3		12.1		22.5		16.1
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.3		12.1		22.5		16.1
LOS		B		B		C		B
Approach Delay		11.3		12.1		22.5		16.1
Approach LOS		B		B		C		B

Intersection Summary

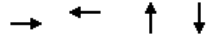
Cycle Length: 80
 Actuated Cycle Length: 62.5
 Natural Cycle: 50
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 13.7
 Intersection Capacity Utilization 62.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
2: Humber Station Rd & King St

Existing Conditions
Afternoon Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	473	488	208	41
v/c Ratio	0.49	0.53	0.53	0.11
Control Delay	11.3	12.1	22.5	16.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.3	12.1	22.5	16.1
Queue Length 50th (m)	31.5	33.2	17.8	3.0
Queue Length 95th (m)	59.5	63.9	36.3	9.6
Internal Link Dist (m)	318.4	816.4	324.4	715.7
Turn Bay Length (m)				
Base Capacity (vph)	967	917	801	820
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	0.49	0.53	0.26	0.05

Intersection Summary

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

Existing Conditions
Afternoon Peak Hour



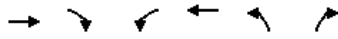
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	7	442	24	18	429	41	71	69	68	14	18	9
Future Volume (vph)	7	442	24	18	429	41	71	69	68	14	18	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (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	
Fit Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1808			1736			1698			1790	
Fit Permitted		0.99			0.98			0.87			0.86	
Satd. Flow (perm)		1795			1697			1503			1563	
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	28	0	0	7	0
Lane Group Flow (vph)	0	471	0	0	485	0	0	180	0	0	34	0
Heavy Vehicles (%)	29%	4%	25%	28%	7%	24%	10%	0%	9%	7%	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)		33.6			33.6			15.0			15.0	
Effective Green, g (s)		33.6			33.6			15.0			15.0	
Actuated g/C Ratio		0.54			0.54			0.24			0.24	
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)		966			913			361			375	
v/s Ratio Prot												
v/s Ratio Perm		0.26			0.29			0.12			0.02	
v/c Ratio		0.49			0.53			0.50			0.09	
Uniform Delay, d1		9.0			9.3			20.5			18.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.8			2.2			1.1			0.1	
Delay (s)		10.8			11.5			21.5			18.5	
Level of Service		B			B			C			B	
Approach Delay (s)		10.8			11.5			21.5			18.5	
Approach LOS		B			B			C			B	

Intersection Summary

HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	62.4	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
3: Harvest moon Dr & King St

Existing Conditions
Afternoon Peak Hour

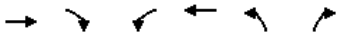
						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%		0%		0%	
Storage Length (m)	0.0		0.0		0.0	
Storage Lanes	0		0		1	
Taper Length (m)			0.0		0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.969			0.948		
Flt Protected				0.994	0.970	
Satd. Flow (prot)	1788	0	0	1778	1719	0
Flt Permitted				0.994	0.970	
Satd. Flow (perm)	1788	0	0	1778	1719	0
Link Speed (k/h)	50		50		50	
Link Distance (m)	840.4		128.4		109.0	
Travel Time (s)	60.5		9.2		7.8	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis
3: Harvest moon Dr & King St

Existing Conditions
Afternoon Peak Hour

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔		↔	
Traffic Volume (veh/h)	405	119	58	426	41	26
Future Volume (Veh/h)	405	119	58	426	41	26
Sign Control	Free			Free	Stop	
Grade	0%		0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	405	119	58	426	41	26
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None		None			
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			524		1006	464
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			524		1006	464
tC, single (s)			4.1		6.4	6.2
iC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		84	96
cM capacity (veh/h)			1038		252	594
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	524	484	67			
Volume Left	0	58	41			
Volume Right	119	0	26			
cSH	1700	1038	325			
Volume to Capacity	0.31	0.06	0.21			
Queue Length 95th (m)	0.0	1.4	6.1			
Control Delay (s)	0.0	1.6	18.9			
Lane LOS			A			C
Approach Delay (s)	0.0	1.6	18.9			
Approach LOS			C			
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			68.0%	ICU Level of Service	C	
Analysis Period (min)			15			

Lanes and Geometrics
4: Emil Kolb Parkway & King St

Existing Conditions
Afternoon Peak Hour



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	2	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	0.97	0.95	0.95	0.95	0.95	0.95
Ped Bike Factor						
Frt	0.904				0.917	
Flt Protected	0.982			0.972		
Satd. Flow (prot)	3145	0	0	3312	2904	0
Flt Permitted	0.982			0.972		
Satd. Flow (perm)	3145	0	0	3312	2904	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	167.3			239.7	397.1	
Travel Time (s)	12.0			17.3	28.6	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis
4: Emil Kolb Parkway & King St

Existing Conditions
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Right Turn Channelized						
Traffic Volume (veh/h)	176	315	415	316	74	91
Future Volume (veh/h)	176	315	415	316	74	91
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	176	315	415	316	74	91
Approach Volume (veh/h)	491			731	165	
Crossing Volume (veh/h)	74			176	415	
High Capacity (veh/h)	1307			1207	999	
High v/c (veh/h)	0.38			0.61	0.17	
Low Capacity (veh/h)	1091			999	813	
Low v/c (veh/h)	0.45			0.73	0.20	

Intersection Summary

Maximum v/c High	0.61
Maximum v/c Low	0.73
Intersection Capacity Utilization	53.0%
ICU Level of Service	A

Lanes and Geometrics
1: The Gore Rd & King St

Future Background 2031 Ph1
Morning Peak Hour

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)	1697	1762	1570	1697	1762	1484	1765	1779	1541	1713	1921	1633
Flt Permitted	0.531			0.546			0.227			0.710		
Satd. Flow (perm)	880	1762	1346	908	1762	1273	398	1779	1321	1136	1921	1400
Right Turn on Red			Yes		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
1: The Gore Rd & King St

Future Background 2031 Ph1
Morning Peak Hour

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)	68.2	68.2	68.2	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	0.10	0.26	0.20	0.07	0.35	0.03	0.11	0.16	0.06	0.35	0.79	0.28
Control Delay	16.3	16.2	3.2	9.1	12.1	3.1	33.8	33.7	0.3	38.8	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	16.3	16.2	3.2	9.1	12.1	3.1	33.8	33.7	0.3	38.8	53.7	6.9
LOS	B	B	A	A	B	A	C	C	A	D	D	A
Approach Delay		11.6			11.3			26.2			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

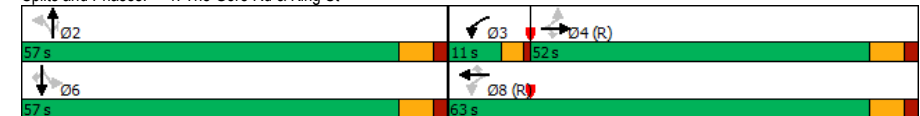
Intersection LOS: C

Intersection Capacity Utilization 71.7%

ICU Level of Service C

Analysis Period (min) 15

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



Queues
1: The Gore Rd & King St

Future Background 2031 Ph1
Morning Peak Hour



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	0.10	0.26	0.20	0.07	0.35	0.03	0.11	0.16	0.06	0.35	0.79	0.28
Control Delay	16.3	16.2	3.2	9.1	12.1	3.1	33.8	33.7	0.3	38.8	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	16.3	16.2	3.2	9.1	12.1	3.1	33.8	33.7	0.3	38.8	53.7	6.9
Queue Length 50th (m)	5.6	31.6	0.0	3.3	40.5	0.0	2.1	13.9	0.0	20.3	86.8	0.0
Queue Length 95th (m)	15.2	59.1	12.3	9.4	73.4	3.6	6.7	23.6	0.0	33.1	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		
Base Capacity (vph)	499	1000	838	649	1129	827	167	747	594	477	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	0.10	0.26	0.20	0.07	0.35	0.03	0.07	0.10	0.04	0.21	0.47	0.19

Intersection Summary

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

Future Background 2031 Ph1
Morning Peak Hour



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)	1574	1762	1346	1630	1762	1273	1681	1779	1321	1520	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)	880	1762	1346	938	1762	1273	402	1779	1321	1136	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	50	50	50	50	
Heavy Vehicles (%)	4%	9%	4%	4%	9%	10%	0%	8%	6%	3%	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			8	8			2		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)	493	988	754	633	1129	815	100	443	329	283	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			0.03	
v/c Ratio	0.10	0.26	0.13	0.07	0.35	0.02	0.11	0.16	0.02	0.35	0.79	0.09	
Uniform Delay, d1	12.3	13.6	12.5	8.1	9.9	7.8	34.8	35.3	34.0	37.1	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	0.4	0.6	0.3	0.0	0.8	0.0	0.5	0.2	0.0	0.8	8.4	0.1	
Delay (s)	12.7	14.2	12.8	8.2	10.8	7.9	35.3	35.4	34.0	37.9	50.5	34.7	
Level of Service	B	B	B	A	B	A	D	D	C	D	D	C	
Approach Delay (s)	13.6			10.4			35.1			45.1			
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	0.49		
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

2: Humber Station Rd & King St

Future Background 2031 Ph1

Morning Peak Hour

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		0	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	1.00		0.91	0.93		0.90	0.99	
Frt			0.850		0.996			0.910			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1541	1590	1784	0	1401	1125	0	1665	1842	0
Flt Permitted	0.459			0.472			0.711			0.738		
Satd. Flow (perm)	804	1812	1352	745	1784	0	949	1125	0	1164	1842	0
Right Turn on Red			Yes		Yes			Yes			Yes	
Satd. Flow (RTOR)			122		2			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

2: Humber Station Rd & King St

Future Background 2031 Ph1

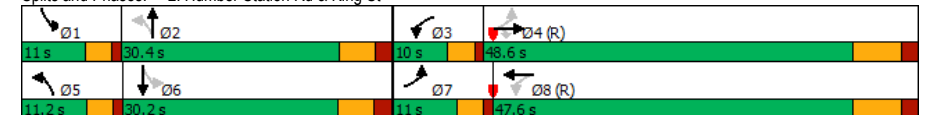
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	5	347	103	73	456	17	12	17	59
Future Volume (vph)	5	347	103	73	456	17	12	17	59
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	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	11.2	30.0	11.0	30.2
Total Split (s)	11.0	48.6	48.6	10.0	47.6	11.2	30.4	11.0	30.2
Total Split (%)	11.0%	48.6%	48.6%	10.0%	47.6%	11.2%	30.4%	11.0%	30.2%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	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	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	4.0	6.0	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	None	Min	None	Min
Act Effct Green (s)	62.9	54.9	54.9	66.3	61.7	23.5	18.6	23.2	18.2
Actuated g/C Ratio	0.63	0.55	0.55	0.66	0.62	0.24	0.19	0.23	0.18
v/c Ratio	0.01	0.35	0.13	0.13	0.43	0.07	0.13	0.06	0.19
Control Delay	9.6	17.2	2.9	9.0	14.9	23.8	19.2	23.6	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	17.2	2.9	9.0	14.9	23.8	19.2	23.6	32.2
LOS	A	B	A	A	B	C	B	C	C
Approach Delay		13.9			14.1		20.9		30.4
Approach LOS		B			B		C		C

Intersection Summary

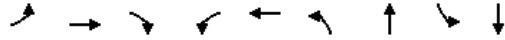
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 15.5
 Intersection Capacity Utilization 62.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
2: Humber Station Rd & King St

Future Background 2031 Ph1
Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	347	103	73	468	17	30	17	64
v/c Ratio	0.01	0.35	0.13	0.13	0.43	0.07	0.13	0.06	0.19
Control Delay	9.6	17.2	2.9	9.0	14.9	23.8	19.2	23.6	32.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.6	17.2	2.9	9.0	14.9	23.8	19.2	23.6	32.2
Queue Length 50th (m)	0.3	30.7	0.0	3.1	30.5	2.9	2.1	2.9	10.8
Queue Length 95th (m)	2.1	76.4	7.5	13.5	109.2	6.7	9.3	6.6	20.6
Internal Link Dist (m)		305.7			816.4		324.5		323.2
Turn Bay Length (m)	50.0		25.0	50.0				50.0	
Base Capacity (vph)	579	1005	804	550	1101	256	289	306	445
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	0.01	0.35	0.13	0.13	0.43	0.07	0.10	0.06	0.14

Intersection Summary

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

Future Background 2031 Ph1
Morning Peak Hour



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		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	
Frbp, ped/bikes	1.00	1.00	0.88	1.00	1.00		1.00	0.93		1.00	0.99	
Frbp, ped/bikes	0.98	1.00	1.00	0.98	1.00		0.93	1.00		0.93	1.00	
Frt	1.00	1.00	0.85	1.00	1.00		1.00	0.91		1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1693	1812	1352	1552	1785		1308	1125		1545	1842	
Flt Permitted	0.46	1.00	1.00	0.47	1.00		0.71	1.00		0.74	1.00	
Satd. Flow (perm)	817	1812	1352	771	1785		980	1125		1199	1842	
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	1	0	0	15	0	0	3	0
Lane Group Flow (vph)	5	347	53	73	467	0	17	15	0	17	61	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	2%	6%	6%	11%	7%	3%	26%	2%	72%	6%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	52.9	51.7	51.7	61.2	56.0		21.5	18.6		21.1	18.3	
Effective Green, g (s)	52.9	51.7	51.7	61.2	56.0		21.5	18.6		21.1	18.3	
Actuated g/C Ratio	0.53	0.52	0.52	0.61	0.56		0.22	0.19		0.21	0.18	
Clearance Time (s)	4.0	7.4	7.4	4.0	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	
Lane Grp Cap (vph)	442	936	698	514	999		220	209		262	337	
v/s Ratio Prot	0.00	0.19		c0.01	c0.26		c0.00	0.01		0.00	c0.03	
v/s Ratio Perm	0.01		0.04	0.08			0.01			0.01		
v/c Ratio	0.01	0.37	0.08	0.14	0.47		0.08	0.07		0.06	0.18	
Uniform Delay, d1	11.2	14.4	12.1	8.3	13.1		31.2	33.6		31.5	34.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.1	0.2	0.1	1.6		0.2	0.2		0.1	0.3	
Delay (s)	11.2	15.6	12.4	8.4	14.7		31.4	33.7		31.6	34.8	
Level of Service	B	B	B	A	B		C	C		C	C	
Approach Delay (s)		14.8			13.8		32.9			34.1		
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	0.38		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

Future Background 2031 Ph1
Morning Peak Hour

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	1
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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	1921
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	1921
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

Future Background 2031 Ph1
Morning Peak Hour

Lane Group	EBT	WBT	Ø6
Lane Configurations	→	←	
Traffic Volume (vph)	394	467	
Future Volume (vph)	394	467	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	33%
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	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.28	0.34	
Control Delay	6.6	7.0	
Queue Delay	0.0	0.0	
Total Delay	6.6	7.0	
LOS	A	A	
Approach Delay	6.6	7.0	
Approach LOS	A	A	

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: 0.34
 Intersection Signal Delay: 6.8
 Intersection Capacity Utilization 51.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Background 2031 Ph1
Morning Peak Hour

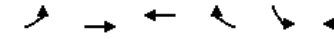


Lane Group	EBT	WBT
Lane Group Flow (vph)	394	467
v/c Ratio	0.28	0.34
Control Delay	6.6	7.0
Queue Delay	0.0	0.0
Total Delay	6.6	7.0
Queue Length 50th (m)	12.6	15.6
Queue Length 95th (m)	49.7	60.6
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1389	1389
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.28	0.34

Intersection Summary

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

Future Background 2031 Ph1
Morning Peak Hour



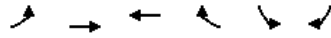
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	394	467	0	0	0
Future Volume (vph)	0	394	467	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frtp, ped/bikes		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1921	1921			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1921	1921			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	394	467	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	394	467	0	0	0
Confl. Peds. (#/hr)		50		50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		1389	1389			
v/s Ratio Prot		0.21	c0.24			
v/s Ratio Perm						
v/c Ratio		0.28	0.34			
Uniform Delay, d1		4.3	4.6			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.5	0.7			
Delay (s)		4.8	5.2			
Level of Service		A	A			
Approach Delay (s)		4.8	5.2		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Background 2031 Ph1
Morning Peak Hour



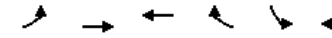
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	0
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

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

Future Background 2031 Ph1
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	394	467	0	0	0
Future Volume (Veh/h)	0	394	467	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	394	467	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.86				0.88	0.86
vC, conflicting volume	517				961	567
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	359				793	417
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	998				291	506
Direction, Lane #						
	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	394	467	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.23	0.27	0.05	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			42.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Background 2031 Ph1
Morning Peak Hour

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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	0	0	1921
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

Future Background 2031 Ph1
Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	166	0	0	646
Future Volume (Veh/h)	0	0	166	0	0	646
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	0	166	0	0	646
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	0.87					
vC, conflicting volume	912	266			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	821	266			216	
tC, single (s)	6.4	6.2			4.1	
iC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	275	712			1307	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	0	166	646			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.10	0.38			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			52.1%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Background 2031 Ph1
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	0	1858	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

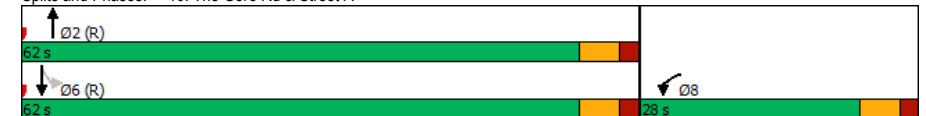
Future Background 2031 Ph1
Morning Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	166	646	
Future Volume (vph)	166	646	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.10	0.40	
Control Delay	4.4	6.1	
Queue Delay	0.0	0.0	
Total Delay	4.4	6.1	
LOS	A	A	
Approach Delay	4.4	6.1	
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: 0.40
 Intersection Signal Delay: 5.7
 Intersection Capacity Utilization 59.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

Future Background 2031 Ph1
Morning Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	166	646
v/c Ratio	0.10	0.40
Control Delay	4.4	6.1
Queue Delay	0.0	0.0
Total Delay	4.4	6.1
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	19.6	87.8
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1598	1631
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.10	0.40

Intersection Summary

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

Future Background 2031 Ph1
Morning Peak Hour

	↙	↘	↑	↗	↖	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↖	↓
Traffic Volume (vph)	0	0	166	0	0	646
Future Volume (vph)	0	0	166	0	0	646
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
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			1921
Flt Permitted			1.00			1.00
Satd. Flow (perm)			1883			1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	166	0	0	646
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	166	0	0	646
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1447			1477
v/s Ratio Prot			0.09			c0.34
v/s Ratio Perm						
v/c Ratio			0.11			0.44
Uniform Delay, d1			2.6			3.6
Progression Factor			0.99			1.00
Incremental Delay, d2			0.2			0.9
Delay (s)			2.8			4.6
Level of Service			A			A
Approach Delay (s)	0.0		2.8			4.6
Approach LOS	A		A			A

Intersection Summary

HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

Future Background 2031 Ph1

48: Humber Station Rd & Street E

Morning Peak Hour



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		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												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	1883	1883	0	1921	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	1883	1883	0	1921	1921	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.8			126.7			153.0			361.4	
Travel Time (s)		10.0			9.1			11.0			26.0	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

Future Background 2031 Ph1

48: Humber Station Rd & Street E

Morning Peak Hour



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	0	0	0	0	0	0	29	0	0	81	0
Future Volume (vph)	0	0	0	0	0	0	0	29	0	0	81	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	0	0	0	0	0	0	29	0	0	81	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	0	0	0	29	0	81						
Volume Left (vph)	0	0	0	0	0	0						
Volume Right (vph)	0	0	0	0	0	0						
Hadj (s)	0.00	0.00	0.00	0.03	0.00	0.00						
Departure Headway (s)	4.2	4.2	4.6	4.6	4.5	4.5						
Degree Utilization, x	0.00	0.00	0.00	0.04	0.00	0.10						
Capacity (veh/h)	845	845	796	772	803	785						
Control Delay (s)	7.2	7.2	6.4	6.6	6.3	6.8						
Approach Delay (s)	0.0	0.0	6.6		6.8							
Approach LOS	A	A	A		A							

Intersection Summary

Delay	6.8
Level of Service	A
Intersection Capacity Utilization	29.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
58: Humber Station Rd & Street Y

Future Background 2031 Ph1
Morning Peak Hour

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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	1883	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	1883	1921	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	153.0	
Travel Time (s)	5.9			14.0	11.0	
Intersection Summary						

Area Type: Other

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

Future Background 2031 Ph1
Morning Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	0	0	29	81	0
Future Volume (vph)	0	0	0	29	81	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	29	81	0
Direction, Lane #						
	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	0	0	29	81		
Volume Left (vph)	0	0	0	0		
Volume Right (vph)	0	0	0	0		
Hadj (s)	0.00	0.00	0.03	0.00		
Departure Headway (s)	4.1	4.5	4.6	4.0		
Degree Utilization, x	0.00	0.00	0.04	0.09		
Capacity (veh/h)	849	797	772	888		
Control Delay (s)	7.1	6.3	6.6	7.4		
Approach Delay (s)	0.0	6.6		7.4		
Approach LOS	A	A		A		
Intersection Summary						
Delay			7.2			
Level of Service			A			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
64: Street JJ & Street Y

Future Background 2031 Ph1
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Friction												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

Future Background 2031 Ph1
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				0.0%			ICU Level of Service				A	
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

Future Background 2031 Ph1
Morning Peak Hour

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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

Future Background 2031 Ph1
Morning Peak Hour

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	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				29.6%				ICU Level of Service			A	
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

Future Background 2031 Ph1
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

Future Background 2031 Ph1
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	855	727	881	760	727	980	1490			1502		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				0.0								
Intersection Capacity Utilization			29.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

Future Background 2031 Ph1
Morning Peak Hour

	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	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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

Future Background 2031 Ph1
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↑			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
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

Future Background 2031 Ph1
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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)	1921	0	0	1883	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1883	1921	0
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

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

Future Background 2031 Ph1
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	29	81	0
Future Volume (Veh/h)	0	0	0	29	81	0
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	0	0	29	81	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)				347		
pX, platoon unblocked						
vC, conflicting volume	210	181	131			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210	181	131			
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	100	100			
cM capacity (veh/h)	717	794	1392			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	29	81			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1392	1700			
Volume to Capacity	0.00	0.00	0.05			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

FBPh1 2031 Without Improvements
Morning Peak Hour

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	0.93	0.94		0.96	0.99		0.97	0.96		0.89	0.96	
Frt		0.940			0.990			0.962			0.963	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1589	0	1681	1753	0	1261	1722	0	1681	1784	0
Flt Permitted	0.518			0.375			0.174			0.695		
Satd. Flow (perm)	796	1589	0	636	1753	0	223	1722	0	1095	1784	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		34			4			17			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

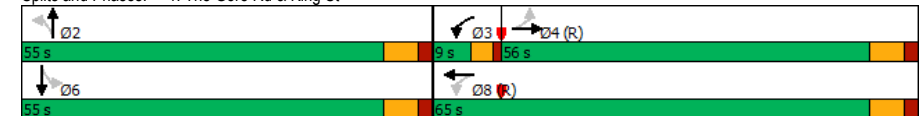
FBPh1 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	259	43	390	11	72	100	377
Future Volume (vph)	51	259	43	390	11	72	100	377
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)	56.0	56.0	9.0	65.0	55.0	55.0	55.0	55.0
Total Split (%)	46.7%	46.7%	7.5%	54.2%	45.8%	45.8%	45.8%	45.8%
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)	59.3	59.3	70.5	67.9	38.9	38.9	38.9	38.9
Actuated g/C Ratio	0.49	0.49	0.59	0.57	0.32	0.32	0.32	0.32
v/c Ratio	0.13	0.54	0.10	0.42	0.15	0.17	0.28	0.85
Control Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2
LOS	C	C	B	B	C	C	C	D
Approach Delay		24.5		17.4		23.2		46.9
Approach LOS		C		B		C		D

Intersection Summary

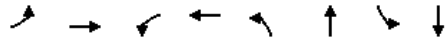
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 30.6
 Intersection Capacity Utilization 72.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
1: The Gore Rd & King St

FBPh1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	430	43	417	11	96	100	502
v/c Ratio	0.13	0.54	0.10	0.42	0.15	0.17	0.28	0.85
Control Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2
Queue Length 50th (m)	6.8	67.4	4.2	55.0	1.9	13.6	18.1	110.7
Queue Length 95th (m)	17.4	116.0	11.4	95.1	6.4	23.4	29.1	137.1
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)	395	807	430	994	89	705	441	730
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	0.13	0.53	0.10	0.42	0.12	0.14	0.23	0.69

Intersection Summary

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

FBPh1 2031 Without Improvements
Morning Peak Hour



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		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	
Frbp, ped/bikes	1.00	0.94		1.00	0.99		1.00	0.96		1.00	0.96	
Frbp, ped/bikes	0.93	1.00		0.98	1.00		1.00	1.00		0.89	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)	1452	1589		1655	1754		1261	1723		1497	1784	
Flt Permitted	0.52	1.00		0.38	1.00		0.17	1.00		0.69	1.00	
Satd. Flow (perm)	792	1589		654	1754		231	1723		1095	1784	
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	17	0	0	2	0	0	11	0	0	11	0
Lane Group Flow (vph)	51	413	0	43	415	0	11	85	0	100	491	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)	58.5	58.5		67.9	67.9		38.9	38.9		38.9	38.9	
Effective Green, g (s)	58.5	58.5		67.9	67.9		38.9	38.9		38.9	38.9	
Actuated g/C Ratio	0.49	0.49		0.57	0.57		0.32	0.32		0.32	0.32	
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)	386	774		415	992		74	558		354	578	
v/s Ratio Prot		c0.26		0.00	c0.24			0.05			c0.27	
v/s Ratio Perm	0.06			0.05			0.05			0.09		
v/c Ratio	0.13	0.53		0.10	0.42		0.15	0.15		0.28	0.85	
Uniform Delay, d1	16.8	21.3		12.8	14.8		28.8	28.8		30.2	37.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	2.6		0.1	1.3		0.9	0.1		0.4	11.2	
Delay (s)	17.6	23.9		12.9	16.1		29.7	28.9		30.6	49.0	
Level of Service	B	C		B	B		C	C		C	D	
Approach Delay (s)		23.2			15.8			29.0			45.9	
Approach LOS		C			B			C			D	

Intersection Summary

HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	72.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FBPh1 2031 Without Improvements
Morning Peak Hour

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			0.99			0.92			0.97	
Frt		0.969			0.997			0.948			0.992	
Flt Protected		0.999			0.993			0.982			0.990	
Satd. Flow (prot)	0	1674	0	0	1811	0	0	1163	0	0	1626	0
Flt Permitted		0.995			0.882			0.887			0.935	
Satd. Flow (perm)	0	1667	0	0	1596	0	0	1015	0	0	1504	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			1			18			3	
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

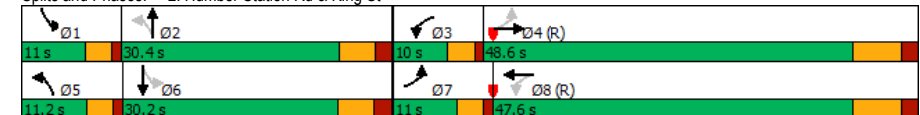
FBPh1 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	5	347	73	456	17	12	17	59
Future Volume (vph)	5	347	73	456	17	12	17	59
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)		68.2		68.2		18.4		18.2
Actuated g/C Ratio		0.68		0.68		0.18		0.18
v/c Ratio		0.40		0.50		0.23		0.29
Control Delay		8.6		10.5		25.3		35.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		8.6		10.5		25.3		35.3
LOS		A		B		C		D
Approach Delay		8.6		10.5		25.3		35.3
Approach LOS		A		B		C		D

Intersection Summary

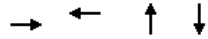
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.50
 Intersection Signal Delay: 12.1
 Intersection Capacity Utilization 90.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

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



Queues
2: Humber Station Rd & King St

FBPh1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	455	541	47	81
v/c Ratio	0.40	0.50	0.23	0.29
Control Delay	8.6	10.5	25.3	35.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.6	10.5	25.3	35.3
Queue Length 50th (m)	28.7	39.5	5.2	14.4
Queue Length 95th (m)	62.4	85.0	14.4	25.6
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1142	1088	261	363
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	0.40	0.50	0.18	0.22

Intersection Summary

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

FBPh1 2031 Without Improvements
Morning Peak Hour



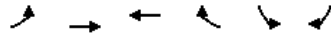
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	5	347	103	73	456	12	17	12	18	17	59	5
Future Volume (vph)	5	347	103	73	456	12	17	12	18	17	59	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	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)		7.4			7.4			6.0			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frpb, ped/bikes		0.97			1.00			0.95			0.99	
Flpb, ped/bikes		1.00			0.99			0.97			0.98	
Frt		0.97			1.00			0.95			0.99	
Flt Protected		1.00			0.99			0.98			0.99	
Satd. Flow (prot)		1675			1798			1126			1592	
Flt Permitted		1.00			0.88			0.89			0.94	
Satd. Flow (perm)		1668			1597			1016			1504	
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	6	0	0	0	0	0	15	0	0	2	0
Lane Group Flow (vph)	0	449	0	0	541	0	0	32	0	0	79	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)		68.2			68.2			18.4			18.2	
Effective Green, g (s)		68.2			68.2			18.4			18.2	
Actuated g/C Ratio		0.68			0.68			0.18			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)		1137			1089			186			273	
v/s Ratio Prot												
v/s Ratio Perm		0.27			0.34			0.03			0.05	
v/c Ratio		0.39			0.50			0.17			0.29	
Uniform Delay, d1		6.9			7.6			34.4			35.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.4			0.4			0.6	
Delay (s)		7.1			8.0			34.8			35.9	
Level of Service		A			A			C			D	
Approach Delay (s)		7.1			8.0			34.8			35.9	
Approach LOS		A			A			C			D	

Intersection Summary

HCM 2000 Control Delay	10.8	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)	21.6
Intersection Capacity Utilization	90.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FBPh1 2031 Without Improvements
Morning Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FBPh1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBT	WBT	Ø6
Lane Configurations	↑	↑	
Traffic Volume (vph)	394	467	
Future Volume (vph)	394	467	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	58.0	58.0	32.0
Total Split (%)	64.4%	64.4%	36%
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

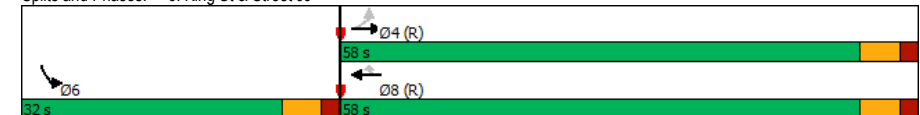
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.29	0.34	
Control Delay	6.6	7.1	
Queue Delay	0.0	0.0	
Total Delay	6.6	7.1	
LOS	A	A	
Approach Delay	6.6	7.1	
Approach LOS	A	A	

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: 0.34
 Intersection Signal Delay: 6.9
 Intersection Capacity Utilization 51.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FBPh1 2031 Without Improvements
Morning Peak Hour

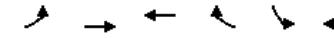


Lane Group	EBT	WBT
Lane Group Flow (vph)	394	467
v/c Ratio	0.29	0.34
Control Delay	6.6	7.1
Queue Delay	0.0	0.0
Total Delay	6.6	7.1
Queue Length 50th (m)	12.6	15.7
Queue Length 95th (m)	50.1	61.5
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1361	1361
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.29	0.34

Intersection Summary

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

FBPh1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	0	394	467	0	0	0
Future Volume (vph)	0	394	467	0	0	0
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			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Flpb, ped/bikes		1.00	1.00			
Fr t		1.00	1.00			
Fl t Protected		1.00	1.00			
Satd. Flow (prot)		1883	1883			
Fl 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	394	467	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	394	467	0	0	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)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		1362	1362			
v/s Ratio Prot		0.21	0.25			
v/s Ratio Perm						
v/c Ratio		0.29	0.34			
Uniform Delay, d1		4.4	4.6			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.5	0.7			
Delay (s)		4.9	5.3			
Level of Service		A	A			
Approach Delay (s)		4.9	5.3		0.0	
Approach LOS		A	A		A	

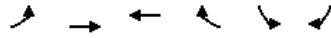
Intersection Summary

HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FBPh1 2031 Without Improvements
Morning Peak Hour



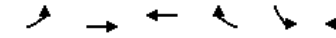
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
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

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

FBPh1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	394	467	0	0	0
Future Volume (Veh/h)	0	394	467	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	394	467	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.92				0.94	0.92
vC, conflicting volume	517				961	567
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	428				836	483
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	993				289	491
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	394	467	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.23	0.27	0.05	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			42.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FBPh1 2031 Without Improvements
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	1821	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

FBPh1 2031 Without Improvements
Morning Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	166	646	
Future Volume (vph)	166	646	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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

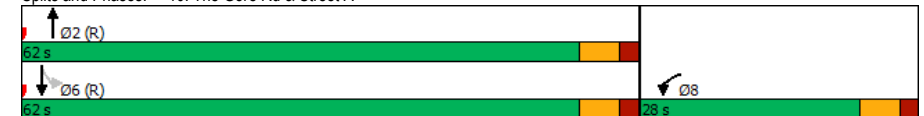
Lead-Lag Optimize?

Recall Mode	C-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.10	0.40	
Control Delay	4.4	6.2	
Queue Delay	0.0	0.0	
Total Delay	4.4	6.2	
LOS	A	A	
Approach Delay	4.4	6.2	
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: 0.40
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 59.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

FBPh1 2031 Without Improvements
Morning Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	166	646
v/c Ratio	0.10	0.40
Control Delay	4.4	6.2
Queue Delay	0.0	0.0
Total Delay	4.4	6.2
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	19.4	89.1
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1598	1598
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.10	0.40

Intersection Summary

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

FBPh1 2031 Without Improvements
Morning Peak Hour

	↙	↘	↑	↗	↖	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↖	↓
Traffic Volume (vph)	0	0	166	0	0	646
Future Volume (vph)	0	0	166	0	0	646
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Fr t			1.00			1.00
Fl t Protected			1.00			1.00
Satd. Flow (prot)			1883			1883
Fl 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	166	0	0	646
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	166	0	0	646
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)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1447			1447
v/s Ratio Prot			0.09			c0.34
v/s Ratio Perm						
v/c Ratio			0.11			0.45
Uniform Delay, d1			2.6			3.7
Progression Factor			1.00			1.00
Incremental Delay, d2			0.2			1.0
Delay (s)			2.8			4.7
Level of Service			A			A
Approach Delay (s)	0.0		2.8			4.7
Approach LOS	A		A			A
Intersection Summary						
HCM 2000 Control Delay			4.3		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			59.7%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics

FBPh1 2031 Without Improvements

48: Humber Station Rd & Street E

Morning Peak Hour



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		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												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	1883	1883	0	1883	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	1883	1883	0	1883	1883	0
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

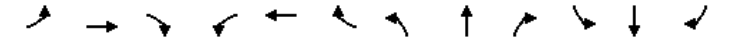
Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

FBPh1 2031 Without Improvements

48: Humber Station Rd & Street E

Morning Peak Hour



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	0	0	0	0	0	0	29	0	0	81	0
Future Volume (vph)	0	0	0	0	0	0	0	29	0	0	81	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	0	0	0	0	0	0	29	0	0	81	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	0	0	0	29	0	81						
Volume Left (vph)	0	0	0	0	0	0						
Volume Right (vph)	0	0	0	0	0	0						
Hadj (s)	0.00	0.00	0.00	0.03	0.00	0.03						
Departure Headway (s)	4.2	4.2	4.6	4.6	4.5	4.6						
Degree Utilization, x	0.00	0.00	0.00	0.04	0.00	0.10						
Capacity (veh/h)	845	845	796	772	803	779						
Control Delay (s)	7.2	7.2	6.4	6.6	6.3	6.9						
Approach Delay (s)	0.0	0.0	6.6		6.9							
Approach LOS	A	A	A		A							

Intersection Summary

Delay	6.8
Level of Service	A
Intersection Capacity Utilization	7.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
58: Humber Station Rd & Street Y

FBPh1 2031 Without Improvements
Morning Peak Hour



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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	1883	1883	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8		194.3	154.4		
Travel Time (s)	5.9		14.0	11.1		
Intersection Summary						

Area Type: Other

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

FBPh1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	0	0	29	81	0
Future Volume (vph)	0	0	0	29	81	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	29	81	0
Direction, Lane #						
	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	0	0	29	81		
Volume Left (vph)	0	0	0	0		
Volume Right (vph)	0	0	0	0		
Hadj (s)	0.00	0.00	0.03	0.03		
Departure Headway (s)	4.1	4.5	4.6	4.1		
Degree Utilization, x	0.00	0.00	0.04	0.09		
Capacity (veh/h)	849	797	772	880		
Control Delay (s)	7.1	6.3	6.6	7.5		
Approach Delay (s)	0.0	6.6	7.5			
Approach LOS	A	A	A			
Intersection Summary						
Delay			7.2			
Level of Service			A			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
64: Street JJ & Street Y

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				0.0%				ICU Level of Service				A
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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												
Friction												
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

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				29.6%				ICU Level of Service			A	
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
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)		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

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	851	724	875	756	724	975	1490			1490		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay								0.0				
Intersection Capacity Utilization								29.6%		ICU Level of Service		A
Analysis Period (min)								15				

Lanes and Geometrics
85: Street I & Street EE

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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)		275.5			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

FBPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	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)												
pX, platoon unblocked												
vC, conflicting volume	100	100	100	100	100	100	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	100	100	100	100	100	100	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	756	724	875	756	724	875	1490			1490		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				0.0								
Intersection Capacity Utilization			29.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FBPh1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
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

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

FBPh1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	29	81	0
Future Volume (Veh/h)	0	0	0	29	81	0
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	0	0	29	81	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)				347		
pX, platoon unblocked						
vC, conflicting volume	210	181	131			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	210	181	131			
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	100	100			
cM capacity (veh/h)	713	789	1392			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	29	81			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1392	1700			
Volume to Capacity	0.00	0.00	0.05			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

Future Background 2031 Ph1
Afternoon Peak Hour

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	0.96		0.86	0.94		0.86	0.90		0.86	0.95		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1555	1697	1812	1617	1765	1902	1601	1747	1847	1526
Flt Permitted	0.380			0.524			0.650			0.216		
Satd. Flow (perm)	665	1812	1334	879	1812	1386	1083	1902	1373	377	1847	1309
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			69			69			69
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

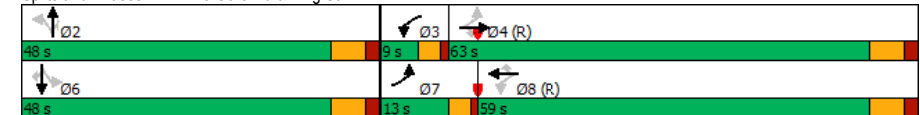
Future Background 2031 Ph1
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
Future Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
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)	13.0	63.0	63.0	9.0	59.0	59.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	10.8%	52.5%	52.5%	7.5%	49.2%	49.2%	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)	79.8	73.0	73.0	72.2	63.7	63.7	29.6	29.6	29.6	29.6	29.6	29.6
Actuated g/C Ratio	0.66	0.61	0.61	0.60	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.28	0.36	0.02	0.02	0.47	0.13	0.21	0.81	0.07	0.41	0.30	0.15
Control Delay	9.9	15.2	0.1	9.3	21.7	7.6	35.5	55.9	0.4	49.4	36.9	6.1
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	9.9	15.2	0.1	9.3	21.7	7.6	35.5	55.9	0.4	49.4	36.9	6.1
LOS	A	B	A	A	C	A	D	E	A	D	D	A
Approach Delay		13.3			18.9			50.1				31.4
Approach LOS		B			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: 0.81
 Intersection Signal Delay: 26.7
 Intersection Capacity Utilization 87.5%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
1: The Gore Rd & King St

Future Background 2031 Ph1
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	148	398	20	14	454	101	57	381	28	38	137	57	
v/c Ratio	0.28	0.36	0.02	0.02	0.47	0.13	0.21	0.81	0.07	0.41	0.30	0.15	
Control Delay	9.9	15.2	0.1	9.3	21.7	7.6	35.5	55.9	0.4	49.4	36.9	6.1	
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	9.9	15.2	0.1	9.3	21.7	7.6	35.5	55.9	0.4	49.4	36.9	6.1	
Queue Length 50th (m)	12.2	41.3	0.0	1.1	66.6	3.6	11.2	88.2	0.0	7.8	27.4	0.0	
Queue Length 95th (m)	25.4	90.1	0.0	4.2	117.9	15.5	20.9	112.8	0.0	18.2	41.0	7.6	
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
Base Capacity (vph)	532	1102	838	568	964	770	373	656	518	130	637	496	
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	0.28	0.36	0.02	0.02	0.47	0.13	0.15	0.58	0.05	0.29	0.22	0.11	

Intersection Summary

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

Future Background 2031 Ph1
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
Future Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
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	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	0.98	1.00	1.00	0.96	1.00	1.00	0.90	1.00	1.00	0.95	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)	1704	1812	1334	1637	1812	1386	1586	1902	1373	1666	1847	1309
Flt Permitted	0.38	1.00	1.00	0.52	1.00	1.00	0.65	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	681	1812	1334	903	1812	1386	1085	1902	1373	379	1847	1309
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	398	20	14	454	101	57	381	28	38	137	57
RTOR Reduction (vph)	0	0	8	0	0	32	0	0	21	0	0	43
Lane Group Flow (vph)	148	398	12	14	454	69	57	381	7	38	137	14
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	6%	5%	4%	6%	1%	0%	1%	2%	1%	4%	7%
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)	77.2	70.7	70.7	66.2	63.7	63.7	29.6	29.6	29.6	29.6	29.6	29.6
Effective Green, g (s)	77.2	70.7	70.7	66.2	63.7	63.7	29.6	29.6	29.6	29.6	29.6	29.6
Actuated g/C Ratio	0.64	0.59	0.59	0.55	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
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)	519	1067	785	513	961	735	267	469	338	93	455	322
v/s Ratio Prot	c0.02	0.22		0.00	c0.25			c0.20			0.07	
v/s Ratio Perm	0.16		0.01	0.01		0.05	0.05		0.01	0.10		0.01
v/c Ratio	0.29	0.37	0.02	0.03	0.47	0.09	0.21	0.81	0.02	0.41	0.30	0.04
Uniform Delay, d1	9.7	13.0	10.2	12.2	17.6	13.9	35.9	42.6	34.2	37.9	36.8	34.4
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	0.3	1.0	0.0	0.0	1.7	0.3	0.4	10.3	0.0	2.9	0.4	0.1
Delay (s)	10.0	14.0	10.3	12.2	19.3	14.1	36.3	52.9	34.2	40.8	37.2	34.5
Level of Service	B	B	B	B	B	B	D	D	C	D	D	C
Approach Delay (s)	12.8			18.2				49.7			37.1	
Approach LOS	B			B				D			D	

Intersection Summary

HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Background 2031 Ph1

Afternoon Peak Hour

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		0	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		0.86	0.95	0.99		0.88	0.93		0.90	0.95	
Frt			0.850		0.988			0.929			0.952	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1865	1512	1379	1769	0	1665	1588	0	1713	1711	0
Flt Permitted	0.407			0.402			0.590			0.666		
Satd. Flow (perm)	706	1865	1297	557	1769	0	912	1588	0	1080	1711	0
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			102		5		35			9		
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

Future Background 2031 Ph1

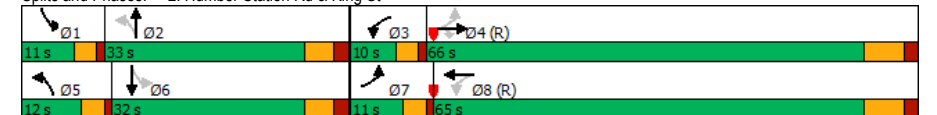
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	7	483	24	18	469	71	75	14	19
Future Volume (vph)	7	483	24	18	469	71	75	14	19
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	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	11.2	30.2	11.0	30.2
Total Split (s)	11.0	66.0	66.0	10.0	65.0	12.0	33.0	11.0	32.0
Total Split (%)	9.2%	55.0%	55.0%	8.3%	54.2%	10.0%	27.5%	9.2%	26.7%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	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	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	4.0	6.2	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	80.6	74.8	74.8	82.0	77.1	29.4	22.9	22.3	18.2
Actuated g/C Ratio	0.67	0.62	0.62	0.68	0.64	0.24	0.19	0.19	0.15
v/c Ratio	0.01	0.42	0.03	0.04	0.45	0.24	0.43	0.06	0.10
Control Delay	10.0	16.7	0.0	9.7	15.5	33.8	34.7	29.1	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	16.7	0.0	9.7	15.5	33.8	34.7	29.1	31.9
LOS	A	B	A	A	B	C	C	C	C
Approach Delay		15.8			15.3		34.4		30.9
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: 0.45
 Intersection Signal Delay: 19.2
 Intersection Capacity Utilization 57.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
2: Humber Station Rd & King St

Future Background 2031 Ph1
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	483	24	18	510	71	143	14	28
v/c Ratio	0.01	0.42	0.03	0.04	0.45	0.24	0.43	0.06	0.10
Control Delay	10.0	16.7	0.0	9.7	15.5	33.8	34.7	29.1	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	16.7	0.0	9.7	15.5	33.8	34.7	29.1	31.9
Queue Length 50th (m)	0.5	51.7	0.0	1.3	56.1	13.6	21.8	2.6	4.2
Queue Length 95th (m)	2.8	118.9	0.0	5.1	127.6	22.5	41.0	6.9	12.1
Internal Link Dist (m)	305.7				816.4		324.5		323.2
Turn Bay Length (m)	50.0		25.0	50.0				50.0	
Base Capacity (vph)	535	1178	857	423	1144	295	394	242	374
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	0.01	0.41	0.03	0.04	0.45	0.24	0.36	0.06	0.07

Intersection Summary

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

Future Background 2031 Ph1
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	9
Future Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	9
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	6.2	4.0	6.2	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	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.86	1.00	0.99	1.00	0.93	1.00	0.93	1.00	0.95	1.00
Frbp, ped/bikes	0.98	1.00	1.00	0.98	1.00	0.94	1.00	0.93	1.00	0.93	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.99	1.00	0.93	1.00	0.93	1.00	0.95	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1682	1865	1297	1355	1769	1769	1561	1587	1600	1711	1600	1711
Flt Permitted	0.41	1.00	1.00	0.40	1.00	1.00	0.59	1.00	0.67	1.00	0.67	1.00
Satd. Flow (perm)	720	1865	1297	573	1769	1769	969	1587	1121	1711	1121	1711
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	483	24	18	469	41	71	75	68	14	19	9
RTOR Reduction (vph)	0	0	10	0	2	0	0	28	0	0	8	0
Lane Group Flow (vph)	7	483	14	18	508	0	71	115	0	14	20	0
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	3%	3%	8%	28%	6%	7%	6%	1%	9%	3%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA	pm+pt	NA	NA
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	71.1	69.9	69.9	74.3	71.5		29.7	22.9		18.6	15.8	
Effective Green, g (s)	71.1	69.9	69.9	74.3	71.5		29.7	22.9		18.6	15.8	
Actuated g/C Ratio	0.59	0.58	0.58	0.62	0.60		0.25	0.19		0.16	0.13	
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4		4.0	6.2		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	
Lane Grp Cap (vph)	436	1086	755	373	1054		288	302		184	225	
v/s Ratio Prot	0.00	0.26		c0.00	c0.29		c0.02	c0.07		0.00	0.01	
v/s Ratio Perm	0.01		0.01	0.03			0.04			0.01		
v/c Ratio	0.02	0.44	0.02	0.05	0.48		0.25	0.38		0.08	0.09	
Uniform Delay, d1	10.4	14.1	10.6	9.5	13.7		35.7	42.4		43.2	45.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.3	0.0	0.1	1.6		0.4	0.8		0.2	0.2	
Delay (s)	10.5	15.4	10.6	9.5	15.3		36.1	43.2		43.4	46.0	
Level of Service	B	B	B	A	B		D	D		D	D	
Approach Delay (s)	15.1			15.1			40.8			45.1		
Approach LOS	B			B			D			D		

Intersection Summary

HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

Future Background 2031 Ph1
Afternoon Peak Hour

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	1
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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	1921
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	1921
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

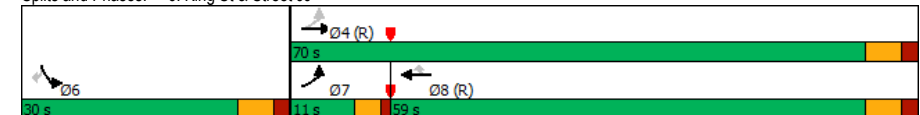
Future Background 2031 Ph1
Afternoon Peak Hour

Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	→	←		
Traffic Volume (vph)	470	579		
Future Volume (vph)	470	579		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.29	0.35		
Control Delay	5.1	5.7		
Queue Delay	0.0	0.0		
Total Delay	5.1	5.7		
LOS	A	A		
Approach Delay	5.1	5.7		
Approach LOS	A	A		

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: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 5.4
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Background 2031 Ph1
Afternoon Peak Hour

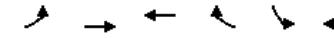


Lane Group	EBT	WBT
Lane Group Flow (vph)	470	579
v/c Ratio	0.29	0.35
Control Delay	5.1	5.7
Queue Delay	0.0	0.0
Total Delay	5.1	5.7
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	59.7	78.2
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1644	1644
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.29	0.35

Intersection Summary

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

Future Background 2031 Ph1
Afternoon Peak Hour



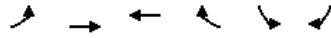
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	0	470	579	0	0	0
Future Volume (vph)	0	470	579	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frpl, ped/bikes		1.00	1.00			
Frnt		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1921	1921			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1921	1921			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	470	579	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	470	579	0	0	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		1506	1506			
v/s Ratio Prot		0.24	c0.30			
v/s Ratio Perm						
v/c Ratio		0.31	0.38			
Uniform Delay, d1		3.1	3.3			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.5	0.7			
Delay (s)		3.6	4.1			
Level of Service		A	A			
Approach Delay (s)		3.6	4.1		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Background 2031 Ph1
Afternoon Peak Hour



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						
Fr						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	0
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

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

Future Background 2031 Ph1
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	0	470	579	0	0	0
Future Volume (Veh/h)	0	470	579	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	470	579	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.85				0.88	0.85
vC, conflicting volume	629				1149	679
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	479				979	537
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	893				224	429
Direction, Lane #						
	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	470	579	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.28	0.34	0.05	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Background 2031 Ph1
Afternoon Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	0	0	1921
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

Future Background 2031 Ph1
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Volume (veh/h)	0	0	678	0	0	250
Future Volume (Veh/h)	0	0	678	0	0	250
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	0	678	0	0	250
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	0.85	0.85			0.85	
vC, conflicting volume	1028	778			728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	944	650			591	
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	100			100	
cM capacity (veh/h)	228	368			809	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	0	678	250			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.40	0.15			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Background 2031 Ph1
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	0	1858	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

Future Background 2031 Ph1
Afternoon Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	678	250	
Future Volume (vph)	678	250	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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

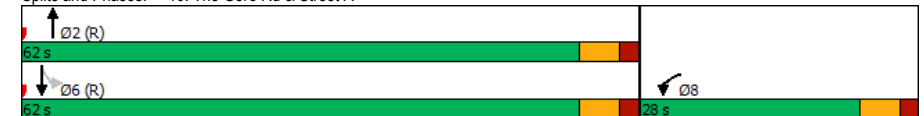
Lead-Lag Optimize?

Recall Mode	C-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.42	0.15	
Control Delay	6.6	4.5	
Queue Delay	0.0	0.0	
Total Delay	6.6	4.5	
LOS	A	A	
Approach Delay	6.6	4.5	
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: 0.42
 Intersection Signal Delay: 6.0
 Intersection Capacity Utilization 61.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

Future Background 2031 Ph1
Afternoon Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	678	250
v/c Ratio	0.42	0.15
Control Delay	6.6	4.5
Queue Delay	0.0	0.0
Total Delay	6.6	4.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	80.8	28.4
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1631	1631
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.42	0.15

Intersection Summary

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

Future Background 2031 Ph1
Afternoon Peak Hour

	↙	↘	↑	↗	↖	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↖	↓
Traffic Volume (vph)	0	0	678	0	0	250
Future Volume (vph)	0	0	678	0	0	250
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frnt			1.00			1.00
Flt Protected			1.00			1.00
Satd. Flow (prot)			1921			1921
Flt Permitted			1.00			1.00
Satd. Flow (perm)			1921			1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	678	0	0	250
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	678	0	0	250
Confl. Peds. (#/hr)	50	50	50	50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1477			1477
v/s Ratio Prot			c0.35			0.13
v/s Ratio Perm						
v/c Ratio			0.46			0.17
Uniform Delay, d1			3.7			2.8
Progression Factor			1.07			1.00
Incremental Delay, d2			1.0			0.2
Delay (s)			4.9			3.0
Level of Service			A			A
Approach Delay (s)	0.0		4.9			3.0
Approach LOS	A		A			A

Intersection Summary

HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

Future Background 2031 Ph1

48: Humber Station Rd & Street E

Afternoon Peak Hour



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		0	1		0
Taper Length (m)	7.5		7.5		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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	1921	1921	0	1921	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	1921	1921	0	1921	1921	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.8			126.7			153.0			361.4	
Travel Time (s)		10.0			9.1			11.0			26.0	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

Future Background 2031 Ph1

48: Humber Station Rd & Street E

Afternoon Peak Hour



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	0	0	0	0	0	0	123	0	0	42	0
Future Volume (vph)	0	0	0	0	0	0	0	123	0	0	42	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	0	0	0	0	0	0	123	0	0	42	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	0	0	0	123	0	42						
Volume Left (vph)	0	0	0	0	0	0						
Volume Right (vph)	0	0	0	0	0	0						
Hadj (s)	0.00	0.00	0.00	0.00	0.00	0.00						
Departure Headway (s)	4.3	4.3	4.5	4.5	4.6	4.6						
Degree Utilization, x	0.00	0.00	0.00	0.15	0.00	0.05						
Capacity (veh/h)	812	812	801	784	791	773						
Control Delay (s)	7.3	7.3	6.3	7.2	6.4	6.6						
Approach Delay (s)	0.0	0.0	7.2		6.6							
Approach LOS	A	A	A		A							

Intersection Summary

Delay	7.0
Level of Service	A
Intersection Capacity Utilization	30.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
58: Humber Station Rd & Street Y

Future Background 2031 Ph1
Afternoon Peak Hour



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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	1921	1921	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	153.0	
Travel Time (s)	5.9			14.0	11.0	
Intersection Summary						

Area Type: Other

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


Future Background 2031 Ph1
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	0	0	117	41	0
Future Volume (vph)	0	0	0	117	41	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	117	41	0
Direction, Lane #						
	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	0	0	117	41		
Volume Left (vph)	0	0	0	0		
Volume Right (vph)	0	0	0	0		
Hadj (s)	0.00	0.00	0.00	0.00		
Departure Headway (s)	4.3	4.5	4.5	4.1		
Degree Utilization, x	0.00	0.00	0.15	0.05		
Capacity (veh/h)	818	801	784	866		
Control Delay (s)	7.3	6.3	7.1	7.3		
Approach Delay (s)	0.0	7.1		7.3		
Approach LOS	A	A		A		
Intersection Summary						
Delay			7.2			
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

Future Background 2031 Ph1
Afternoon Peak Hour




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	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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph1
Afternoon Peak Hour



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	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	0.0
Level of Service	A
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

Future Background 2031 Ph1
Afternoon Peak Hour

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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph1
Afternoon Peak Hour

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	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				29.6%				ICU Level of Service			A	
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

Future Background 2031 Ph1
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph1
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	855	727	881	760	727	980	1502			1502		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay								0.0				
Intersection Capacity Utilization								29.6%	ICU Level of Service		A	
Analysis Period (min)								15				

Lanes and Geometrics
85: Street I & Street EE

Future Background 2031 Ph1
Afternoon Peak Hour

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	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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph1
Afternoon Peak Hour

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	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	0.0
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

Future Background 2031 Ph1
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
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

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

Future Background 2031 Ph1
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	123	42	0
Future Volume (Veh/h)	0	0	0	123	42	0
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	0	0	123	42	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)				347		
pX, platoon unblocked						
vC, conflicting volume	265	142	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	265	142	92			
tC, single (s)	6.4	6.2	4.1			
iC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	667	835	1451			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	123	42			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1451	1700			
Volume to Capacity	0.00	0.00	0.02			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			14.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

FBPh1 2031 Without Improvements
Afternoon Peak Hour

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		0.94	0.97		0.91	0.99		0.96	0.96	
Frt		0.993			0.973			0.990			0.956	
Flt Protected	0.950			0.950			0.950		0.950			
Satd. Flow (prot)	1562	1728	0	1681	1709	0	1261	1865	0	1681	1760	0
Flt Permitted	0.299			0.505			0.550		0.191			
Satd. Flow (perm)	492	1728	0	839	1709	0	665	1865	0	323	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			12				3			18
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

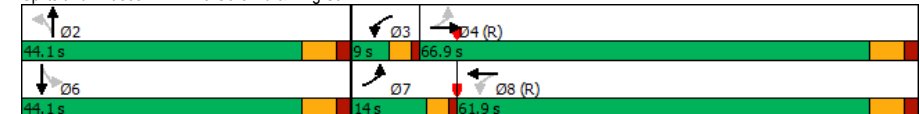
FBPh1 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	398	14	454	57	381	38	137
Future Volume (vph)	148	398	14	454	57	381	38	137
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)	14.0	66.9	9.0	61.9	44.1	44.1	44.1	44.1
Total Split (%)	11.7%	55.8%	7.5%	51.6%	36.8%	36.8%	36.8%	36.8%
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)	78.5	72.1	70.7	62.6	30.9	30.9	30.9	30.9
Actuated g/C Ratio	0.65	0.60	0.59	0.52	0.26	0.26	0.26	0.26
v/c Ratio	0.37	0.40	0.03	0.62	0.33	0.85	0.46	0.42
Control Delay	11.6	16.0	9.4	25.2	40.0	58.3	54.5	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	16.0	9.4	25.2	40.0	58.3	54.5	35.1
LOS	B	B	A	C	D	E	D	D
Approach Delay		14.8		24.8		56.1		38.3
Approach LOS		B		C		E		D

Intersection Summary

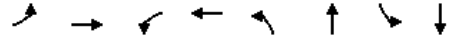
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 31.4
 Intersection Capacity Utilization 96.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
1: The Gore Rd & King St

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	418	14	555	57	409	38	194
v/c Ratio	0.37	0.40	0.03	0.62	0.33	0.85	0.46	0.42
Control Delay	11.6	16.0	9.4	25.2	40.0	58.3	54.5	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	16.0	9.4	25.2	40.0	58.3	54.5	35.1
Queue Length 50th (m)	13.0	46.4	1.1	92.5	11.3	94.1	7.8	35.6
Queue Length 95th (m)	25.3	92.9	4.1	146.8	22.8	123.9	19.3	53.5
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)	413	1039	533	897	207	585	100	563
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	0.36	0.40	0.03	0.62	0.28	0.70	0.38	0.34

Intersection Summary

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
Future Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
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	0.97		1.00	0.99		1.00	0.96	
Frpb, ped/bikes	0.99	1.00		0.97	1.00		0.91	1.00		0.96	1.00	
Frt	1.00	0.99		1.00	0.97		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)	1550	1727		1626	1708		1151	1865		1610	1760	
Flt Permitted	0.30	1.00		0.51	1.00		0.55	1.00		0.19	1.00	
Satd. Flow (perm)	487	1727		865	1708		666	1865		324	1760	
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	398	20	14	454	101	57	381	28	38	137	57
RTOR Reduction (vph)	0	1	0	0	6	0	0	2	0	0	13	0
Lane Group Flow (vph)	148	417	0	14	549	0	57	407	0	38	181	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)	75.9	69.7		64.8	62.6		30.9	30.9		30.9	30.9	
Effective Green, g (s)	75.9	69.7		64.8	62.6		30.9	30.9		30.9	30.9	
Actuated g/C Ratio	0.63	0.58		0.54	0.52		0.26	0.26		0.26	0.26	
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)	390	1003		481	891		171	480		83	453	
v/s Ratio Prot	c0.03	0.24		0.00	c0.32			c0.22			0.10	
v/s Ratio Perm	0.21			0.02			0.09			0.12		
v/c Ratio	0.38	0.42		0.03	0.62		0.33	0.85		0.46	0.40	
Uniform Delay, d1	11.7	13.9		12.8	20.2		36.2	42.3		37.5	36.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	1.3		0.0	3.2		1.2	13.0		4.0	0.6	
Delay (s)	12.3	15.2		12.8	23.4		37.3	55.3		41.5	37.4	
Level of Service	B	B		B	C		D	E		D	D	
Approach Delay (s)		14.4			23.2			53.1			38.1	
Approach LOS		B			C			D			D	

Intersection Summary

HCM 2000 Control Delay	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FBPh1 2031 Without Improvements
Afternoon Peak Hour

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			0.92			0.94	
Frt		0.994			0.990			0.957			0.971	
Flt Protected		0.999			0.998			0.984			0.984	
Satd. Flow (prot)	0	1743	0	0	1795	0	0	1229	0	0	1450	0
Flt Permitted		0.993			0.976			0.873			0.888	
Satd. Flow (perm)	0	1732	0	0	1752	0	0	1047	0	0	1268	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			20			9	
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

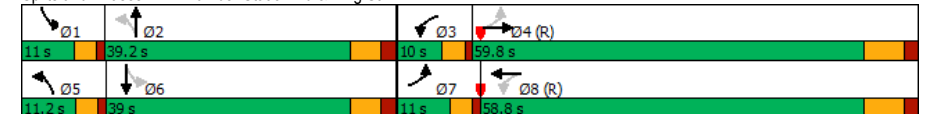
FBPh1 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	7	483	18	469	71	75	14	19
Future Volume (vph)	7	483	18	469	71	75	14	19
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	59.8	10.0	58.8	11.2	39.2	11.0	39.0
Total Split (%)	9.2%	49.8%	8.3%	49.0%	9.3%	32.7%	9.2%	32.5%
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)		79.1		79.1		27.3		27.3
Actuated g/C Ratio		0.66		0.66		0.23		0.23
v/c Ratio		0.45		0.46		0.85		0.14
Control Delay		12.8		12.9		66.9		28.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		12.8		12.9		66.9		28.5
LOS		B		B		E		C
Approach Delay		12.8		12.9		66.9		28.5
Approach LOS		B		B		E		C

Intersection Summary

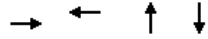
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 22.2
 Intersection Capacity Utilization 68.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
2: Humber Station Rd & King St

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	514	528	214	42
v/c Ratio	0.45	0.46	0.85	0.14
Control Delay	12.8	12.9	66.9	28.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.8	12.9	66.9	28.5
Queue Length 50th (m)	56.1	57.8	45.9	6.4
Queue Length 95th (m)	102.4	105.4	68.8	14.5
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1143	1157	310	364
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.45	0.46	0.69	0.12

Intersection Summary

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour



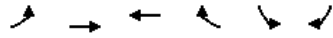
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	9
Future Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	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			0.95			0.97	
Flpb, ped/bikes		1.00			1.00			0.96			0.98	
Frt		0.99			0.99			0.96			0.97	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		1742			1791			1180			1414	
Flt Permitted		0.99			0.98			0.87			0.89	
Satd. Flow (perm)		1731			1751			1048			1277	
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	483	24	18	469	41	71	75	68	14	19	9
RTOR Reduction (vph)	0	1	0	0	2	0	0	15	0	0	7	0
Lane Group Flow (vph)	0	513	0	0	526	0	0	199	0	0	35	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)		79.1			79.1			27.3			27.3	
Effective Green, g (s)		79.1			79.1			27.3			27.3	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
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)		1141			1154			238			290	
v/s Ratio Prot												
v/s Ratio Perm		0.30			c0.30			c0.19			0.03	
v/c Ratio		0.45			0.46			0.83			0.12	
Uniform Delay, d1		9.9			10.0			44.2			36.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.3			21.5			0.2	
Delay (s)		10.2			10.3			65.7			37.0	
Level of Service		B			B			E			D	
Approach Delay (s)		10.2			10.3			65.7			37.0	
Approach LOS		B			B			E			D	

Intersection Summary

HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FBPh1 2031 Without Improvements
Afternoon Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

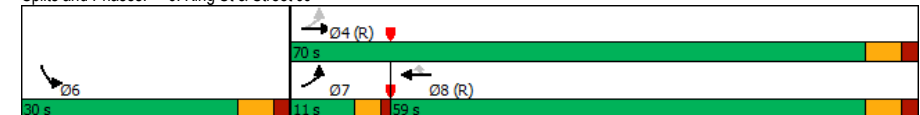


Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↑	↑		
Traffic Volume (vph)	470	579		
Future Volume (vph)	470	579		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.29	0.36		
Control Delay	5.2	5.7		
Queue Delay	0.0	0.0		
Total Delay	5.2	5.7		
LOS	A	A		
Approach Delay	5.2	5.7		
Approach LOS	A	A		

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: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 5.5
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FBPh1 2031 Without Improvements
Afternoon Peak Hour

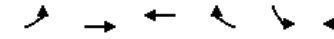


Lane Group	EBT	WBT
Lane Group Flow (vph)	470	579
v/c Ratio	0.29	0.36
Control Delay	5.2	5.7
Queue Delay	0.0	0.0
Total Delay	5.2	5.7
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	60.4	79.2
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1612	1612
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.29	0.36

Intersection Summary

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	470	579	0	0	0
Future Volume (vph)	0	470	579	0	0	0
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			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Flpb, ped/bikes		1.00	1.00			
Fr t		1.00	1.00			
Fl t Protected		1.00	1.00			
Satd. Flow (prot)		1883	1883			
Fl t 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	470	579	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	470	579	0	0	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)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		1476	1476			
v/s Ratio Prot		0.25	c0.31			
v/s Ratio Perm						
v/c Ratio		0.32	0.39			
Uniform Delay, d1		3.1	3.4			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.6	0.8			
Delay (s)		3.7	4.2			
Level of Service		A	A			
Approach Delay (s)		3.7	4.2		0.0	
Approach LOS		A	A		A	

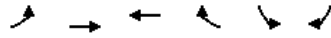
Intersection Summary

HCM 2000 Control Delay		3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio		0.37		
Actuated Cycle Length (s)		100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization		57.5%	ICU Level of Service	B
Analysis Period (min)		15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FBPh1 2031 Without Improvements
Afternoon Peak Hour



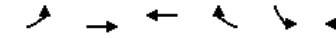
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
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

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	470	579	0	0	0
Future Volume (Veh/h)	0	470	579	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	470	579	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.88				0.90	0.88
vC, conflicting volume	629				1149	679
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	511				996	568
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	889				224	422
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	470	579	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.28	0.34	0.05	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	1821	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	678	250	
Future Volume (vph)	678	250	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.42	0.16	
Control Delay	6.5	4.5	
Queue Delay	0.0	0.0	
Total Delay	6.5	4.5	
LOS	A	A	
Approach Delay	6.5	4.5	
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:	0.42		
Intersection Signal Delay:	5.9	Intersection LOS: A	
Intersection Capacity Utilization	61.3%	ICU Level of Service B	
Analysis Period (min)	15		

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:	0.42		
Intersection Signal Delay:	5.9	Intersection LOS: A	
Intersection Capacity Utilization	61.3%	ICU Level of Service B	
Analysis Period (min)	15		

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



Queues
10: The Gore Rd & Street A

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	678	250
v/c Ratio	0.42	0.16
Control Delay	6.5	4.5
Queue Delay	0.0	0.0
Total Delay	6.5	4.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	96.2	28.6
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1598	1598
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.42	0.16

Intersection Summary

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	↙	↘	↑	↗	↖	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↖	↓
Traffic Volume (vph)	0	0	678	0	0	250
Future Volume (vph)	0	0	678	0	0	250
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frnt			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	678	0	0	250
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	678	0	0	250
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)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1447			1447
v/s Ratio Prot			0.36			0.13
v/s Ratio Perm						
v/c Ratio			0.47			0.17
Uniform Delay, d1			3.8			2.8
Progression Factor			1.00			1.00
Incremental Delay, d2			1.1			0.3
Delay (s)			4.8			3.0
Level of Service			A			A
Approach Delay (s)	0.0		4.8			3.0
Approach LOS	A		A			A

Intersection Summary

HCM 2000 Control Delay	4.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

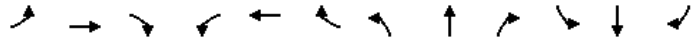
c Critical Lane Group

Lanes and Geometrics

FBPh1 2031 Without Improvements

48: Humber Station Rd & Street E

Afternoon Peak Hour



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		0	1		0
Taper Length (m)	7.5		7.5		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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1883	0	0	1883	0	1883	1883	0	1883	1883	0
Flt Permitted												
Satd. Flow (perm)	0	1883	0	0	1883	0	1883	1883	0	1883	1883	0
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

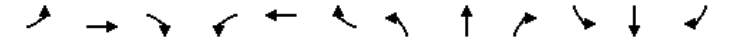
Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

FBPh1 2031 Without Improvements

48: Humber Station Rd & Street E

Afternoon Peak Hour



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	0	0	0	0	0	0	123	0	0	42	0
Future Volume (vph)	0	0	0	0	0	0	0	123	0	0	42	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	0	0	0	0	0	0	123	0	0	42	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	0	0	0	123	0	42						
Volume Left (vph)	0	0	0	0	0	0						
Volume Right (vph)	0	0	0	0	0	0						
Hadj (s)	0.00	0.00	0.00	0.03	0.00	0.03						
Departure Headway (s)	4.3	4.3	4.5	4.6	4.6	4.6						
Degree Utilization, x	0.00	0.00	0.00	0.16	0.00	0.05						
Capacity (veh/h)	812	812	801	778	791	767						
Control Delay (s)	7.3	7.3	6.3	7.2	6.4	6.7						
Approach Delay (s)	0.0	0.0	7.2		6.7							
Approach LOS	A	A	A		A							

Intersection Summary

Delay	7.1
Level of Service	A
Intersection Capacity Utilization	9.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
58: Humber Station Rd & Street Y

FBPh1 2031 Without Improvements
Afternoon Peak Hour



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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	1883	1883	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	154.4	
Travel Time (s)	5.9			14.0	11.1	
Intersection Summary						

Area Type: Other

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	0	0	117	41	0
Future Volume (vph)	0	0	0	117	41	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	0	117	41	0
Direction, Lane #						
	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	0	0	117	41		
Volume Left (vph)	0	0	0	0		
Volume Right (vph)	0	0	0	0		
Hadj (s)	0.00	0.00	0.03	0.03		
Departure Headway (s)	4.3	4.5	4.6	4.2		
Degree Utilization, x	0.00	0.00	0.15	0.05		
Capacity (veh/h)	818	801	778	859		
Control Delay (s)	7.3	6.3	7.2	7.4		
Approach Delay (s)	0.0	7.2		7.4		
Approach LOS	A	A		A		
Intersection Summary						
Delay			7.2			
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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Friction												
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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				0.0%				ICU Level of Service				A
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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												
Friction												
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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	0	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	917	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				0.0								
Level of Service				A								
Intersection Capacity Utilization				29.6%				ICU Level of Service			A	
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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)		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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	851	724	875	756	724	975	1490			1490		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay								0.0				
Intersection Capacity Utilization								29.6%		ICU Level of Service		A
Analysis Period (min)								15				

Lanes and Geometrics
85: Street I & Street EE

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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)		275.5			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

FBPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	0	0	0	0	0	0	0	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	0	0	0	0	0	0	0	0	0	0	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)												
pX, platoon unblocked												
vC, conflicting volume	100	100	100	100	100	100	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	100	100	100	100	100	100	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	756	724	875	756	724	875	1490			1490		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	1700	1700	1700								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay							0.0					
Intersection Capacity Utilization							29.6%		ICU Level of Service		A	
Analysis Period (min)							15					

Lanes and Geometrics
88: Humber Station Rd & Street EE

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
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

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

FBPh1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	123	42	0
Future Volume (Veh/h)	0	0	0	123	42	0
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	0	0	123	42	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)				347		
pX, platoon unblocked						
vC, conflicting volume	265	142	92			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	265	142	92			
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	100	100			
cM capacity (veh/h)	663	830	1438			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	123	42			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1438	1700			
Volume to Capacity	0.00	0.00	0.02			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			14.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

Future Total Phase 1 2031
Morning Peak Hour

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	0.94		0.86	0.95		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)	1697	1762	1570	1697	1762	1484	1765	1779	1541	1713	1921	1633
Flt Permitted	0.496			0.511			0.221			0.710		
Satd. Flow (perm)	828	1762	1346	856	1762	1273	389	1779	1321	1136	1921	1400
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			171		33		85					116
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

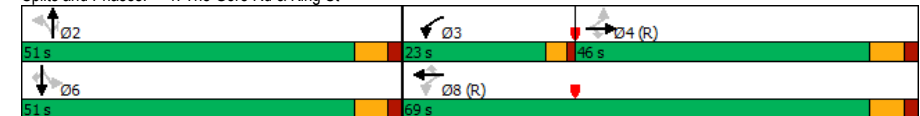
Future Total Phase 1 2031
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	51	283	171	229	465	45	11	72	85	106	377	125
Future Volume (vph)	51	283	171	229	465	45	11	72	85	106	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)	46.0	46.0	46.0	23.0	69.0	69.0	51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	38.3%	38.3%	38.3%	19.2%	57.5%	57.5%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%
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)	61.1	61.1	61.1	79.9	77.3	77.3	29.5	29.5	29.5	29.5	29.5	29.5
Actuated g/C Ratio	0.51	0.51	0.51	0.67	0.64	0.64	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.12	0.32	0.22	0.35	0.41	0.05	0.12	0.16	0.22	0.38	0.80	0.29
Control Delay	20.5	20.8	4.1	10.4	12.8	4.8	34.5	34.1	7.8	39.9	54.8	8.5
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	20.5	20.8	4.1	10.4	12.8	4.8	34.5	34.1	7.8	39.9	54.8	8.5
LOS	C	C	A	B	B	A	C	C	A	D	D	A
Approach Delay		15.1			11.6			20.8				42.7
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: 0.80
 Intersection Signal Delay: 22.6
 Intersection Capacity Utilization 75.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

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



Queues
1: The Gore Rd & King St

Future Total Phase 1 2031
Morning Peak Hour




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	283	171	229	465	45	11	72	85	106	377	125
v/c Ratio	0.12	0.32	0.22	0.35	0.41	0.05	0.12	0.16	0.22	0.38	0.80	0.29
Control Delay	20.5	20.8	4.1	10.4	12.8	4.8	34.5	34.1	7.8	39.9	54.8	8.5
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	20.5	20.8	4.1	10.4	12.8	4.8	34.5	34.1	7.8	39.9	54.8	8.5
Queue Length 50th (m)	6.2	38.7	0.0	19.8	50.8	1.0	2.1	13.9	0.0	21.7	87.1	1.7
Queue Length 95th (m)	17.5	74.3	14.0	38.5	89.5	6.5	6.8	23.8	11.5	35.3	111.2	15.4
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)	421	896	769	702	1134	831	143	658	542	420	710	591
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	0.12	0.32	0.22	0.33	0.41	0.05	0.08	0.11	0.16	0.25	0.53	0.21

Intersection Summary

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

Future Total Phase 1 2031
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	283	171	229	465	45	11	72	85	106	377	125
Future Volume (vph)	51	283	171	229	465	45	11	72	85	106	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	0.97	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)	1586	1762	1346	1640	1762	1273	1682	1779	1321	1520	1921	1400
Flt Permitted	0.50	1.00	1.00	0.51	1.00	1.00	0.22	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	828	1762	1346	881	1762	1273	391	1779	1321	1136	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	283	171	229	465	45	11	72	85	106	377	125
RTOR Reduction (vph)	0	0	84	0	0	12	0	0	64	0	0	87
Lane Group Flow (vph)	51	283	87	229	465	33	11	72	21	106	377	38
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	4%	9%	4%	4%	9%	10%	0%	8%	6%	3%	0%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8		2		2		6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	61.1	61.1	61.1	77.3	77.3	77.3	29.5	29.5	29.5	29.5	29.5	29.5
Effective Green, g (s)	61.1	61.1	61.1	77.3	77.3	77.3	29.5	29.5	29.5	29.5	29.5	29.5
Actuated g/C Ratio	0.51	0.51	0.51	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)	421	897	685	644	1135	820	96	437	324	279	472	344
v/s Ratio Prot		0.16		0.04	c0.26			0.04			c0.20	
v/s Ratio Perm	0.06		0.06	0.19		0.03	0.03		0.02	0.09		0.03
v/c Ratio	0.12	0.32	0.13	0.36	0.41	0.04	0.11	0.16	0.06	0.38	0.80	0.11
Uniform Delay, d1	15.4	17.2	15.5	9.2	10.3	7.8	35.1	35.6	34.7	37.6	42.5	35.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.9	0.4	0.3	1.1	0.1	0.5	0.2	0.1	0.9	9.2	0.1
Delay (s)	16.0	18.1	15.8	9.5	11.4	7.9	35.6	35.7	34.8	38.5	51.6	35.2
Level of Service	B	B	B	A	B	A	D	D	C	D	D	D
Approach Delay (s)		17.1			10.6			35.2			46.0	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	24.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Total Phase 1 2031

Morning Peak Hour

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		0	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	0.97		0.88	0.96	0.99		0.94	0.97		0.91	0.95	
Frt			0.850		0.986			0.966			0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1541	1590	1756	0	1401	1533	0	1665	1691	0
Flt Permitted	0.309			0.360			0.497			0.591		
Satd. Flow (perm)	546	1812	1352	577	1756	0	688	1533	0	939	1691	0
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			122		6		14			28		
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

Future Total Phase 1 2031

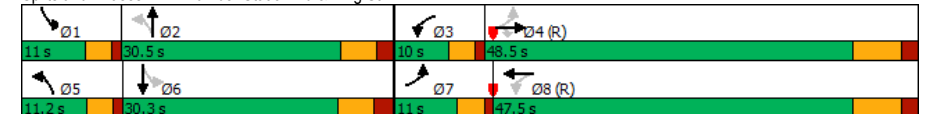
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	41	459	214	73	489	40	62	128	170
Future Volume (vph)	41	459	214	73	489	40	62	128	170
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	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	11.2	30.0	11.0	30.2
Total Split (s)	11.0	48.5	48.5	10.0	47.5	11.2	30.5	11.0	30.3
Total Split (%)	11.0%	48.5%	48.5%	10.0%	47.5%	11.2%	30.5%	11.0%	30.3%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	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	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	4.0	6.0	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	None	Min	None	Min
Act Effct Green (s)	55.7	47.0	47.0	56.2	48.9	27.7	18.8	31.4	24.1
Actuated g/C Ratio	0.56	0.47	0.47	0.56	0.49	0.28	0.19	0.31	0.24
v/c Ratio	0.11	0.54	0.31	0.19	0.63	0.17	0.27	0.36	0.63
Control Delay	10.8	23.6	9.7	11.4	25.4	23.1	29.4	26.5	38.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	23.6	9.7	11.4	25.4	23.1	29.4	26.5	38.1
LOS	B	C	A	B	C	C	C	C	D
Approach Delay		18.7			23.7		27.3		34.4
Approach LOS		B			C		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: 0.63
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 76.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

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



Queues
2: Humber Station Rd & King St

Future Total Phase 1 2031
Morning Peak Hour

	↖	→	↘	↙	←	↖	↑	↘	↓
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	41	459	214	73	541	40	80	128	270
v/c Ratio	0.11	0.54	0.31	0.19	0.63	0.17	0.27	0.36	0.63
Control Delay	10.8	23.6	9.7	11.4	25.4	23.1	29.4	26.5	38.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	23.6	9.7	11.4	25.4	23.1	29.4	26.5	38.1
Queue Length 50th (m)	3.3	67.8	10.9	5.9	83.6	5.5	11.7	18.5	46.5
Queue Length 95th (m)	8.6	105.0	28.4	13.4	134.5	12.2	23.0	30.8	71.4
Internal Link Dist (m)		305.7			816.4		324.5		323.2
Turn Bay Length (m)	50.0		25.0	50.0				50.0	
Base Capacity (vph)	388	853	701	389	863	246	386	355	443
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	0.11	0.54	0.31	0.19	0.63	0.16	0.21	0.36	0.61

Intersection Summary

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

Future Total Phase 1 2031
Morning Peak Hour

	↖	→	↘	↙	←	↖	↑	↘	↓	↙		
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖		↖	↖		↖	↖	↖
Traffic Volume (vph)	41	459	214	73	489	52	40	62	18	128	170	100
Future Volume (vph)	41	459	214	73	489	52	40	62	18	128	170	100
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		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	
Frbp, ped/bikes	1.00	1.00	0.88	1.00	0.99		1.00	0.97		1.00	0.95	
Frt, ped/bikes	0.99	1.00	1.00	0.99	1.00		0.97	1.00		0.95	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1714	1812	1352	1569	1755		1357	1533		1584	1692	
Flt Permitted	0.31	1.00	1.00	0.36	1.00		0.50	1.00		0.59	1.00	
Satd. Flow (perm)	557	1812	1352	595	1755		710	1533		985	1692	
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	459	214	73	489	52	40	62	18	128	170	100
RTOR Reduction (vph)	0	0	68	0	3	0	0	11	0	0	21	0
Lane Group Flow (vph)	41	459	146	73	538	0	40	69	0	128	249	0
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	6%	6%	11%	7%	3%	26%	2%	72%	6%	2%	3%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	48.7	44.6	44.6	50.9	45.7		24.9	20.4		32.5	24.1	
Effective Green, g (s)	48.7	44.6	44.6	50.9	45.7		24.9	20.4		32.5	24.1	
Actuated g/C Ratio	0.49	0.45	0.45	0.51	0.46		0.25	0.20		0.32	0.24	
Clearance Time (s)	4.0	7.4	7.4	4.0	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	
Lane Grp Cap (vph)	318	808	602	353	802		205	312		370	407	
v/s Ratio Prot	0.01	0.25		c0.01	c0.31		0.01	0.04		c0.03	c0.15	
v/s Ratio Perm	0.06		0.11	0.09			0.04			0.08		
v/c Ratio	0.13	0.57	0.24	0.21	0.67		0.20	0.22		0.35	0.61	
Uniform Delay, d1	14.6	20.6	17.2	13.5	21.3		29.1	33.2		24.9	33.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	2.9	1.0	0.3	4.4		0.5	0.4		0.6	2.7	
Delay (s)	14.8	23.4	18.2	13.8	25.7		29.6	33.5		25.4	36.5	
Level of Service	B	C	B	B	C		C	C		C	D	
Approach Delay (s)		21.4			24.3			32.2			32.9	
Approach LOS		C			C			C			C	

Intersection Summary

HCM 2000 Control Delay	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

Future Total Phase 1 2031
Morning Peak Hour

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	1
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	0.97			0.85	0.91	0.89
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1765	1921	1921	1633	1825	1633
Flt Permitted	0.346				0.950	
Satd. Flow (perm)	625	1921	1921	1388	1654	1450
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				16		92
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

Future Total Phase 1 2031
Morning Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Volume (vph)	55	431	654	28	223	92
Future Volume (vph)	55	431	654	28	223	92
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Detector Phase	4	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	23.0	23.0	30.0	30.0
Total Split (s)	57.0	57.0	57.0	57.0	33.0	33.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%	36.7%
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	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0

Lead/Lag

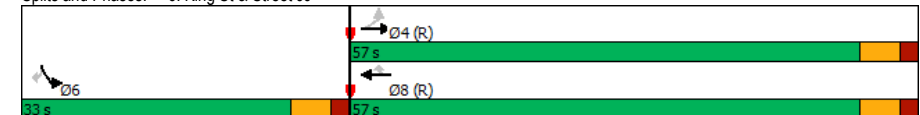
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min	Min
Act Effct Green (s)	61.4	61.4	61.4	61.4	16.6	16.6
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.18	0.18
v/c Ratio	0.13	0.33	0.50	0.03	0.66	0.27
Control Delay	7.3	7.5	9.5	4.1	43.0	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	7.5	9.5	4.1	43.0	8.3
LOS	A	A	A	A	D	A
Approach Delay		7.5	9.3		32.8	
Approach LOS		A	A		C	

Intersection Summary

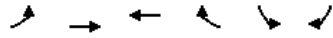
Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 36 (40%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 13.7
 Intersection Capacity Utilization 72.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Total Phase 1 2031
Morning Peak Hour

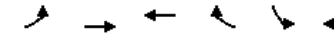


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	55	431	654	28	223	92
v/c Ratio	0.13	0.33	0.50	0.03	0.66	0.27
Control Delay	7.3	7.5	9.5	4.1	43.0	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	7.5	9.5	4.1	43.0	8.3
Queue Length 50th (m)	2.9	27.2	48.6	0.6	37.8	0.0
Queue Length 95th (m)	9.7	55.0	95.9	4.1	55.0	11.3
Internal Link Dist (m)		86.9	276.5		238.0	
Turn Bay Length (m)	50.0			25.0		
Base Capacity (vph)	426	1309	1309	951	547	499
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.33	0.50	0.03	0.41	0.18

Intersection Summary

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

Future Total Phase 1 2031
Morning Peak Hour



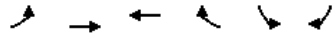
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	55	431	654	28	223	92
Future Volume (vph)	55	431	654	28	223	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.85	1.00	0.89
Flpb, ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1699	1921	1921	1388	1825	1450
Flt Permitted	0.35	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	620	1921	1921	1388	1825	1450
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	431	654	28	223	92
RTOR Reduction (vph)	0	0	0	5	0	75
Lane Group Flow (vph)	55	431	654	23	223	17
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	NA	Perm	Prot	Perm
Protected Phases		4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	61.4	61.4	61.4	61.4	16.6	16.6
Effective Green, g (s)	61.4	61.4	61.4	61.4	16.6	16.6
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.18	0.18
Clearance Time (s)	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
Lane Grp Cap (vph)	422	1310	1310	946	336	267
v/s Ratio Prot		0.22	c0.34		c0.12	
v/s Ratio Perm	0.09			0.02		0.01
v/c Ratio	0.13	0.33	0.50	0.02	0.66	0.06
Uniform Delay, d1	5.0	5.9	6.9	4.6	34.1	30.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.7	1.4	0.0	4.9	0.1
Delay (s)	5.6	6.5	8.3	4.7	39.0	30.4
Level of Service	A	A	A	A	D	C
Approach Delay (s)		6.4	8.1		36.5	
Approach LOS		A	A		D	

Intersection Summary

HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Total Phase 1 2031
Morning Peak Hour



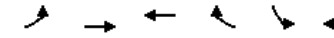
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1633	1662	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1633	1662	0
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

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

Future Total Phase 1 2031
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	655	590	28	0	92
Future Volume (Veh/h)	0	655	590	28	0	92
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	655	590	28	0	92
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.80				0.83	0.80
vC, conflicting volume	668				1345	690
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	455				1113	483
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	79
cM capacity (veh/h)	851				178	430
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	655	590	28	92	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	28	92	
cSH	1700	1700	1700	1700	430	
Volume to Capacity	0.00	0.39	0.35	0.02	0.21	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	6.3	
Control Delay (s)	0.0	0.0	0.0	0.0	15.6	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		15.6	
Approach LOS					C	
Intersection Summary						
Average Delay			1.1			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Total Phase 1 2031
Morning Peak Hour

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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	0	0	1921
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

Future Total Phase 1 2031
Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	184	0	0	652
Future Volume (Veh/h)	0	0	184	0	0	652
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	0	184	0	0	652
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	0.86					
vC, conflicting volume	936	284			234	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	847	284			234	
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	100			100	
cM capacity (veh/h)	265	696			1288	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	0	184	652			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.11	0.38			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			52.4%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Total Phase 1 2031
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	0	1858	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

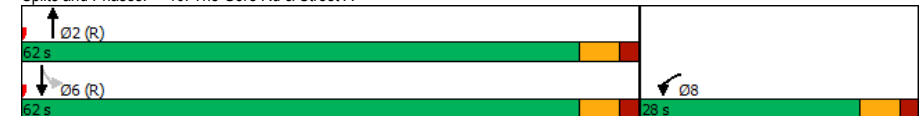
Future Total Phase 1 2031
Morning Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	184	652	
Future Volume (vph)	184	652	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.12	0.40	
Control Delay	4.3	6.1	
Queue Delay	0.0	0.0	
Total Delay	4.3	6.1	
LOS	A	A	
Approach Delay	4.3	6.1	
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: 0.40
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 60.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

Future Total Phase 1 2031
Morning Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	184	652
v/c Ratio	0.12	0.40
Control Delay	4.3	6.1
Queue Delay	0.0	0.0
Total Delay	4.3	6.1
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	21.5	89.1
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1598	1631
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.12	0.40
Intersection Summary		

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

Future Total Phase 1 2031
Morning Peak Hour

	←	↖	↑	↗	→	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖		↑		↗	↓
Traffic Volume (vph)	0	0	184	0	0	652
Future Volume (vph)	0	0	184	0	0	652
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Fr t			1.00			1.00
Fl t Protected			1.00			1.00
Satd. Flow (prot)			1883			1921
Fl Permitted			1.00			1.00
Satd. Flow (perm)			1883			1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	184	0	0	652
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	184	0	0	652
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1447			1477
v/s Ratio Prot			0.10			c0.34
v/s Ratio Perm						
v/c Ratio			0.13			0.44
Uniform Delay, d1			2.7			3.6
Progression Factor			0.99			1.00
Incremental Delay, d2			0.2			1.0
Delay (s)			2.8			4.6
Level of Service			A			A
Approach Delay (s)	0.0		2.8			4.6
Approach LOS	A		A			A
Intersection Summary						
HCM 2000 Control Delay			4.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.39			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			60.0%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics

48: Humber Station Rd & Street E

Future Total Phase 1 2031

Morning Peak Hour

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		0	1		0
Taper Length (m)	7.5		7.5		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	0.865											
Flt Protected							0.950					
Satd. Flow (prot)	0	1662	0	0	1921	0	1789	1883	0	1921	1921	0
Flt Permitted	0.950											
Satd. Flow (perm)	0	1662	0	0	1921	0	1789	1883	0	1921	1921	0
Link Speed (k/h)	50			50			50			50		
Link Distance (m)	138.8			126.7			153.0			361.4		
Travel Time (s)	10.0			9.1			11.0			26.0		

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

48: Humber Station Rd & Street E

Future Total Phase 1 2031

Morning Peak Hour













Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔		↔	↔	
Sign Control	Stop						Stop					
Traffic Volume (vph)	0	0	19	0	0	0	7	40	0	0	100	0
Future Volume (vph)	0	0	19	0	0	0	7	40	0	0	100	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	0	19	0	0	0	7	40	0	0	100	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	19	0	7	40	0	100						
Volume Left (vph)	0	0	7	0	0	0						
Volume Right (vph)	19	0	0	0	0	0						
Hadj (s)	-0.60	0.00	0.53	0.03	0.00	0.00						
Departure Headway (s)	3.6	4.3	5.1	4.6	4.6	4.6						
Degree Utilization, x	0.02	0.00	0.01	0.05	0.00	0.13						
Capacity (veh/h)	944	820	686	760	791	774						
Control Delay (s)	6.7	7.3	7.0	6.7	6.4	7.0						
Approach Delay (s)	6.7	0.0	6.7		7.0							
Approach LOS	A	A	A		A							

Intersection Summary

Delay	6.9
Level of Service	A
Intersection Capacity Utilization	30.4%
ICU Level of Service	A
Analysis Period (min)	15













Lanes and Geometrics
58: Humber Station Rd & Street Y

Future Total Phase 1 2031
Morning Peak Hour

						
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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1662	0	1789	1883	1921	0
Flt Permitted			0.950			
Satd. Flow (perm)	1662	0	1789	1883	1921	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	153.0	
Travel Time (s)	5.9			14.0	11.0	
Intersection Summary						
Area Type:	Other					

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

Future Total Phase 1 2031
Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	4	1	44	119	0
Future Volume (vph)	0	4	1	44	119	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	4	1	44	119	0
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	4	1	44	119		
Volume Left (vph)	0	1	0	0		
Volume Right (vph)	4	0	0	0		
Hadj (s)	-0.60	0.53	0.03	0.00		
Departure Headway (s)	3.7	5.1	4.6	4.1		
Degree Utilization, x	0.00	0.00	0.06	0.13		
Capacity (veh/h)	938	691	766	882		
Control Delay (s)	6.7	6.9	6.7	7.7		
Approach Delay (s)	6.7	6.7		7.7		
Approach LOS	A	A		A		
Intersection Summary						
Delay			7.4			
Level of Service			A			
Intersection Capacity Utilization			30.3%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
64: Street JJ & Street Y

Future Total Phase 1 2031
Morning Peak Hour

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	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		0.865						0.912				
Flt Protected					0.950							
Satd. Flow (prot)	0	1662	0	0	1825	0	0	1740	0	0	1921	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1662	0	0	1825	0	0	1740	0	0	1921	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

Future Total Phase 1 2031
Morning Peak Hour

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	0	2	67	0	0	0	9	17	0	37	0
Future Volume (vph)	0	0	2	67	0	0	0	9	17	0	37	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	0	2	67	0	0	0	9	17	0	37	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	2	67	26	37								
Volume Left (vph)	0	67	0	0								
Volume Right (vph)	2	0	17	0								
Hadj (s)	-0.60	0.20	-0.38	0.00								
Departure Headway (s)	3.5	4.2	3.7	4.1								
Degree Utilization, x	0.00	0.08	0.03	0.04								
Capacity (veh/h)	1000	834	939	863								
Control Delay (s)	6.5	7.6	6.8	7.3								
Approach Delay (s)	6.5	7.6	6.8	7.3								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.3
Level of Service	A
Intersection Capacity Utilization	20.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

Future Total Phase 1 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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		0.865						0.973				
Flt Protected					0.950			0.985				
Satd. Flow (prot)	0	1662	0	0	1825	0	0	1812	0	0	1921	0
Flt Permitted					0.950			0.985				
Satd. Flow (perm)	0	1662	0	0	1825	0	0	1812	0	0	1921	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

Future Total Phase 1 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	12	7	0	0	3	5	2	0	18	0
Future Volume (vph)	0	0	12	7	0	0	3	5	2	0	18	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	0	12	7	0	0	3	5	2	0	18	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	12	7	10	18								
Volume Left (vph)	0	7	3	0								
Volume Right (vph)	12	0	2	0								
Hadj (s)	-0.60	0.20	-0.03	0.00								
Departure Headway (s)	3.4	4.2	3.9	3.9								
Degree Utilization, x	0.01	0.01	0.01	0.02								
Capacity (veh/h)	1053	853	910	902								
Control Delay (s)	6.4	7.2	7.0	7.0								
Approach Delay (s)	6.4	7.2	7.0	7.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay				6.9								
Level of Service				A								
Intersection Capacity Utilization				29.8%		ICU Level of Service					A	
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

Future Total Phase 1 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.865						0.964				
Flt Protected					0.950							
Satd. Flow (prot)	0	1662	0	0	1825	0	0	1825	0	0	1921	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1662	0	0	1825	0	0	1825	0	0	1921	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

Future Total Phase 1 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	2	67	0	0	0	46	17	0	176	0
Future Volume (Veh/h)	0	0	2	67	0	0	0	46	17	0	176	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	0	2	67	0	0	0	46	17	0	176	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)								262				
pX, platoon unblocked												
vC, conflicting volume	280	339	276	332	330	104	226			113		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	280	339	276	332	330	104	226			113		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	100	100			100		
cM capacity (veh/h)	605	537	703	534	542	915	1285			1425		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	67	63	176								
Volume Left	0	67	0	0								
Volume Right	2	0	17	0								
cSH	703	534	1285	1425								
Volume to Capacity	0.00	0.13	0.00	0.00								
Queue Length 95th (m)	0.1	3.4	0.0	0.0								
Control Delay (s)	10.1	12.7	0.0	0.0								
Lane LOS	B	B										
Approach Delay (s)	10.1	12.7	0.0	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				2.8								
Intersection Capacity Utilization			29.9%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

Future Total Phase 1 2031
Morning Peak Hour

	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	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		0.865										
Flt Protected								0.993				
Satd. Flow (prot)	0	1662	0	0	1921	0	0	1870	0	0	1921	0
Flt Permitted								0.993				
Satd. Flow (perm)	0	1662	0	0	1921	0	0	1870	0	0	1921	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

Future Total Phase 1 2031
Morning Peak Hour

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	0	12	0	0	0	3	18	0	0	59	0
Future Volume (vph)	0	0	12	0	0	0	3	18	0	0	59	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	0	12	0	0	0	3	18	0	0	59	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	12	0	21	59								
Volume Left (vph)	0	0	3	0								
Volume Right (vph)	12	0	0	0								
Hadj (s)	-0.60	0.00	0.06	0.00								
Departure Headway (s)	3.5	4.1	4.0	3.9								
Degree Utilization, x	0.01	0.00	0.02	0.06								
Capacity (veh/h)	1008	874	873	905								
Control Delay (s)	6.5	7.1	7.1	7.2								
Approach Delay (s)	6.5	0.0	7.1	7.2								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.1
Level of Service	A
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
88: Humber Station Rd & Street EE

Future Total Phase 1 2031
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↓	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1883	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1883	1921	0
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

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

Future Total Phase 1 2031
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↓	
Traffic Volume (veh/h)	0	0	0	143	367	0
Future Volume (Veh/h)	0	0	0	143	367	0
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	0	0	143	367	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)				347		
pX, platoon unblocked						
vC, conflicting volume	610	467	417			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	610	467	417			
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	100	100			
cM capacity (veh/h)	422	550	1093			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	143	367			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1093	1700			
Volume to Capacity	0.00	0.00	0.22			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			22.6%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

FTP1 2031 Without Improvements
Morning Peak Hour

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	0.96		0.99	0.97		0.92	0.90		0.96	
Frt	0.944			0.987			0.919			0.963		
Flt Protected	0.950	0.950		0.950			0.950			0.950		
Satd. Flow (prot)	1562	1598	0	1681	1745	0	1261	1514	0	1681	1784	0
Flt Permitted	0.476	0.325		0.154			0.635			0.635		
Satd. Flow (perm)	734	1598	0	554	1745	0	198	1514	0	1013	1784	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	30			6			55			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

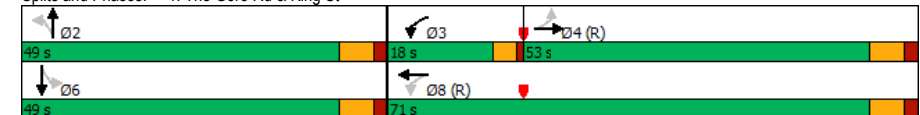
FTP1 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	283	229	465	11	72	106	377
Future Volume (vph)	51	283	229	465	11	72	106	377
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	4		3	8	2		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)	53.0	53.0	18.0	71.0	49.0	49.0	49.0	49.0
Total Split (%)	44.2%	44.2%	15.0%	59.2%	40.8%	40.8%	40.8%	40.8%
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)	52.9	52.9	72.0	69.4	37.4	37.4	37.4	37.4
Actuated g/C Ratio	0.44	0.44	0.60	0.58	0.31	0.31	0.31	0.31
v/c Ratio	0.16	0.63	0.51	0.50	0.18	0.31	0.34	0.89
Control Delay	25.2	30.8	16.3	18.0	35.7	20.5	33.6	56.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	30.8	16.3	18.0	35.7	20.5	33.6	56.2
LOS	C	C	B	B	D	C	C	E
Approach Delay	30.2			17.5		21.5		52.3
Approach LOS	C			B		C		D

Intersection Summary

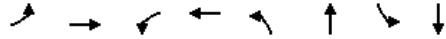
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 31.5
 Intersection Capacity Utilization 103.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service G

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



Queues
1: The Gore Rd & King St

FTP1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	454	229	510	11	157	106	502
v/c Ratio	0.16	0.63	0.51	0.50	0.18	0.31	0.34	0.89
Control Delay	25.2	30.8	16.3	18.0	35.7	20.5	33.6	56.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	30.8	16.3	18.0	35.7	20.5	33.6	56.2
Queue Length 50th (m)	7.6	81.4	25.2	71.5	1.9	18.1	19.6	111.9
Queue Length 95th (m)	18.0	127.8	42.2	109.4	7.2	34.3	34.2	150.6
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)	326	727	467	1013	69	571	358	641
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	0.62	0.49	0.50	0.16	0.27	0.30	0.78

Intersection Summary

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

FTP1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	283	171	229	465	45	11	72	85	106	377	125
Future Volume (vph)	51	283	171	229	465	45	11	72	85	106	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		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	0.92		1.00	0.96	
Flpb, ped/bikes	0.94	1.00		0.99	1.00		1.00	1.00		0.90	1.00	
Frpt	1.00	0.94		1.00	0.99		1.00	0.92		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)	1466	1598		1662	1745		1261	1514		1516	1784	
Flt Permitted	0.48	1.00		0.32	1.00		0.15	1.00		0.63	1.00	
Satd. Flow (perm)	734	1598		568	1745		205	1514		1013	1784	
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	283	171	229	465	45	11	72	85	106	377	125
RTOR Reduction (vph)	0	17	0	0	3	0	0	38	0	0	10	0
Lane Group Flow (vph)	51	437	0	229	507	0	11	119	0	106	492	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)	52.9	52.9		69.4	69.4		37.4	37.4		37.4	37.4	
Effective Green, g (s)	52.9	52.9		69.4	69.4		37.4	37.4		37.4	37.4	
Actuated g/C Ratio	0.44	0.44		0.58	0.58		0.31	0.31		0.31	0.31	
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)	323	704		442	1009		63	471		315	556	
v/s Ratio Prot		c0.27		0.05	c0.29			0.08			c0.28	
v/s Ratio Perm	0.07			0.25			0.05			0.10		
v/c Ratio	0.16	0.62		0.52	0.50		0.17	0.25		0.34	0.88	
Uniform Delay, d1	20.2	25.8		14.6	15.0		30.1	30.9		31.8	39.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	4.1		1.0	1.8		1.3	0.3		0.6	15.4	
Delay (s)	21.2	29.9		15.7	16.8		31.4	31.1		32.4	54.7	
Level of Service	C	C		B	B		C	C		C	D	
Approach Delay (s)		29.0			16.5			31.2			50.8	
Approach LOS		C			B			C			D	

Intersection Summary

HCM 2000 Control Delay	31.2	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)	17.2
Intersection Capacity Utilization	103.3%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FTP1 2031 Without Improvements
Morning Peak Hour

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		0.96			0.99			0.96			0.94	
Frt		0.960			0.989			0.980			0.966	
Flt Protected		0.997			0.994			0.984			0.984	
Satd. Flow (prot)	0	1651	0	0	1789	0	0	1522	0	0	1710	0
Flt Permitted		0.939			0.841			0.780			0.856	
Satd. Flow (perm)	0	1552	0	0	1508	0	0	1184	0	0	1445	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			6			9			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

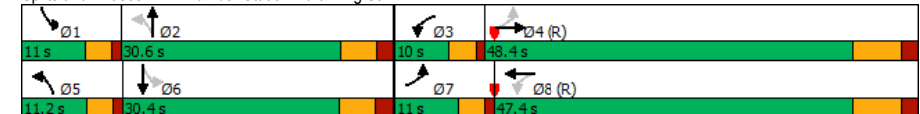
FTP1 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	41	459	73	489	40	62	128	170
Future Volume (vph)	41	459	73	489	40	62	128	170
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	48.4	10.0	47.4	11.2	30.6	11.0	30.4
Total Split (%)	11.0%	48.4%	10.0%	47.4%	11.2%	30.6%	11.0%	30.4%
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)		54.5		54.5		32.1		31.9
Actuated g/C Ratio		0.54		0.54		0.32		0.32
v/c Ratio		0.83		0.75		0.31		0.84
Control Delay		29.8		25.5		24.9		47.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		29.8		25.5		24.9		47.0
LOS		C		C		C		D
Approach Delay		29.8		25.5		24.9		47.0
Approach LOS		C		C		C		D

Intersection Summary

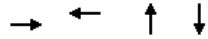
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 31.8
 Intersection Capacity Utilization 94.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
2: Humber Station Rd & King St

FTP1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	714	614	120	398
v/c Ratio	0.83	0.75	0.31	0.84
Control Delay	29.8	25.5	24.9	47.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.8	25.5	24.9	47.0
Queue Length 50th (m)	116.7	94.7	16.0	68.4
Queue Length 95th (m)	#198.9	#148.9	30.3	#113.5
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	858	824	386	472
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	0.83	0.75	0.31	0.84

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

FTP1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	41	459	214	73	489	52	40	62	18	128	170	100
Future Volume (vph)	41	459	214	73	489	52	40	62	18	128	170	100
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		0.96			0.99			0.98			0.97	
Flpb, ped/bikes		1.00			1.00			0.99			0.97	
Frt		0.96			0.99			0.98			0.97	
Flt Protected		1.00			0.99			0.98			0.98	
Satd. Flow (prot)		1647			1783			1500			1664	
Flt Permitted		0.94			0.84			0.78			0.86	
Satd. Flow (perm)		1551			1508			1189			1447	
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	459	214	73	489	52	40	62	18	128	170	100
RTOR Reduction (vph)	0	13	0	0	3	0	0	6	0	0	12	0
Lane Group Flow (vph)	0	701	0	0	611	0	0	114	0	0	386	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	26%	0%	72%	6%	2%	3%
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)		54.5			54.5			32.1			31.9	
Effective Green, g (s)		54.5			54.5			32.1			31.9	
Actuated g/C Ratio		0.54			0.54			0.32			0.32	
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)		845			821			381			461	
v/s Ratio Prot												
v/s Ratio Perm		c0.45			0.41			0.10			c0.27	
v/c Ratio		0.83			0.74			0.30			0.84	
Uniform Delay, d1		18.9			17.4			25.5			31.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		6.8			3.7			0.4			12.6	
Delay (s)		25.7			21.1			25.9			44.2	
Level of Service		C			C			C			D	
Approach Delay (s)		25.7			21.1			25.9			44.2	
Approach LOS		C			C			C			D	

Intersection Summary

HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FTPh1 2031 Without Improvements
Morning Peak Hour

	↖	→	←	↗	↘	↙
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	0.97			0.85	0.90	
Frt				0.850	0.961	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1730	1883	1883	1601	1691	0
Flt Permitted	0.325				0.966	
Satd. Flow (perm)	575	1883	1883	1361	1579	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				16	24	
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

FTPh1 2031 Without Improvements
Morning Peak Hour

	↖	→	←	↗	↘
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↖	↖	↖	↖
Traffic Volume (vph)	55	431	654	28	223
Future Volume (vph)	55	431	654	28	223
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)	57.0	57.0	57.0	57.0	33.0
Total Split (%)	63.3%	63.3%	63.3%	63.3%	36.7%
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

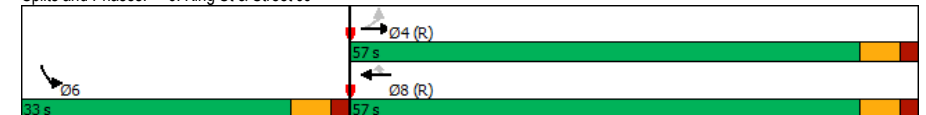
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	57.4	57.4	57.4	57.4	20.6
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.23
v/c Ratio	0.15	0.36	0.54	0.03	0.78
Control Delay	9.4	9.6	12.2	5.1	43.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	9.6	12.2	5.1	43.0
LOS	A	A	B	A	D
Approach Delay		9.6	11.9		43.0
Approach LOS		A	B		D

Intersection Summary

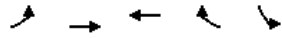
Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 36 (40%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 17.8
 Intersection Capacity Utilization 73.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FTP1 2031 Without Improvements
Morning Peak Hour

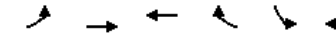


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	55	431	654	28	315
v/c Ratio	0.15	0.36	0.54	0.03	0.78
Control Delay	9.4	9.6	12.2	5.1	43.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	9.6	12.2	5.1	43.0
Queue Length 50th (m)	3.6	33.1	59.2	0.7	49.1
Queue Length 95th (m)	10.9	61.0	107.1	4.5	72.2
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	366	1201	1201	874	524
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	0.36	0.54	0.03	0.60

Intersection Summary

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

FTP1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	55	431	654	28	223	92
Future Volume (vph)	55	431	654	28	223	92
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	6.0
Lane Util. Factor	1.00	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	0.97	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)	1672	1883	1883	1361	1690	
FlT Permitted	0.32	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	572	1883	1883	1361	1690	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	55	431	654	28	223	92
RTOR Reduction (vph)	0	0	0	6	19	0
Lane Group Flow (vph)	55	431	654	22	296	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)	57.4	57.4	57.4	57.4	20.6	
Effective Green, g (s)	57.4	57.4	57.4	57.4	20.6	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.23	
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)	364	1200	1200	868	386	
v/s Ratio Prot		0.23	c0.35		c0.18	
v/s Ratio Perm	0.10			0.02		
v/c Ratio	0.15	0.36	0.55	0.03	0.77	
Uniform Delay, d1	6.5	7.7	9.0	6.0	32.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.8	1.8	0.1	8.9	
Delay (s)	7.4	8.5	10.8	6.1	41.3	
Level of Service	A	A	B	A	D	
Approach Delay (s)		8.4	10.6		41.3	
Approach LOS		A	B		D	

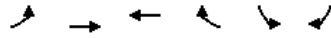
Intersection Summary

HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FTPh1 2031 Without Improvements
Morning Peak Hour



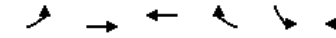
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1601	1629	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1601	1629	0
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

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

FTPh1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Traffic Volume (veh/h)	0	655	590	28	0	92
Future Volume (Veh/h)	0	655	590	28	0	92
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	655	590	28	0	92
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.83				0.88	0.83
vC, conflicting volume	668				1345	690
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500				1083	526
tC, single (s)	4.1				6.4	6.2
iC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	78
cM capacity (veh/h)	847				194	421

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	0	655	590	28	92
Volume Left	0	0	0	0	0
Volume Right	0	0	0	28	92
cSH	1700	1700	1700	1700	421
Volume to Capacity	0.00	0.39	0.35	0.02	0.22
Queue Length 95th (m)	0.0	0.0	0.0	0.0	6.5
Control Delay (s)	0.0	0.0	0.0	0.0	15.9
Lane LOS					C
Approach Delay (s)	0.0		0.0		15.9
Approach LOS					C

Intersection Summary

Average Delay		1.1			
Intersection Capacity Utilization		53.8%		ICU Level of Service	A
Analysis Period (min)		15			

Lanes and Geometrics
10: The Gore Rd & Street A

FTP1 2031 Without Improvements
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	1821	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

FTP1 2031 Without Improvements
Morning Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	184	652	
Future Volume (vph)	184	652	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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

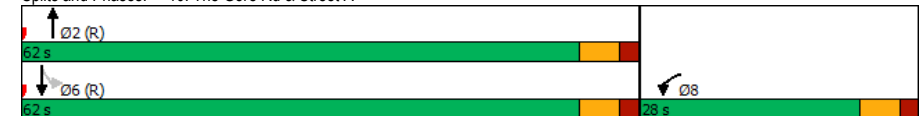
Lead-Lag Optimize?

Recall Mode	C-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.12	0.41	
Control Delay	4.4	6.3	
Queue Delay	0.0	0.0	
Total Delay	4.4	6.3	
LOS	A	A	
Approach Delay	4.4	6.3	
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: 0.41
 Intersection Signal Delay: 5.9
 Intersection Capacity Utilization 60.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

FTP1 2031 Without Improvements
Morning Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	184	652
v/c Ratio	0.12	0.41
Control Delay	4.4	6.3
Queue Delay	0.0	0.0
Total Delay	4.4	6.3
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	21.3	90.5
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1598	1598
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.12	0.41

Intersection Summary

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

FTP1 2031 Without Improvements
Morning Peak Hour

	↙	↘	↑	↗	↖	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↖	↓
Traffic Volume (vph)	0	0	184	0	0	652
Future Volume (vph)	0	0	184	0	0	652
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Fr t			1.00			1.00
Fl t Protected			1.00			1.00
Satd. Flow (prot)			1883			1883
Fl 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	184	0	0	652
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	184	0	0	652
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)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1447			1447
v/s Ratio Prot			0.10			c0.35
v/s Ratio Perm						
v/c Ratio			0.13			0.45
Uniform Delay, d1			2.7			3.7
Progression Factor			1.00			1.00
Incremental Delay, d2			0.2			1.0
Delay (s)			2.8			4.7
Level of Service			A			A
Approach Delay (s)	0.0		2.8			4.7
Approach LOS	A		A			A
Intersection Summary						
HCM 2000 Control Delay			4.3		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			60.0%		ICU Level of Service	B
Analysis Period (min)			15			

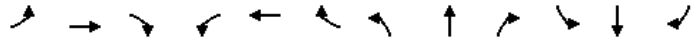
c Critical Lane Group

Lanes and Geometrics

FTP1 2031 Without Improvements

48: Humber Station Rd & Street E

Morning Peak Hour



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		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												
Frt		0.865										
Flt Protected								0.950				
Satd. Flow (prot)	0	1629	0	0	1883	0	1789	1883	0	1883	1883	0
Flt Permitted								0.950				
Satd. Flow (perm)	0	1629	0	0	1883	0	1789	1883	0	1883	1883	0
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

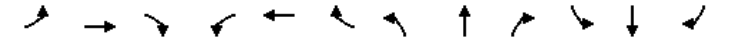
Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

FTP1 2031 Without Improvements

48: Humber Station Rd & Street E

Morning Peak Hour















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	0	19	0	0	0	7	40	0	0	100	0
Future Volume (vph)	0	0	19	0	0	0	7	40	0	0	100	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	0	19	0	0	0	7	40	0	0	100	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	19	0	7	40	0	100						
Volume Left (vph)	0	0	7	0	0	0						
Volume Right (vph)	19	0	0	0	0	0						
Hadj (s)	-0.57	0.00	0.53	0.03	0.00	0.03						
Departure Headway (s)	3.7	4.3	5.1	4.6	4.6	4.6						
Degree Utilization, x	0.02	0.00	0.01	0.05	0.00	0.13						
Capacity (veh/h)	935	820	686	760	791	768						
Control Delay (s)	6.8	7.3	7.0	6.7	6.4	7.1						
Approach Delay (s)	6.8	0.0	6.7		7.1							
Approach LOS	A	A	A		A							

Intersection Summary

Delay	6.9
Level of Service	A
Intersection Capacity Utilization	15.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
58: Humber Station Rd & Street Y

FTPPh1 2031 Without Improvements
Morning Peak Hour













						
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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1629	0	1789	1883	1883	0
Flt Permitted			0.950			
Satd. Flow (perm)	1629	0	1789	1883	1883	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	154.4	
Travel Time (s)	5.9			14.0	11.1	

Intersection Summary

Area Type: Other

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

FTPPh1 2031 Without Improvements
Morning Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	4	1	44	119	0
Future Volume (vph)	0	4	1	44	119	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	4	1	44	119	0
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	4	1	44	119		
Volume Left (vph)	0	1	0	0		
Volume Right (vph)	4	0	0	0		
Hadj (s)	-0.57	0.53	0.03	0.03		
Departure Headway (s)	3.7	5.1	4.6	4.1		
Degree Utilization, x	0.00	0.00	0.06	0.14		
Capacity (veh/h)	929	691	766	874		
Control Delay (s)	6.7	6.9	6.7	7.7		
Approach Delay (s)	6.7	6.7		7.7		
Approach LOS	A	A		A		

Intersection Summary

Delay	7.4				
Level of Service	A				
Intersection Capacity Utilization	30.3%	ICU Level of Service	A		
Analysis Period (min)	15				

Lanes and Geometrics
64: Street JJ & Street Y

FTP1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.865						0.912				
Flt Protected					0.950							
Satd. Flow (prot)	0	1629	0	0	1789	0	0	1718	0	0	1883	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1629	0	0	1789	0	0	1718	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

FTP1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	2	67	0	0	0	9	17	0	37	0
Future Volume (vph)	0	0	2	67	0	0	0	9	17	0	37	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	0	2	67	0	0	0	9	17	0	37	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	2	67	26	37								
Volume Left (vph)	0	67	0	0								
Volume Right (vph)	2	0	17	0								
Hadj (s)	-0.57	0.23	-0.36	0.03								
Departure Headway (s)	3.5	4.3	3.7	4.1								
Degree Utilization, x	0.00	0.08	0.03	0.04								
Capacity (veh/h)	990	828	933	856								
Control Delay (s)	6.5	7.6	6.8	7.3								
Approach Delay (s)	6.5	7.6	6.8	7.3								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.4								
Level of Service				A								
Intersection Capacity Utilization				20.4%				ICU Level of Service			A	
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

FTP1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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		0.865						0.973				
Flt Protected					0.950			0.985				
Satd. Flow (prot)	0	1629	0	0	1789	0	0	1805	0	0	1883	0
Flt Permitted					0.950			0.985				
Satd. Flow (perm)	0	1629	0	0	1789	0	0	1805	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

FTP1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	12	7	0	0	3	5	2	0	18	0
Future Volume (vph)	0	0	12	7	0	0	3	5	2	0	18	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	0	12	7	0	0	3	5	2	0	18	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	12	7	10	18								
Volume Left (vph)	0	7	3	0								
Volume Right (vph)	12	0	2	0								
Hadj (s)	-0.57	0.23	-0.03	0.03								
Departure Headway (s)	3.4	4.2	3.9	4.0								
Degree Utilization, x	0.01	0.01	0.01	0.02								
Capacity (veh/h)	1042	846	908	895								
Control Delay (s)	6.4	7.2	7.0	7.1								
Approach Delay (s)	6.4	7.2	7.0	7.1								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	6.9
Level of Service	A
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FTPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	0.0		7.5	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		0.865						0.964				
Flt Protected					0.950							
Satd. Flow (prot)	0	1629	0	0	1789	0	0	1816	0	0	1883	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1629	0	0	1789	0	0	1816	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

FTPh1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	2	67	0	0	0	46	17	0	176	0
Future Volume (Veh/h)	0	0	2	67	0	0	0	46	17	0	176	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	0	2	67	0	0	0	46	17	0	176	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)								262				
pX, platoon unblocked												
vC, conflicting volume	280	339	276	332	330	104	226			113		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	280	339	276	332	330	104	226			113		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	100	100			100		
cM capacity (veh/h)	602	534	699	531	539	909	1285			1413		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	67	63	176								
Volume Left	0	67	0	0								
Volume Right	2	0	17	0								
cSH	699	531	1285	1413								
Volume to Capacity	0.00	0.13	0.00	0.00								
Queue Length 95th (m)	0.1	3.4	0.0	0.0								
Control Delay (s)	10.2	12.8	0.0	0.0								
Lane LOS	B	B										
Approach Delay (s)	10.2	12.8	0.0	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				2.8								
Intersection Capacity Utilization			29.9%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FTP1 2031 Without Improvements
Morning Peak Hour

	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	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		0.865										
Flt Protected								0.993				
Satd. Flow (prot)	0	1629	0	0	1883	0	0	1870	0	0	1883	0
Flt Permitted								0.993				
Satd. Flow (perm)	0	1629	0	0	1883	0	0	1870	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

FTP1 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	12	0	0	0	3	18	0	0	59	0
Future Volume (Veh/h)	0	0	12	0	0	0	3	18	0	0	59	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	0	12	0	0	0	3	18	0	0	59	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)												
pX, platoon unblocked												
vC, conflicting volume	183	183	159	195	183	118	109			68		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	183	183	159	195	183	118	109			68		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	100			100		
cM capacity (veh/h)	666	650	812	645	650	856	1418			1468		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	12	0	21	59								
Volume Left	0	0	3	0								
Volume Right	12	0	0	0								
cSH	812	1700	1418	1468								
Volume to Capacity	0.01	0.00	0.00	0.00								
Queue Length 95th (m)	0.4	0.0	0.1	0.0								
Control Delay (s)	9.5	0.0	1.1	0.0								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.5	0.0	1.1	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				1.5								
Intersection Capacity Utilization			29.8%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FTP1 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
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

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

FTP1 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	143	367	0
Future Volume (Veh/h)	0	0	0	143	367	0
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	0	0	143	367	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)				347		
pX, platoon unblocked						
vC, conflicting volume	610	467	417			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	610	467	417			
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	100	100			
cM capacity (veh/h)	419	546	1093			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	143	367			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1093	1700			
Volume to Capacity	0.00	0.00	0.22			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					

Intersection Summary

Average Delay		0.0				
Intersection Capacity Utilization		22.6%	ICU Level of Service	A		
Analysis Period (min)		15				

Lanes and Geometrics
1: The Gore Rd & King St

Future Total Phase 1 2031
Afternoon Peak Hour

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	0.96		0.86	0.95		0.86	0.90		0.86	0.95		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1555	1697	1812	1617	1765	1902	1601	1747	1847	1526
Flt Permitted	0.363			0.389			0.651			0.219		
Satd. Flow (perm)	638	1812	1334	663	1812	1386	1085	1902	1373	382	1847	1309
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			69			192			69
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

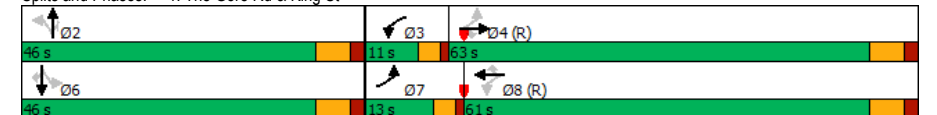
Future Total Phase 1 2031
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	148	476	20	131	501	112	57	381	224	57	137	57
Future Volume (vph)	148	476	20	131	501	112	57	381	224	57	137	57
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)	13.0	63.0	63.0	11.0	61.0	61.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	10.8%	52.5%	52.5%	9.2%	50.8%	50.8%	38.3%	38.3%	38.3%	38.3%	38.3%	38.3%
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)	76.1	63.9	63.9	75.2	63.5	63.5	29.8	29.8	29.8	29.8	29.8	29.8
Actuated g/C Ratio	0.63	0.53	0.53	0.63	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.30	0.49	0.03	0.27	0.52	0.15	0.21	0.81	0.46	0.61	0.30	0.15
Control Delay	10.4	22.0	0.1	10.1	23.0	8.5	35.3	55.5	10.2	65.0	36.8	6.0
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	10.4	22.0	0.1	10.1	23.0	8.5	35.3	55.5	10.2	65.0	36.8	6.0
LOS	B	C	A	B	C	A	D	E	B	E	D	A
Approach Delay		18.6			18.5		38.4				36.2	
Approach LOS		B			B		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: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 26.2
 Intersection Capacity Utilization 90.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
1: The Gore Rd & King St

Future Total Phase 1 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group													
Lane Group Flow (vph)	148	476	20	131	501	112	57	381	224	57	137	57	
v/c Ratio	0.30	0.49	0.03	0.27	0.52	0.15	0.21	0.81	0.46	0.61	0.30	0.15	
Control Delay	10.4	22.0	0.1	10.1	23.0	8.5	35.3	55.5	10.2	65.0	36.8	6.0	
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	10.4	22.0	0.1	10.1	23.0	8.5	35.3	55.5	10.2	65.0	36.8	6.0	
Queue Length 50th (m)	12.1	70.1	0.0	10.6	75.8	4.9	11.2	88.3	6.1	12.4	27.4	0.0	
Queue Length 95th (m)	25.6	125.1	0.0	23.0	135.2	17.8	20.8	112.2	25.0	26.5	40.7	7.5	
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)	501	980	753	495	969	774	356	624	579	125	606	476	
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	0.30	0.49	0.03	0.26	0.52	0.14	0.16	0.61	0.39	0.46	0.23	0.12	

Intersection Summary

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

Future Total Phase 1 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations												
Traffic Volume (vph)	148	476	20	131	501	112	57	381	224	57	137	57
Future Volume (vph)	148	476	20	131	501	112	57	381	224	57	137	57
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	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	0.99	1.00	1.00	0.98	1.00	1.00	0.90	1.00	1.00	0.95	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)	1706	1812	1334	1669	1812	1386	1586	1902	1373	1666	1847	1309
Flt Permitted	0.36	1.00	1.00	0.39	1.00	1.00	0.65	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	651	1812	1334	683	1812	1386	1086	1902	1373	384	1847	1309
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	476	20	131	501	112	57	381	224	57	137	57
RTOR Reduction (vph)	0	0	9	0	0	32	0	0	144	0	0	43
Lane Group Flow (vph)	148	476	11	131	501	80	57	381	80	57	137	14
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	6%	5%	4%	6%	1%	0%	1%	2%	1%	4%	7%
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)	73.4	63.9	63.9	72.6	63.5	63.5	29.8	29.8	29.8	29.8	29.8	29.8
Effective Green, g (s)	73.4	63.9	63.9	72.6	63.5	63.5	29.8	29.8	29.8	29.8	29.8	29.8
Actuated g/C Ratio	0.61	0.53	0.53	0.60	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
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)	481	964	710	487	958	733	269	472	340	95	458	325
v/s Ratio Prot	c0.02	0.26		0.02	c0.28			c0.20				0.07
v/s Ratio Perm	0.16		0.01	0.14		0.06	0.05		0.06	0.15		0.01
v/c Ratio	0.31	0.49	0.02	0.27	0.52	0.11	0.21	0.81	0.23	0.60	0.30	0.14
Uniform Delay, d1	11.1	17.8	13.2	11.0	18.4	14.1	35.8	42.4	36.0	39.8	36.6	34.3
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	0.4	1.8	0.0	0.3	2.0	0.3	0.4	9.8	0.4	9.8	0.4	0.1
Delay (s)	11.5	19.6	13.3	11.3	20.4	14.4	36.2	52.2	36.4	49.6	37.0	34.3
Level of Service	B	B	B	B	C	B	D	D	D	D	D	C
Approach Delay (s)	17.5			17.9				45.4			39.3	
Approach LOS	B			B				D			D	

Intersection Summary

HCM 2000 Control Delay	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Total Phase 1 2031

Afternoon Peak Hour

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		0	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			0.86	0.97	0.97		0.91	0.97	0.97		0.94	0.94
Frt			0.850		0.966			0.966			0.935	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1865	1512	1379	1690	0	1665	1748	0	1713	1652	0
Flt Permitted	0.154			0.354			0.498			0.312		
Satd. Flow (perm)	278	1865	1297	496	1690	0	791	1748	0	529	1652	0
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			102		18		11		29			
Link Speed (k/h)		50			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

Future Total Phase 1 2031

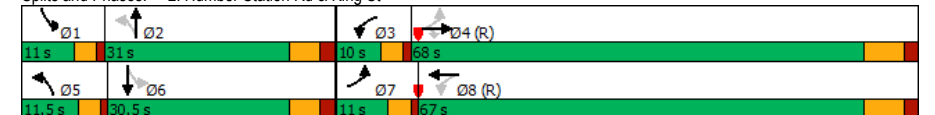
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	124	567	94	18	575	146	235	70	89
Future Volume (vph)	124	567	94	18	575	146	235	70	89
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	7	4		3	8	5	2	1	6
Permitted Phases	4		4	8		2		6	
Detector Phase	7	4	4	3	8	5	2	1	6
Switch Phase									
Minimum Initial (s)	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	11.2	30.2	11.0	30.2
Total Split (s)	11.0	68.0	68.0	10.0	67.0	11.5	31.0	11.0	30.5
Total Split (%)	9.2%	56.7%	56.7%	8.3%	55.8%	9.6%	25.8%	9.2%	25.4%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	3.0	4.0	3.0	4.0
All-Red Time (s)	1.0	2.0	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	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	4.0	6.2	4.0	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	None	C-Min	None	None	None	None
Act Effct Green (s)	74.6	68.4	68.4	70.5	61.3	34.1	25.0	30.5	21.3
Actuated g/C Ratio	0.62	0.57	0.57	0.59	0.51	0.28	0.21	0.25	0.18
v/c Ratio	0.48	0.53	0.12	0.05	0.86	0.51	0.81	0.34	0.50
Control Delay	15.8	19.8	2.9	9.4	37.0	39.3	62.1	34.6	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	19.8	2.9	9.4	37.0	39.3	62.1	34.6	40.9
LOS	B	B	A	A	D	D	E	C	D
Approach Delay		17.1			36.3		54.7		38.9
Approach LOS		B			D		D		D

Intersection Summary

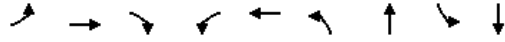
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 105
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 33.5
 Intersection Capacity Utilization 93.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
2: Humber Station Rd & King St

Future Total Phase 1 2031
Afternoon Peak Hour



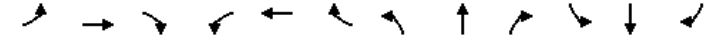
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	124	567	94	18	745	146	303	70	157
v/c Ratio	0.48	0.53	0.12	0.05	0.86	0.51	0.81	0.34	0.50
Control Delay	15.8	19.8	2.9	9.4	37.0	39.3	62.1	34.6	40.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	19.8	2.9	9.4	37.0	39.3	62.1	34.6	40.9
Queue Length 50th (m)	11.9	78.5	0.0	1.6	156.3	26.5	69.0	12.1	27.4
Queue Length 95th (m)	20.1	132.6	7.5	4.6	#236.3	44.6	#114.7	23.7	49.0
Internal Link Dist (m)		305.7			816.4		324.5		323.2
Turn Bay Length (m)	50.0		25.0	50.0				50.0	
Base Capacity (vph)	258	1062	783	336	873	288	377	206	357
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	0.48	0.53	0.12	0.05	0.85	0.51	0.80	0.34	0.44

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

Future Total Phase 1 2031
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	124	567	94	18	575	170	146	235	68	70	89	68
Future Volume (vph)	124	567	94	18	575	170	146	235	68	70	89	68
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		4.0	6.2		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	
Frpb, ped/bikes	1.00	1.00	0.86	1.00	0.97		1.00	0.97		1.00	0.94	
Frpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		0.96	1.00		0.98	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1713	1865	1297	1361	1690		1596	1748		1683	1652	
Flt Permitted	0.15	1.00	1.00	0.35	1.00		0.50	1.00		0.31	1.00	
Satd. Flow (perm)	277	1865	1297	506	1690		837	1748		552	1652	
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)	124	567	94	18	575	170	146	235	68	70	89	68
RTOR Reduction (vph)	0	0	43	0	9	0	0	9	0	0	24	0
Lane Group Flow (vph)	124	567	51	18	736	0	146	294	0	70	133	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	3%	3%	8%	28%	6%	7%	6%	1%	9%	3%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Actuated Green, G (s)	71.6	65.2	65.2	62.9	60.5		33.7	25.0		27.9	22.1	
Effective Green, g (s)	71.6	65.2	65.2	62.9	60.5		33.7	25.0		27.9	22.1	
Actuated g/C Ratio	0.60	0.54	0.54	0.52	0.50		0.28	0.21		0.23	0.18	
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4		4.0	6.2		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	
Lane Grp Cap (vph)	250	1013	704	282	852		290	364		183	304	
v/s Ratio Prot	c0.03	0.30		0.00	c0.44		c0.04	c0.17		0.02	0.08	
v/s Ratio Perm	0.27		0.04	0.03			0.10			0.07		
v/c Ratio	0.50	0.56	0.07	0.06	0.86		0.50	0.81		0.38	0.44	
Uniform Delay, d1	18.1	18.0	13.0	14.5	26.1		34.3	45.2		37.3	43.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	2.2	0.2	0.1	11.3		1.4	12.4		1.3	1.0	
Delay (s)	19.6	20.2	13.2	14.6	37.5		35.7	57.6		38.7	44.5	
Level of Service	B	C	B	B	D		D	E		D	D	
Approach Delay (s)		19.3			36.9			50.5			42.7	
Approach LOS		B			D			D			D	

Intersection Summary

HCM 2000 Control Delay	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

Future Total Phase 1 2031
Afternoon Peak Hour

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	1
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	0.90	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1765	1921	1921	1633	1825	1633
Flt Permitted	0.250				0.950	
Satd. Flow (perm)	464	1921	1921	1365	1635	1434
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				39		58
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

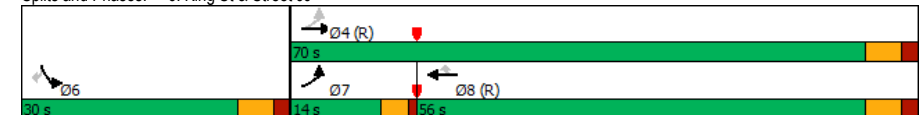
Future Total Phase 1 2031
Afternoon Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	176	588	697	90	154	58
Future Volume (vph)	176	588	697	90	154	58
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0	30.0
Total Split (s)	14.0	70.0	56.0	56.0	30.0	30.0
Total Split (%)	14.0%	70.0%	56.0%	56.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	4.0	6.0	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	None
Act Effct Green (s)	73.6	71.6	59.3	59.3	16.4	16.4
Actuated g/C Ratio	0.74	0.72	0.59	0.59	0.16	0.16
v/c Ratio	0.39	0.43	0.61	0.11	0.52	0.20
Control Delay	7.5	8.0	18.0	7.6	42.8	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	8.0	18.0	7.6	42.8	10.2
LOS	A	A	B	A	D	B
Approach Delay		7.9	16.8		33.9	
Approach LOS		A	B		C	

Intersection Summary

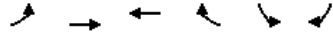
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 15.0
 Intersection Capacity Utilization 77.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Total Phase 1 2031
Afternoon Peak Hour

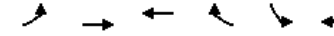


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	176	588	697	90	154	58
v/c Ratio	0.39	0.43	0.61	0.11	0.52	0.20
Control Delay	7.5	8.0	18.0	7.6	42.8	10.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.5	8.0	18.0	7.6	42.8	10.2
Queue Length 50th (m)	7.6	36.7	76.4	3.7	29.7	0.0
Queue Length 95th (m)	20.1	80.1	151.1	13.5	44.1	10.0
Internal Link Dist (m)		86.9	276.5		238.0	
Turn Bay Length (m)	50.0			25.0		
Base Capacity (vph)	472	1375	1139	825	438	388
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.43	0.61	0.11	0.35	0.15

Intersection Summary

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

Future Total Phase 1 2031
Afternoon Peak Hour



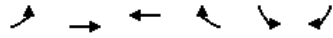
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	176	588	697	90	154	58
Future Volume (vph)	176	588	697	90	154	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.84	1.00	0.88
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1765	1921	1921	1365	1825	1434
Flt Permitted	0.25	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	464	1921	1921	1365	1825	1434
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	176	588	697	90	154	58
RTOR Reduction (vph)	0	0	0	16	0	48
Lane Group Flow (vph)	176	588	697	74	154	10
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	71.6	71.6	59.2	59.2	16.4	16.4
Effective Green, g (s)	71.6	71.6	59.2	59.2	16.4	16.4
Actuated g/C Ratio	0.72	0.72	0.59	0.59	0.16	0.16
Clearance Time (s)	4.0	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
Lane Grp Cap (vph)	441	1375	1137	808	299	235
v/s Ratio Prot	0.03	c0.31	c0.36		c0.08	
v/s Ratio Perm	0.25			0.05		0.01
v/c Ratio	0.40	0.43	0.61	0.09	0.52	0.04
Uniform Delay, d1	8.2	5.8	13.1	8.8	38.2	35.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	1.0	2.5	0.2	1.5	0.1
Delay (s)	8.8	6.8	15.5	9.0	39.7	35.2
Level of Service	A	A	B	A	D	D
Approach Delay (s)		7.2	14.8		38.5	
Approach LOS		A	B		D	

Intersection Summary

HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Total Phase 1 2031
Afternoon Peak Hour



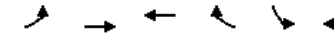
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1633	1662	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1633	1662	0
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

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

Future Total Phase 1 2031
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	742	730	90	0	58
Future Volume (Veh/h)	0	742	730	90	0	58
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	742	730	90	0	58
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.70				0.77	0.70
vC, conflicting volume	870				1572	830
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	599				1190	542
tC, single (s)	4.1				6.4	6.2
iC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	83
cM capacity (veh/h)	661				147	349
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	742	730	90	58	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	90	58	
cSH	1700	1700	1700	1700	349	
Volume to Capacity	0.00	0.44	0.43	0.05	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	4.6	
Control Delay (s)	0.0	0.0	0.0	0.0	17.3	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		17.3	
Approach LOS					C	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			58.0%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Total Phase 1 2031
Afternoon Peak Hour

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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	0	0	1921
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

Future Total Phase 1 2031
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	690	0	0	270
Future Volume (Veh/h)	0	0	690	0	0	270
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	0	690	0	0	270
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	0.84	0.84			0.84	
vC, conflicting volume	1060	790			740	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	979	659			600	
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	100			100	
cM capacity (veh/h)	216	361			798	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	0	690	270			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.41	0.16			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			54.4%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Total Phase 1 2031
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	0	1858	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

Future Total Phase 1 2031
Afternoon Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	690	270	
Future Volume (vph)	690	270	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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

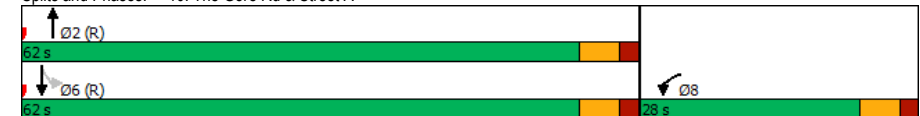
Lead-Lag Optimize?

Recall Mode	C-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.42	0.17	
Control Delay	6.9	4.5	
Queue Delay	0.0	0.0	
Total Delay	6.9	4.5	
LOS	A	A	
Approach Delay	6.9	4.5	
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: 0.42
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 62.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

Future Total Phase 1 2031
Afternoon Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	690	270
v/c Ratio	0.42	0.17
Control Delay	6.9	4.5
Queue Delay	0.0	0.0
Total Delay	6.9	4.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	83.4	30.8
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1631	1631
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.42	0.17

Intersection Summary

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

Future Total Phase 1 2031
Afternoon Peak Hour

	←	↖	↑	↗	→	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↔	↕
Traffic Volume (vph)	0	0	690	0	0	270
Future Volume (vph)	0	0	690	0	0	270
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Fr t			1.00			1.00
Fl t Protected			1.00			1.00
Satd. Flow (prot)			1921			1921
Fl t Permitted			1.00			1.00
Satd. Flow (perm)			1921			1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	0	690	0	0	270
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	690	0	0	270
Confl. Peds. (#/hr)	50	50	50	50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1477			1477
v/s Ratio Prot			c0.36			0.14
v/s Ratio Perm						
v/c Ratio			0.47			0.18
Uniform Delay, d1			3.8			2.8
Progression Factor			1.09			1.00
Incremental Delay, d2			1.0			0.3
Delay (s)			5.1			3.1
Level of Service			A			A
Approach Delay (s)	0.0		5.1			3.1
Approach LOS	A		A			A

Intersection Summary

HCM 2000 Control Delay	4.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

Future Total Phase 1 2031

48: Humber Station Rd & Street E

Afternoon Peak Hour



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		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												
Frt		0.865										
Flt Protected							0.950					
Satd. Flow (prot)	0	1662	0	0	1921	0	1825	1921	0	1921	1921	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	1662	0	0	1921	0	1825	1921	0	1921	1921	0
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.8			126.7			153.0			361.4	
Travel Time (s)		10.0			9.1			11.0			26.0	

Intersection Summary

Area Type: Other

HCM Unsignalized Intersection Capacity Analysis

Future Total Phase 1 2031

48: Humber Station Rd & Street E

Afternoon Peak Hour















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	0	11	0	0	0	24	160	0	0	53	0
Future Volume (vph)	0	0	11	0	0	0	24	160	0	0	53	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	0	11	0	0	0	24	160	0	0	53	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	11	0	24	160	0	53						
Volume Left (vph)	0	0	24	0	0	0						
Volume Right (vph)	11	0	0	0	0	0						
Hadj (s)	-0.60	0.00	0.50	0.00	0.00	0.00						
Departure Headway (s)	3.8	4.5	5.1	4.6	4.6	4.6						
Degree Utilization, x	0.01	0.00	0.03	0.20	0.00	0.07						
Capacity (veh/h)	880	776	699	778	779	760						
Control Delay (s)	6.9	7.5	7.0	7.5	6.4	6.8						
Approach Delay (s)	6.9	0.0	7.5	6.8								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.3
Level of Service	A
Intersection Capacity Utilization	30.8%
ICU Level of Service	A
Analysis Period (min)	15













Lanes and Geometrics
58: Humber Station Rd & Street Y

Future Total Phase 1 2031
Afternoon Peak Hour

						
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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1662	0	1825	1921	1921	0
Flt Permitted			0.950			
Satd. Flow (perm)	1662	0	1825	1921	1921	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	153.0	
Travel Time (s)	5.9			14.0	11.0	
Intersection Summary						
Area Type:	Other					

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

Future Total Phase 1 2031
Afternoon Peak Hour

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	2	6	166	63	0
Future Volume (vph)	0	2	6	166	63	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	2	6	166	63	0
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	2	6	166	63		
Volume Left (vph)	0	6	0	0		
Volume Right (vph)	2	0	0	0		
Hadj (s)	-0.60	0.50	0.00	0.00		
Departure Headway (s)	3.8	5.0	4.5	4.2		
Degree Utilization, x	0.00	0.01	0.21	0.07		
Capacity (veh/h)	881	702	782	854		
Control Delay (s)	6.8	6.9	7.5	7.5		
Approach Delay (s)	6.8	7.5		7.5		
Approach LOS	A	A		A		
Intersection Summary						
Delay			7.5			
Level of Service			A			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
64: Street JJ & Street Y

Future Total Phase 1 2031
Afternoon Peak Hour

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	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		0.865						0.914				
Flt Protected					0.950			0.999				
Satd. Flow (prot)	0	1662	0	0	1825	0	0	1754	0	0	1921	0
Flt Permitted					0.950			0.999				
Satd. Flow (perm)	0	1662	0	0	1825	0	0	1754	0	0	1921	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

Future Total Phase 1 2031
Afternoon Peak Hour

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	0	1	45	0	0	2	31	57	0	24	0
Future Volume (vph)	0	0	1	45	0	0	2	31	57	0	24	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	0	1	45	0	0	2	31	57	0	24	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	1	45	90	24								
Volume Left (vph)	0	45	2	0								
Volume Right (vph)	1	0	57	0								
Hadj (s)	-0.60	0.20	-0.38	0.00								
Departure Headway (s)	3.6	4.3	3.7	4.1								
Degree Utilization, x	0.00	0.05	0.09	0.03								
Capacity (veh/h)	968	808	961	864								
Control Delay (s)	6.6	7.6	7.0	7.2								
Approach Delay (s)	6.6	7.6	7.0	7.2								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.2
Level of Service	A
Intersection Capacity Utilization	22.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

Future Total Phase 1 2031
Afternoon Peak Hour

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		0.865							0.974			
Flt Protected					0.950				0.984			
Satd. Flow (prot)	0	1662	0	0	1825	0	0	1841	0	0	1921	0
Flt Permitted					0.950			0.984				
Satd. Flow (perm)	0	1662	0	0	1825	0	0	1841	0	0	1921	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

Future Total Phase 1 2031
Afternoon Peak Hour

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	0	8	4	0	0	12	17	7	0	11	0
Future Volume (vph)	0	0	8	4	0	0	12	17	7	0	11	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	0	8	4	0	0	12	17	7	0	11	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	8	4	36	11								
Volume Left (vph)	0	4	12	0								
Volume Right (vph)	8	0	7	0								
Hadj (s)	-0.60	0.20	-0.05	0.00								
Departure Headway (s)	3.4	4.2	3.9	4.0								
Degree Utilization, x	0.01	0.00	0.04	0.01								
Capacity (veh/h)	1036	842	920	901								
Control Delay (s)	6.4	7.2	7.0	7.0								
Approach Delay (s)	6.4	7.2	7.0	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.0								
Level of Service				A								
Intersection Capacity Utilization			29.8%				ICU Level of Service			A		
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

Future Total Phase 1 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.865						0.963				
Flt Protected					0.950							
Satd. Flow (prot)	0	1662	0	0	1825	0	0	1850	0	0	1921	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1662	0	0	1825	0	0	1850	0	0	1921	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

Future Total Phase 1 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	1	45	0	0	2	149	57	0	118	0
Future Volume (Veh/h)	0	0	1	45	0	0	2	149	57	0	118	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	0	1	45	0	0	2	149	57	0	118	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)								262				
pX, platoon unblocked												
vC, conflicting volume	350	428	218	400	400	228	168			256		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	350	428	218	400	400	228	168			256		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	100	100			100		
cM capacity (veh/h)	545	478	758	482	496	782	1361			1264		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1	45	208	118								
Volume Left	0	45	2	0								
Volume Right	1	0	57	0								
cSH	758	482	1361	1264								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	2.4	0.0	0.0								
Control Delay (s)	9.8	13.2	0.1	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.8	13.2	0.1	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay				1.7								
Intersection Capacity Utilization			32.3%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

Future Total Phase 1 2031
Afternoon Peak Hour

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	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		0.865										
Flt Protected								0.992				
Satd. Flow (prot)	0	1662	0	0	1921	0	0	1906	0	0	1921	0
Flt Permitted								0.992				
Satd. Flow (perm)	0	1662	0	0	1921	0	0	1906	0	0	1921	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

Future Total Phase 1 2031
Afternoon Peak Hour

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	0	8	0	0	0	12	58	0	0	37	0
Future Volume (vph)	0	0	8	0	0	0	12	58	0	0	37	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	0	8	0	0	0	12	58	0	0	37	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	8	0	70	37								
Volume Left (vph)	0	0	12	0								
Volume Right (vph)	8	0	0	0								
Hadj (s)	-0.60	0.00	0.03	0.00								
Departure Headway (s)	3.5	4.1	4.0	4.0								
Degree Utilization, x	0.01	0.00	0.08	0.04								
Capacity (veh/h)	986	861	888	895								
Control Delay (s)	6.6	7.1	7.3	7.1								
Approach Delay (s)	6.6	0.0	7.3	7.1								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.2
Level of Service	A
Intersection Capacity Utilization	31.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
88: Humber Station Rd & Street EE

Future Total Phase 1 2031
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
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

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

Future Total Phase 1 2031
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	489	209	0
Future Volume (Veh/h)	0	0	0	489	209	0
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	0	0	489	209	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)				347		
pX, platoon unblocked	0.92					
vC, conflicting volume	798	309	259			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	740	309	259			
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	100	100			
cM capacity (veh/h)	328	674	1261			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	489	209			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1261	1700			
Volume to Capacity	0.00	0.00	0.12			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					

Intersection Summary

Average Delay		0.0			
Intersection Capacity Utilization		29.1%	ICU Level of Service	A	
Analysis Period (min)		15			

Lanes and Geometrics
1: The Gore Rd & King St

FTPh1 2031 Without Improvements
Afternoon Peak Hour

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		0.96	0.97		0.91	0.95		0.96		0.96
Frt		0.994			0.973			0.944				0.956
Flt Protected	0.950			0.950			0.950		0.950			0.950
Satd. Flow (prot)	1562	1730	0	1681	1709	0	1261	1633	0	1681	1760	0
Flt Permitted	0.169			0.301			0.602		0.135			0.135
Satd. Flow (perm)	278	1730	0	512	1709	0	726	1633	0	239	1760	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			11			29				20
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

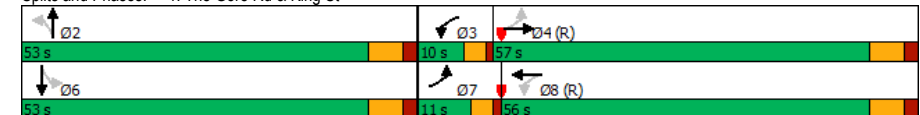
FTPh1 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	476	131	501	57	381	57	137
Future Volume (vph)	148	476	131	501	57	381	57	137
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)	11.0	57.0	10.0	56.0	53.0	53.0	53.0	53.0
Total Split (%)	9.2%	47.5%	8.3%	46.7%	44.2%	44.2%	44.2%	44.2%
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)	61.2	50.7	59.1	49.7	45.3	45.3	45.3	45.3
Actuated g/C Ratio	0.51	0.42	0.49	0.41	0.38	0.38	0.38	0.38
v/c Ratio	0.66	0.68	0.41	0.86	0.21	0.95	0.63	0.29
Control Delay	31.4	33.9	19.4	45.4	27.1	61.1	63.9	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	33.9	19.4	45.4	27.1	61.1	63.9	24.2
LOS	C	C	B	D	C	E	E	C
Approach Delay		33.3		40.9		58.2		33.2
Approach LOS		C		D		E		C

Intersection Summary

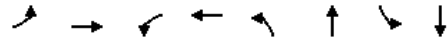
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 42.9
 Intersection Capacity Utilization 103.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service G

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



Queues
1: The Gore Rd & King St

FTP1 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	496	131	613	57	605	57	194
v/c Ratio	0.66	0.68	0.41	0.86	0.21	0.95	0.63	0.29
Control Delay	31.4	33.9	19.4	45.4	27.1	61.1	63.9	24.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	33.9	19.4	45.4	27.1	61.1	63.9	24.2
Queue Length 50th (m)	18.6	97.8	16.1	134.6	9.1	133.5	11.0	28.4
Queue Length 95th (m)	#35.6	136.8	27.0	#200.9	19.9	#209.8	#34.0	47.0
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)	225	743	318	725	281	651	92	695
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	0.66	0.67	0.41	0.85	0.20	0.93	0.62	0.28

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

FTP1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	476	20	131	501	112	57	381	224	57	137	57
Future Volume (vph)	148	476	20	131	501	112	57	381	224	57	137	57
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	0.97		1.00	0.95		1.00	0.96	
Flpb, ped/bikes	1.00	1.00		0.99	1.00		0.91	1.00		1.00	1.00	
Frpt	1.00	0.99		1.00	0.97		1.00	0.94		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	1730		1664	1708		1146	1634		1681	1760	
Flt Permitted	0.17	1.00		0.30	1.00		0.60	1.00		0.14	1.00	
Satd. Flow (perm)	278	1730		527	1708		726	1634		240	1760	
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	476	20	131	501	112	57	381	224	57	137	57
RTOR Reduction (vph)	0	1	0	0	6	0	0	18	0	0	12	0
Lane Group Flow (vph)	148	495	0	131	607	0	57	587	0	57	182	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	2		6	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	58.6	50.7		56.4	49.6		45.3	45.3		45.3	45.3	
Effective Green, g (s)	58.6	50.7		56.4	49.6		45.3	45.3		45.3	45.3	
Actuated g/C Ratio	0.49	0.42		0.47	0.41		0.38	0.38		0.38	0.38	
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)	220	730		312	705		274	616		90	664	
v/s Ratio Prot	c0.04	0.29		0.02	c0.36			c0.36			0.10	
v/s Ratio Perm	0.28			0.17			0.08			0.24		
v/c Ratio	0.67	0.68		0.42	0.86		0.21	0.95		0.63	0.27	
Uniform Delay, d1	22.4	28.0		20.0	32.0		25.2	36.3		30.6	25.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.9	5.0		0.9	13.0		0.4	25.0		13.7	0.2	
Delay (s)	30.2	33.1		20.9	45.1		25.6	61.3		44.2	26.2	
Level of Service	C	C		C	D		C	E		D	C	
Approach Delay (s)		32.4			40.8			58.2			30.3	
Approach LOS		C			D			E			C	

Intersection Summary

HCM 2000 Control Delay	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
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

FTPh1 2031 Without Improvements
Afternoon Peak Hour

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		0.98			0.97			0.95			0.94	
Frt		0.984			0.970			0.980			0.960	
Flt Protected		0.992			0.999			0.984			0.985	
Satd. Flow (prot)	0	1721	0	0	1735	0	0	1754	0	0	1674	0
Flt Permitted		0.678			0.973			0.778			0.721	
Satd. Flow (perm)	0	1170	0	0	1689	0	0	1346	0	0	1204	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			16			8			18	
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

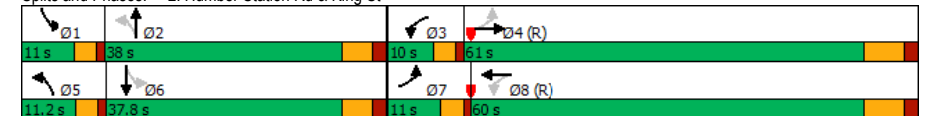
FTPh1 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	124	567	18	575	146	235	70	89
Future Volume (vph)	124	567	18	575	146	235	70	89
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	61.0	10.0	60.0	11.2	38.0	11.0	37.8
Total Split (%)	9.2%	50.8%	8.3%	50.0%	9.3%	31.7%	9.2%	31.5%
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)		63.6		63.6		42.8		42.8
Actuated g/C Ratio		0.53		0.53		0.36		0.36
v/c Ratio		1.26		0.85		0.93		0.51
Control Delay		157.0		34.1		63.4		32.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		157.0		34.1		63.4		32.9
LOS		F		C		E		C
Approach Delay		157.0		34.1		63.4		32.9
Approach LOS		F		C		E		C

Intersection Summary

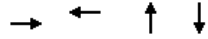
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.26
 Intersection Signal Delay: 83.3
 Intersection LOS: F
 Intersection Capacity Utilization 136.6%
 ICU Level of Service H
 Analysis Period (min) 15

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



Queues
2: Humber Station Rd & King St

FTP1 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	785	763	449	227
v/c Ratio	1.26	0.85	0.93	0.51
Control Delay	157.0	34.1	63.4	32.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	157.0	34.1	63.4	32.9
Queue Length 50th (m)	~241.4	150.3	103.3	40.0
Queue Length 95th (m)	#318.0	#219.4	#169.2	66.0
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	623	902	485	441
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	1.26	0.85	0.93	0.51

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

FTP1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	124	567	94	18	575	170	146	235	68	70	89	68
Future Volume (vph)	124	567	94	18	575	170	146	235	68	70	89	68
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		0.98			0.97			0.98			0.96	
Frpb, ped/bikes		1.00			1.00			0.98			0.99	
Frt		0.98			0.97			0.98			0.96	
Flt Protected		0.99			1.00			0.98			0.98	
Satd. Flow (prot)		1714			1734			1711			1652	
Flt Permitted		0.68			0.97			0.78			0.72	
Satd. Flow (perm)		1171			1690			1353			1209	
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)	124	567	94	18	575	170	146	235	68	70	89	68
RTOR Reduction (vph)	0	4	0	0	8	0	0	5	0	0	12	0
Lane Group Flow (vph)	0	781	0	0	755	0	0	444	0	0	215	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	6%	0%	9%	3%	6%	2%
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)		63.6			63.6			42.8			42.8	
Effective Green, g (s)		63.6			63.6			42.8			42.8	
Actuated g/C Ratio		0.53			0.53			0.36			0.36	
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)		620			895			482			431	
v/s Ratio Prot												
v/s Ratio Perm		c0.67			0.45			c0.33			0.18	
v/c Ratio		1.26			0.84			0.92			0.50	
Uniform Delay, d1		28.2			24.0			37.0			30.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		129.7			7.3			23.0			0.9	
Delay (s)		157.9			31.3			60.0			31.1	
Level of Service		F			C			E			C	
Approach Delay (s)		157.9			31.3			60.0			31.1	
Approach LOS		F			C			E			C	

Intersection Summary

HCM 2000 Control Delay	81.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	136.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FTP1 2031 Without Improvements
Afternoon Peak Hour

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	0.963	
Flt Protected	0.950				0.965	
Satd. Flow (prot)	1730	1883	1883	1601	1692	0
Flt Permitted	0.240				0.965	
Satd. Flow (perm)	437	1883	1883	1338	1564	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				40	18	
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

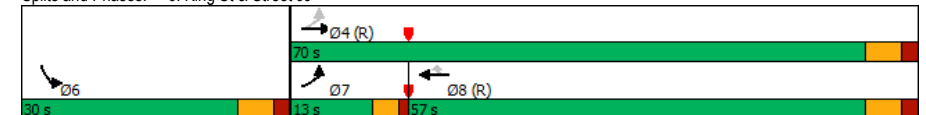
FTP1 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	176	588	697	90	154
Future Volume (vph)	176	588	697	90	154
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	70.0	57.0	57.0	30.0
Total Split (%)	13.0%	70.0%	57.0%	57.0%	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)	72.2	70.2	57.8	57.8	17.8
Actuated g/C Ratio	0.72	0.70	0.58	0.58	0.18
v/c Ratio	0.42	0.45	0.64	0.11	0.67
Control Delay	8.3	8.7	19.2	7.6	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	8.7	19.2	7.6	44.8
LOS	A	A	B	A	D
Approach Delay		8.6	17.9		44.8
Approach LOS		A	B		D

Intersection Summary

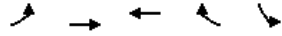
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.67
 Intersection Signal Delay: 17.1
 Intersection Capacity Utilization 78.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FTP1 2031 Without Improvements
Afternoon Peak Hour

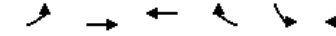


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	176	588	697	90	212
v/c Ratio	0.42	0.45	0.64	0.11	0.67
Control Delay	8.3	8.7	19.2	7.6	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	8.7	19.2	7.6	44.8
Queue Length 50th (m)	8.9	42.8	85.7	4.0	37.3
Queue Length 95th (m)	20.2	81.1	150.1	13.1	56.9
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	435	1321	1094	793	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	0.40	0.45	0.64	0.11	0.51

Intersection Summary

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

FTP1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	176	588	697	90	154	58
Future Volume (vph)	176	588	697	90	154	58
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	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.84	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	0.96	
Satd. Flow (prot)	1730	1883	1883	1338	1692	
FlT Permitted	0.24	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	438	1883	1883	1338	1692	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	176	588	697	90	154	58
RTOR Reduction (vph)	0	0	0	17	15	0
Lane Group Flow (vph)	176	588	697	73	197	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)	70.2	70.2	57.8	57.8	17.8	
Effective Green, g (s)	70.2	70.2	57.8	57.8	17.8	
Actuated g/C Ratio	0.70	0.70	0.58	0.58	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)	416	1321	1088	773	301	
v/s Ratio Prot	0.04	c0.31	c0.37		c0.12	
v/s Ratio Perm	0.26			0.05		
v/c Ratio	0.42	0.45	0.64	0.09	0.66	
Uniform Delay, d1	9.0	6.5	14.1	9.4	38.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.7	1.1	2.9	0.2	5.1	
Delay (s)	9.7	7.5	17.0	9.7	43.3	
Level of Service	A	A	B	A	D	
Approach Delay (s)		8.0	16.2		43.3	
Approach LOS		A	B		D	

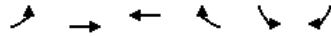
Intersection Summary

HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	78.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FTPh1 2031 Without Improvements
Afternoon Peak Hour



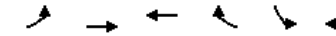
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1601	1629	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1601	1629	0
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

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

FTPh1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	742	730	90	0	58
Future Volume (Veh/h)	0	742	730	90	0	58
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	742	730	90	0	58
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.73				0.81	0.73
vC, conflicting volume	870				1572	830
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	640				1179	585
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	83
cM capacity (veh/h)	662				155	343
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	742	730	90	58	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	90	58	
cSH	1700	1700	1700	1700	343	
Volume to Capacity	0.00	0.44	0.43	0.05	0.17	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	4.7	
Control Delay (s)	0.0	0.0	0.0	0.0	17.6	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		17.6	
Approach LOS					C	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			58.0%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FTP1 2031 Without Improvements
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	1821	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	0	1821	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
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

FTP1 2031 Without Improvements
Afternoon Peak Hour

	↑	↓	Ø8
Lane Group	NBT	SBT	Ø8
Lane Configurations	↖	↗	
Traffic Volume (vph)	690	270	
Future Volume (vph)	690	270	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases			
Detector Phase	2	6	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	28.0
Total Split (s)	62.0	62.0	28.0
Total Split (%)	68.9%	68.9%	31%
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

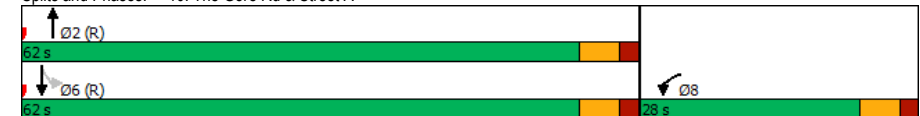
Lead-Lag Optimize?

Recall Mode	C-Min	C-Min	None
Act Effct Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/c Ratio	0.43	0.17	
Control Delay	6.5	4.5	
Queue Delay	0.0	0.0	
Total Delay	6.5	4.5	
LOS	A	A	
Approach Delay	6.5	4.5	
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: 0.43
 Intersection Signal Delay: 6.0
 Intersection Capacity Utilization 62.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

FTPPh1 2031 Without Improvements
Afternoon Peak Hour

	↑	↓
Lane Group	NBT	SBT
Lane Group Flow (vph)	690	270
v/c Ratio	0.43	0.17
Control Delay	6.5	4.5
Queue Delay	0.0	0.0
Total Delay	6.5	4.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	99.0	30.9
Internal Link Dist (m)	241.4	350.2
Turn Bay Length (m)		
Base Capacity (vph)	1598	1598
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.43	0.17

Intersection Summary

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

FTPPh1 2031 Without Improvements
Afternoon Peak Hour

	↙	↘	↑	↗	↖	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↖	↓
Traffic Volume (vph)	0	0	690	0	0	270
Future Volume (vph)	0	0	690	0	0	270
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
Lane Util. Factor			1.00			1.00
Frpb, ped/bikes			1.00			1.00
Flpb, ped/bikes			1.00			1.00
Frnt			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	690	0	0	270
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	690	0	0	270
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)			69.2			69.2
Effective Green, g (s)			69.2			69.2
Actuated g/C Ratio			0.77			0.77
Clearance Time (s)			6.0			6.0
Vehicle Extension (s)			3.0			3.0
Lane Grp Cap (vph)			1447			1447
v/s Ratio Prot			0.37			0.14
v/s Ratio Perm						
v/c Ratio			0.48			0.19
Uniform Delay, d1			3.8			2.8
Progression Factor			1.00			1.00
Incremental Delay, d2			1.1			0.3
Delay (s)			4.9			3.1
Level of Service			A			A
Approach Delay (s)	0.0		4.9			3.1
Approach LOS	A		A			A
Intersection Summary						
HCM 2000 Control Delay			4.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			62.0%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics

FTPh1 2031 Without Improvements

48: Humber Station Rd & Street E

Afternoon Peak Hour

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		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												
Frt		0.865										
Flt Protected							0.950					
Satd. Flow (prot)	0	1629	0	0	1883	0	1789	1883	0	1883	1883	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	1629	0	0	1883	0	1789	1883	0	1883	1883	0
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

HCM Unsignalized Intersection Capacity Analysis

FTPh1 2031 Without Improvements

48: Humber Station Rd & Street E

Afternoon Peak Hour

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	0	11	0	0	0	24	160	0	0	53	0
Future Volume (vph)	0	0	11	0	0	0	24	160	0	0	53	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	0	11	0	0	0	24	160	0	0	53	0
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total (vph)	11	0	24	160	0	53						
Volume Left (vph)	0	0	24	0	0	0						
Volume Right (vph)	11	0	0	0	0	0						
Hadj (s)	-0.57	0.00	0.53	0.03	0.00	0.03						
Departure Headway (s)	3.9	4.5	5.1	4.6	4.6	4.7						
Degree Utilization, x	0.01	0.00	0.03	0.20	0.00	0.07						
Capacity (veh/h)	872	775	694	772	778	754						
Control Delay (s)	6.9	7.5	7.1	7.6	6.4	6.8						
Approach Delay (s)	6.9	0.0	7.5	6.8								
Approach LOS	A	A	A	A								

Intersection Summary

Delay: 7.3
Level of Service: A
Intersection Capacity Utilization: 18.4%
ICU Level of Service: A
Analysis Period (min): 15

Lanes and Geometrics
58: Humber Station Rd & Street Y

FTPPh1 2031 Without Improvements
Afternoon Peak Hour

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)	45.0	0.0	50.0			0.0
Storage Lanes	0	0	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.865					
Flt Protected			0.950			
Satd. Flow (prot)	1629	0	1789	1883	1883	0
Flt Permitted			0.950			
Satd. Flow (perm)	1629	0	1789	1883	1883	0
Link Speed (k/h)	50			50	50	
Link Distance (m)	81.8			194.3	154.4	
Travel Time (s)	5.9			14.0	11.1	

Intersection Summary

Area Type: Other

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

FTPPh1 2031 Without Improvements
Afternoon Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Stop	Stop	
Traffic Volume (vph)	0	2	6	166	63	0
Future Volume (vph)	0	2	6	166	63	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	2	6	166	63	0
Direction, Lane #	EB 1	NB 1	NB 2	SB 1		
Volume Total (vph)	2	6	166	63		
Volume Left (vph)	0	6	0	0		
Volume Right (vph)	2	0	0	0		
Hadj (s)	-0.57	0.53	0.03	0.03		
Departure Headway (s)	3.9	5.1	4.6	4.2		
Degree Utilization, x	0.00	0.01	0.21	0.07		
Capacity (veh/h)	873	697	776	847		
Control Delay (s)	6.9	6.9	7.6	7.5		
Approach Delay (s)	6.9	7.6	7.5			
Approach LOS	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
64: Street JJ & Street Y

FTP1 2031 Without Improvements
Afternoon Peak Hour

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		0.865						0.914				
Flt Protected					0.950			0.999				
Satd. Flow (prot)	0	1629	0	0	1789	0	0	1720	0	0	1883	0
Flt Permitted					0.950			0.999				
Satd. Flow (perm)	0	1629	0	0	1789	0	0	1720	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

FTP1 2031 Without Improvements
Afternoon Peak Hour

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	0	1	45	0	0	2	31	57	0	24	0
Future Volume (vph)	0	0	1	45	0	0	2	31	57	0	24	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	0	1	45	0	0	2	31	57	0	24	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	1	45	90	24								
Volume Left (vph)	0	45	2	0								
Volume Right (vph)	1	0	57	0								
Hadj (s)	-0.57	0.23	-0.34	0.03								
Departure Headway (s)	3.6	4.4	3.7	4.1								
Degree Utilization, x	0.00	0.05	0.09	0.03								
Capacity (veh/h)	958	801	952	856								
Control Delay (s)	6.6	7.6	7.1	7.2								
Approach Delay (s)	6.6	7.6	7.1	7.2								
Approach LOS	A	A	A	A								

Intersection Summary

Delay		7.2		
Level of Service		A		
Intersection Capacity Utilization	22.7%		ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
65: Street I & Street Y

FTP1 2031 Without Improvements
Afternoon Peak Hour

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		0.865							0.974			
Flt Protected					0.950				0.984			
Satd. Flow (prot)	0	1629	0	0	1789	0	0	1805	0	0	1883	0
Flt Permitted					0.950				0.984			
Satd. Flow (perm)	0	1629	0	0	1789	0	0	1805	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

FTP1 2031 Without Improvements
Afternoon Peak Hour

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	0	8	4	0	0	12	17	7	0	11	0
Future Volume (vph)	0	0	8	4	0	0	12	17	7	0	11	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	0	8	4	0	0	12	17	7	0	11	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	8	4	36	11								
Volume Left (vph)	0	4	12	0								
Volume Right (vph)	8	0	7	0								
Hadj (s)	-0.57	0.23	-0.02	0.03								
Departure Headway (s)	3.4	4.2	3.9	4.0								
Degree Utilization, x	0.01	0.00	0.04	0.01								
Capacity (veh/h)	1026	835	912	893								
Control Delay (s)	6.5	7.3	7.1	7.0								
Approach Delay (s)	6.5	7.3	7.1	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			7.0									
Level of Service			A									
Intersection Capacity Utilization			29.8%				ICU Level of Service			A		
Analysis Period (min)			15									

Lanes and Geometrics
84: Street JJ & Street EE

FTPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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		0.865						0.963				
Flt Protected					0.950							
Satd. Flow (prot)	0	1629	0	0	1789	0	0	1814	0	0	1883	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1629	0	0	1789	0	0	1814	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

FTPh1 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	1	45	0	0	2	149	57	0	118	0
Future Volume (Veh/h)	0	0	1	45	0	0	2	149	57	0	118	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	0	1	45	0	0	2	149	57	0	118	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)								262				
pX, platoon unblocked												
vC, conflicting volume	350	428	218	400	400	228	168			256		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	350	428	218	400	400	228	168			256		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	100	100			100		
cM capacity (veh/h)	541	475	753	479	493	777	1349			1253		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1	45	208	118								
Volume Left	0	45	2	0								
Volume Right	1	0	57	0								
cSH	753	479	1349	1253								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	2.4	0.0	0.0								
Control Delay (s)	9.8	13.3	0.1	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.8	13.3	0.1	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay				1.7								
Intersection Capacity Utilization			32.3%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FTP1 2031 Without Improvements
Afternoon Peak Hour



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	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		0.865										
Flt Protected								0.992				
Satd. Flow (prot)	0	1629	0	0	1883	0	0	1868	0	0	1883	0
Flt Permitted								0.992				
Satd. Flow (perm)	0	1629	0	0	1883	0	0	1868	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

FTP1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	8	0	0	0	12	58	0	0	37	0
Future Volume (Veh/h)	0	0	8	0	0	0	12	58	0	0	37	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	0	8	0	0	0	12	58	0	0	37	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)												
pX, platoon unblocked												
vC, conflicting volume	219	219	137	227	219	158	87				108	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	219	219	137	227	219	158	87				108	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	99	100	100	100	99				100	
cM capacity (veh/h)	628	617	835	615	617	813	1444				1419	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	8	0	70	37								
Volume Left	0	0	12	0								
Volume Right	8	0	0	0								
cSH	835	1700	1444	1419								
Volume to Capacity	0.01	0.00	0.01	0.00								
Queue Length 95th (m)	0.2	0.0	0.2	0.0								
Control Delay (s)	9.4	0.0	1.3	0.0								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.4	0.0	1.3	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				1.5								
Intersection Capacity Utilization			31.1%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FTP1 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1883	0
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

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

FTP1 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	489	209	0
Future Volume (Veh/h)	0	0	0	489	209	0
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	0	0	489	209	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)				347		
pX, platoon unblocked						
vC, conflicting volume	798	309	259			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	798	309	259			
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	100	100			
cM capacity (veh/h)	325	670	1250			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	489	209			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1250	1700			
Volume to Capacity	0.00	0.00	0.12			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					

Intersection Summary

Average Delay		0.0			
Intersection Capacity Utilization		29.1%	ICU Level of Service	A	
Analysis Period (min)		15			

Lanes and Geometrics
1: The Gore Rd & King St

Future Background 2031 Ph2
Morning Peak Hour

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)	1697	1779	1570	1713	1779	1420	1765	1779	1570	1713	1902	1633
Flt Permitted	0.530			0.540			0.230			0.708		
Satd. Flow (perm)	878	1779	1346	908	1779	1218	404	1779	1346	1133	1902	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
1: The Gore Rd & King St

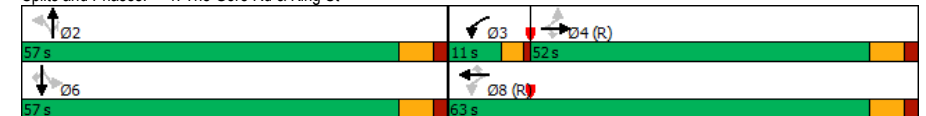
Future Background 2031 Ph2
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Traffic Volume (vph)	51	266	171	49	392	27	11	75	44	100	378	125
Future Volume (vph)	51	266	171	49	392	27	11	75	44	100	378	125
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8		2		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)	67.7	67.7	67.7	79.2	76.6	76.6	30.2	30.2	30.2	30.2	30.2	30.2
Actuated g/C Ratio	0.56	0.56	0.56	0.66	0.64	0.64	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.10	0.27	0.21	0.08	0.35	0.03	0.11	0.17	0.11	0.35	0.79	0.28
Control Delay	16.6	16.6	3.3	9.2	12.3	3.1	33.4	33.6	3.3	38.5	53.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	16.6	3.3	9.2	12.3	3.1	33.4	33.6	3.3	38.5	53.6	6.8
LOS	B	B	A	A	B	A	C	C	A	D	D	A
Approach Delay		11.9			11.4		23.3				41.4	
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: 23.2
 Intersection Capacity Utilization 71.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
1: The Gore Rd & King St

Future Background 2031 Ph2
Morning Peak Hour




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	266	171	49	392	27	11	75	44	100	378	125
v/c Ratio	0.10	0.27	0.21	0.08	0.35	0.03	0.11	0.17	0.11	0.35	0.79	0.28
Control Delay	16.6	16.6	3.3	9.2	12.3	3.1	33.4	33.6	3.3	38.5	53.6	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	16.6	3.3	9.2	12.3	3.1	33.4	33.6	3.3	38.5	53.6	6.8
Queue Length 50th (m)	5.7	32.9	0.0	3.8	41.2	0.0	2.1	14.4	0.0	20.2	86.8	0.0
Queue Length 95th (m)	15.4	61.2	12.4	10.4	74.0	3.6	6.7	24.4	4.2	32.9	110.2	13.5
Internal Link Dist (m)	339.2			183.4			604.6			554.8		
Turn Bay Length (m)				139.9			25.0			199.9		
Base Capacity (vph)	495	1003	834	648	1136	789	169	747	605	475	798	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	0.10	0.27	0.21	0.08	0.35	0.03	0.07	0.10	0.07	0.21	0.47	0.19

Intersection Summary

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

Future Background 2031 Ph2
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	266	171	49	392	27	11	75	44	100	378	125
Future Volume (vph)	51	266	171	49	392	27	11	75	44	100	378	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)	1574	1779	1346	1648	1779	1218	1681	1779	1346	1520	1902	1400
Flt Permitted	0.53	1.00	1.00	0.54	1.00	1.00	0.23	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	879	1779	1346	936	1779	1218	407	1779	1346	1133	1902	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	266	171	49	392	27	11	75	44	100	378	125
RTOR Reduction (vph)	0	0	76	0	0	10	0	0	33	0	0	94
Lane Group Flow (vph)	51	266	95	49	392	17	11	75	11	100	378	31
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	4%	8%	4%	3%	8%	15%	0%	8%	4%	3%	1%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4		3		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	66.9	66.9	66.9	76.6	76.6	76.6	30.2	30.2	30.2	30.2	30.2	30.2
Effective Green, g (s)	66.9	66.9	66.9	76.6	76.6	76.6	30.2	30.2	30.2	30.2	30.2	30.2
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)	490	991	750	631	1135	777	102	447	338	285	478	352
v/s Ratio Prot	0.15		0.00		c0.22		0.04		c0.20		c0.20	
v/s Ratio Perm	0.06		0.07		0.05		0.01		0.03		0.02	
v/c Ratio	0.10	0.27	0.13	0.08	0.35	0.02	0.11	0.17	0.03	0.35	0.79	0.09
Uniform Delay, d1	12.5	13.8	12.6	8.3	10.1	8.0	34.5	35.1	33.9	36.9	41.9	34.4
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	0.4	0.7	0.3	0.1	0.8	0.1	0.5	0.2	0.0	0.7	8.7	0.1
Delay (s)	12.9	14.5	13.0	8.3	10.9	8.0	35.0	35.3	33.9	37.6	50.6	34.5
Level of Service	B	B	B	A	B	A	D	D	C	D	D	C
Approach Delay (s)	13.8			10.5			34.8			45.1		
Approach LOS	B			B			C			D		

Intersection Summary

HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Background 2031 Ph2

Morning Peak Hour

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		0.98	0.91		0.98
Frt			0.850			0.850			0.972			0.978
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1570	1590	1795	1585	1521	1583	0	1649	1807	0
Flt Permitted	0.433			0.495			0.699			0.695		
Satd. Flow (perm)	758	1812	1378	781	1795	1392	1017	1583	0	1097	1807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			122			122			11			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

Future Background 2031 Ph2

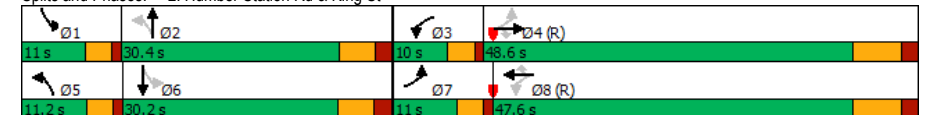
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↖	↗
Traffic Volume (vph)	32	347	103	73	456	42	17	77	17	77
Future Volume (vph)	32	347	103	73	456	42	17	77	17	77
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)	63.5	55.0	55.0	65.0	57.3	57.3	23.3	18.5	23.2	18.2
Actuated g/C Ratio	0.64	0.55	0.55	0.65	0.57	0.57	0.23	0.18	0.23	0.18
v/c Ratio	0.06	0.35	0.13	0.13	0.44	0.05	0.06	0.32	0.06	0.27
Control Delay	9.0	17.1	2.9	8.9	18.0	0.1	23.8	32.6	23.7	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	17.1	2.9	8.9	18.0	0.1	23.8	32.6	23.7	32.6
LOS	A	B	A	A	B	A	C	C	C	C
Approach Delay		13.5			15.5			31.3		31.2
Approach LOS		B			B			C		C

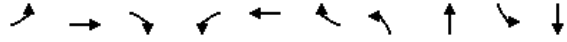
Intersection Summary

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: 0.44
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 61.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



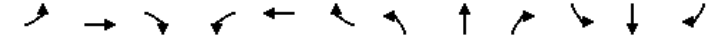
Queues
2: Humber Station Rd & King St
Future Background 2031 Ph2
Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	32	347	103	73	456	42	17	95	17	90
v/c Ratio	0.06	0.35	0.13	0.13	0.44	0.05	0.06	0.32	0.06	0.27
Control Delay	9.0	17.1	2.9	8.9	18.0	0.1	23.8	32.6	23.7	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	17.1	2.9	8.9	18.0	0.1	23.8	32.6	23.7	32.6
Queue Length 50th (m)	1.3	30.7	0.0	3.1	42.9	0.0	2.9	15.5	2.9	15.0
Queue Length 95th (m)	7.2	76.0	7.5	13.5	107.4	0.0	6.7	27.5	6.7	26.6
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)	554	1005	819	562	1031	851	274	394	294	439
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	0.06	0.35	0.13	0.13	0.44	0.05	0.06	0.24	0.06	0.21

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St
Future Background 2031 Ph2
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	32	347	103	73	456	42	17	77	18	17	77	13
Future Volume (vph)	32	347	103	73	456	42	17	77	18	17	77	13
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	0.98		1.00	0.98	
Flpb, ped/bikes	0.98	1.00	1.00	0.97	1.00	1.00	0.94	1.00		0.94	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.98	
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)	1697	1812	1378	1548	1795	1392	1426	1582		1547	1808	
Flt Permitted	0.43	1.00	1.00	0.49	1.00	1.00	0.70	1.00		0.70	1.00	
Satd. Flow (perm)	774	1812	1378	806	1795	1392	1049	1582		1133	1808	
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)	32	347	103	73	456	42	17	77	18	17	77	13
RTOR Reduction (vph)	0	0	50	0	0	20	0	9	0	0	7	0
Lane Group Flow (vph)	32	347	53	73	456	22	17	86	0	17	83	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	2%	6%	4%	11%	7%	3%	16%	2%	72%	7%	2%	3%
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)	55.8	51.8	51.8	58.8	53.3	53.3	21.3	18.5		21.1	18.3	
Effective Green, g (s)	55.8	51.8	51.8	58.8	53.3	53.3	21.3	18.5		21.1	18.3	
Actuated g/C Ratio	0.56	0.52	0.52	0.59	0.53	0.53	0.21	0.18		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)	468	938	713	514	956	741	233	292		250	330	
v/s Ratio Prot	0.00	0.19		c0.01	c0.25		c0.00	c0.05		0.00	0.05	
v/s Ratio Perm	0.04		0.04	0.08		0.02	0.01			0.01		
v/c Ratio	0.07	0.37	0.07	0.14	0.48	0.03	0.07	0.29		0.07	0.25	
Uniform Delay, d1	10.2	14.4	12.1	9.1	14.6	11.1	31.3	35.1		31.5	35.0	
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	0.1	1.1	0.2	0.1	1.7	0.1	0.1	0.6		0.1	0.4	
Delay (s)	10.3	15.5	12.3	9.2	16.3	11.2	31.5	35.7		31.6	35.4	
Level of Service	B	B	B	A	B	B	C	D		C	D	
Approach Delay (s)		14.5			15.0			35.1			34.8	
Approach LOS		B			B			D			C	

Intersection Summary

HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
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
6: King St & Street JJ

Future Background 2031 Ph2
Morning Peak Hour

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	1
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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	1921
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	1921
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

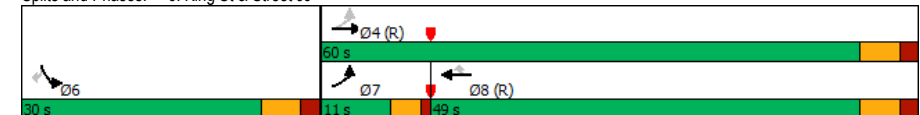
Future Background 2031 Ph2
Morning Peak Hour

Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	→	←		
Traffic Volume (vph)	422	475		
Future Volume (vph)	422	475		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	60.0	49.0	30.0	11.0
Total Split (%)	66.7%	54.4%	33%	12%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Max	C-Max	Min	None
Act Effct Green (s)	65.1	65.1		
Actuated g/C Ratio	0.72	0.72		
v/c Ratio	0.30	0.34		
Control Delay	6.7	7.0		
Queue Delay	0.0	0.0		
Total Delay	6.7	7.0		
LOS	A	A		
Approach Delay	6.7	7.0		
Approach LOS	A	A		

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: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 6.9
 Intersection Capacity Utilization 52.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Background 2031 Ph2
Morning Peak Hour

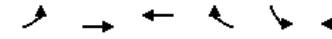


Lane Group	EBT	WBT
Lane Group Flow (vph)	422	475
v/c Ratio	0.30	0.34
Control Delay	6.7	7.0
Queue Delay	0.0	0.0
Total Delay	6.7	7.0
Queue Length 50th (m)	13.7	16.0
Queue Length 95th (m)	53.7	62.1
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1389	1389
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.30	0.34

Intersection Summary

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

Future Background 2031 Ph2
Morning Peak Hour



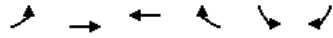
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	0	422	475	0	0	0
Future Volume (vph)	0	422	475	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frnt		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1921	1921			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1921	1921			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	422	475	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	422	475	0	0	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		1389	1389			
v/s Ratio Prot		0.22	c0.25			
v/s Ratio Perm						
v/c Ratio		0.30	0.34			
Uniform Delay, d1		4.4	4.6			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.6	0.7			
Delay (s)		5.0	5.2			
Level of Service		A	A			
Approach Delay (s)		5.0	5.2		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	5.1	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)	16.0
Intersection Capacity Utilization	52.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Background 2031 Ph2
Morning Peak Hour



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						
Fr						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	0
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

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


Future Background 2031 Ph2
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	422	475	0	0	0
Future Volume (Veh/h)	0	422	475	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	422	475	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.85				0.88	0.85
vC, conflicting volume	525				997	575
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	355				798	414
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	990				288	502
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	422	475	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.25	0.28	0.08	0.33	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			43.1%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Background 2031 Ph2
Morning Peak Hour


						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	0	0	1921
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

Future Background 2031 Ph2
Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Volume (veh/h)	0	0	166	0	0	646
Future Volume (Veh/h)	0	0	166	0	0	646
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	0	166	0	0	646
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	0.87					
vC, conflicting volume	912	266			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	821	266			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	275	712			1307	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	0	166	646			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.04	0.10	0.38			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			52.1%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Background 2031 Ph2
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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				0.89	
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1462	0	1883	0	1765	1921
Flt Permitted					0.652	
Satd. Flow (perm)	1462	0	1883	0	1084	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	632					
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

Future Background 2031 Ph2
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	0	166	14	646
Future Volume (vph)	0	166	14	646
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	0.00	0.10	0.02	0.40
Control Delay	0.0	4.2	5.4	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.2	5.4	6.1
LOS	A	A	A	A
Approach Delay		4.2		6.1
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: 0.40
 Intersection Signal Delay: 5.7
 Intersection Capacity Utilization 59.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

Future Background 2031 Ph2
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	166	14	646
v/c Ratio	0.00	0.10	0.02	0.40
Control Delay	0.0	4.2	5.4	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.2	5.4	6.1
Queue Length 50th (m)	0.0	0.0	0.0	0.0
Queue Length 95th (m)	0.0	19.5	3.1	87.8
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	834	1598	920	1631
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	0.00	0.10	0.02	0.40

Intersection Summary

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

Future Background 2031 Ph2
Morning Peak Hour

	↙	↘	↑	↙	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↘		↙	↘
Traffic Volume (vph)	0	3	166	0	14	646
Future Volume (vph)	0	3	166	0	14	646
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		0.89	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1462		1883		1579	1921
Flt Permitted	1.00		1.00		0.65	1.00
Satd. Flow (perm)	1462		1883		1084	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	3	166	0	14	646
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	0	0	166	0	14	646
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
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)	142		1447		833	1477
v/s Ratio Prot	c0.00		0.09			c0.34
v/s Ratio Perm					0.01	
v/c Ratio	0.00		0.11		0.02	0.44
Uniform Delay, d1	36.6		2.6		2.4	3.6
Progression Factor	1.00		0.97		1.00	1.00
Incremental Delay, d2	0.0		0.2		0.0	0.9
Delay (s)	36.6		2.7		2.5	4.6
Level of Service	D		A		A	A
Approach Delay (s)	36.6		2.7			4.5
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
48: Humber Station Rd & Street E

Future Background 2031 Ph2
Morning Peak Hour

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				0.92			
Frt								0.850				
Flt Protected					0.950							
Satd. Flow (prot)	0	1921	0	0	1825	0	1883	1883	1633	1921	1921	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1921	0	0	1359	0	1883	1883	1495	1921	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									160			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.8			126.7			153.0			361.4	
Travel Time (s)		10.0			9.1			11.0			26.0	

Intersection Summary

Area Type: Other

Timings
48: Humber Station Rd & Street E

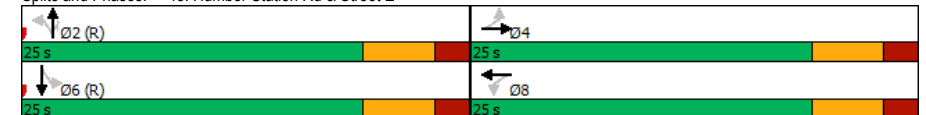
Future Background 2031 Ph2
Morning Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↔	↔	↔	
Traffic Volume (vph)	23	0	29	160	81	
Future Volume (vph)	23	0	29	160	81	
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		0.04	0.04	0.24	0.11	
Control Delay		10.2	10.0	3.4	10.6	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		10.2	10.0	3.4	10.6	
LOS		B	B	A	B	
Approach Delay		10.2	4.4		10.6	
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: 0.24
 Intersection Signal Delay: 6.6
 Intersection Capacity Utilization 41.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

Future Background 2031 Ph2
Morning Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	76	123	42	42
v/c Ratio	0.15	0.17	0.07	0.06
Control Delay	3.1	2.4	12.9	20.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	3.1	2.4	12.9	20.5
Queue Length 50th (m)	4.4	7.2	0.0	2.4
Queue Length 95th (m)	11.2	15.8	3.1	7.0
Internal Link Dist (m)	102.7	129.0		337.4
Turn Bay Length (m)				
Base Capacity (vph)	516	729	608	729
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	0.15	0.17	0.07	0.06

Intersection Summary

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

Future Background 2031 Ph2
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	0	76	0	0	0	123	42	0	42	0
Future Volume (vph)	0	0	0	76	0	0	0	123	42	0	42	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	
Frbp, ped/bikes					1.00			1.00	0.92		1.00	
Flpb, ped/bikes					0.93			1.00	1.00		1.00	
Frt					1.00			1.00	0.85		1.00	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1705			1921	1495		1921	
Fit Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1359			1921	1495		1921	
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	76	0	0	0	123	42	0	42	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	26	0	0	0
Lane Group Flow (vph)	0	0	0	0	76	0	0	123	16	0	42	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)					516			729	568		729	
v/s Ratio Prot								c0.06			0.02	
v/s Ratio Perm					c0.06				0.01			
v/c Ratio					0.15			0.17	0.03		0.06	
Uniform Delay, d1					10.2			10.3	9.7		9.8	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					0.6			0.5	0.1		0.2	
Delay (s)					10.8			10.8	9.8		10.0	
Level of Service					B			B	A		A	
Approach Delay (s)		0.0			10.8			10.5			10.0	
Approach LOS		A			B			B			A	
Intersection Summary												
HCM 2000 Control Delay					10.5			HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio					0.16							
Actuated Cycle Length (s)					50.0			Sum of lost time (s)			12.0	
Intersection Capacity Utilization					41.7%			ICU Level of Service			A	
Analysis Period (min)					15							
c Critical Lane Group												

Lanes and Geometrics

58: Humber Station Rd & Street Y

Future Background 2031 Ph2

Morning Peak Hour

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			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	0.89	0.97	0.95		0.99	0.99	
Frt	0.850			0.850			0.949			0.993		
Flt Protected	0.950	0.950		0.950			0.950			0.950		
Satd. Flow (prot)	1825	1411	0	1825	1921	1633	1825	1772	0	1825	1896	0
Flt Permitted	0.757	0.757		0.729			0.623			0.623		
Satd. Flow (perm)	1351	1411	0	1282	1921	1500	1244	1772	0	1134	1896	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	804			645			51			2		
Link Speed (k/h)	50			50			50			50		
Link Distance (m)	81.8			813.2			194.3			153.0		
Travel Time (s)	5.9			58.6			14.0			11.0		

Intersection Summary

Area Type: Other

Timings

58: Humber Station Rd & Street Y

Future Background 2031 Ph2

Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	1	0	15	15	8	142	74	41
Future Volume (vph)	1	0	15	15	8	142	74	41
Turn Type	Perm	NA	Perm	Perm	Perm	NA	Perm	NA
Protected Phases	4		8		2		6	
Permitted Phases	4		8		2		6	
Detector Phase	4		8		2		6	
Switch Phase								
Minimum Initial (s)	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
Total Split (s)	31.0	31.0	31.0	31.0	59.0	59.0	59.0	59.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%	65.6%	65.6%	65.6%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	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	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	11.1	11.1	11.1	11.1	73.9	73.9	73.9	73.9
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.82	0.82	0.82	0.82
v/c Ratio	0.01	0.00	0.09	0.02	0.01	0.15	0.08	0.03
Control Delay	158.0	0.0	176.5	0.9	0.6	2.4	1.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.0	0.0	176.5	0.9	0.6	2.4	1.2	7.6
LOS	F	A	F	A	A	A	A	A
Approach Delay	79.0			2.3			3.6	
Approach LOS	E			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: 0.15
 Intersection Signal Delay: 10.1 Intersection LOS: B
 Intersection Capacity Utilization 49.3% 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

Future Background 2031 Ph2
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	1	15	15	8	216	74	43
v/c Ratio	0.01	0.00	0.09	0.02	0.01	0.15	0.08	0.03
Control Delay	158.0	0.0	176.5	0.9	0.6	2.4	1.2	7.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	158.0	0.0	176.5	0.9	0.6	2.4	1.2	7.6
Queue Length 50th (m)	0.2	0.0	2.6	0.0	0.2	5.0	2.2	1.2
Queue Length 95th (m)	1.5	0.0	7.4	0.0	1.9	18.4	9.3	5.7
Internal Link Dist (m)		57.8			170.3		129.0	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	375	972	356	882	1021	1464	931	1557
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	0.00	0.00	0.04	0.02	0.01	0.15	0.08	0.03

Intersection Summary

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

Future Background 2031 Ph2
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	1	0	1	15	0	15	8	142	74	74	41	2
Future Volume (vph)	1	0	1	15	0	15	8	142	74	74	41	2
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	
Frbp, ped/bikes	1.00	0.86		1.00	0.92	1.00	0.97	1.00		1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.88	1.00	0.89	1.00	0.95		0.95	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.95	1.00		1.00	0.99	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00	0.95		0.95	1.00	
Satd. Flow (prot)	1695	1411		1609	1500	1621	1771	1729		1729	1896	
Fit Permitted	0.76	1.00		0.76	1.00	0.73	1.00	0.62		0.62	1.00	
Satd. Flow (perm)	1351	1411		1283	1500	1244	1771	1134		1134	1896	
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)	1	0	1	15	0	15	8	142	74	74	41	2
RTOR Reduction (vph)	0	1	0	0	0	14	0	12	0	0	0	0
Lane Group Flow (vph)	1	0	0	15	0	1	8	204	0	74	43	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm		Perm	Perm	NA		Perm	NA	
Protected Phases		4			8		2		6			6
Permitted Phases	4			8		8	2		6			6
Actuated Green, G (s)	8.9	8.9		8.9		8.9	69.1	69.1	69.1		69.1	69.1
Effective Green, g (s)	8.9	8.9		8.9		8.9	69.1	69.1	69.1		69.1	69.1
Actuated g/C Ratio	0.10	0.10		0.10		0.10	0.77	0.77	0.77		0.77	0.77
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)	133	139		126		148	955	1359		870	1455	
v/s Ratio Prot		0.00						c0.12				0.02
v/s Ratio Perm	0.00			c0.01		0.00	0.01			0.07		
v/c Ratio	0.01	0.00		0.12		0.01	0.01	0.15		0.09	0.03	
Uniform Delay, d1	36.6	36.5		37.0		36.6	2.4	2.7		2.6	2.5	
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		0.4		0.0	0.0	0.2		0.2	0.0	
Delay (s)	36.6	36.5		37.4		36.6	2.5	3.0		2.8	2.5	
Level of Service	D	D		D		D	A	A		A	A	
Approach Delay (s)		36.6			37.0			3.0			2.7	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
64: Street JJ & Street Y

Future Background 2031 Ph2
Morning Peak Hour

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	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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Morning Peak Hour

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	3	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	3	0	0	11	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	3	0	0	11	0	0	0	0	0	0	0
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	3	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	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)	913	917	900	900								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	6.9	6.9	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay		6.9										
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

Future Background 2031 Ph2
Morning Peak Hour

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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Morning Peak Hour

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	3	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	3	0	0	11	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	3	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	3	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	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)	913	917	900	900								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	6.9	6.9	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay		6.9										
Level of Service		A										
Intersection Capacity Utilization		29.6%	ICU Level of Service	A								
Analysis Period (min)		15										

Lanes and Geometrics
84: Street JJ & Street EE

Future Background 2031 Ph2
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	1	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	1	0	0	0	0	0	0	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	0	0	0	1	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	854	727	881	760	727	980	1502			1502		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	1	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	727	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	10.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	10.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay					10.0							
Intersection Capacity Utilization			29.6%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

Future Background 2031 Ph2
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Friction												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↑			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Future Volume (vph)	0	0	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	0	0	0	1	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	1	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	918	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	6.9	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay					6.9							
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

Future Background 2031 Ph2
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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					0.999	
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1919	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1919	0
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

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

Future Background 2031 Ph2
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	158	130	1
Future Volume (Veh/h)	0	0	0	158	130	1
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	0	0	158	130	1
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)				347	322	
pX, platoon unblocked						
vC, conflicting volume	388	230	181			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	230	181			
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	100	100			
cM capacity (veh/h)	567	745	1346			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	158	131			
Volume Left	0	0	0			
Volume Right	0	0	1			
cSH	1700	1346	1700			
Volume to Capacity	0.00	0.00	0.08			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.5%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

FBPh2 2031 Without Improvements
Morning Peak Hour

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	0.93	0.94		0.96	0.99		0.97	0.95		0.89	0.96	
Frt	0.941		0.990		0.945		0.963					
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1591	0	1681	1753	0	1535	1635	0	1681	1785	0
Flt Permitted	0.517			0.369			0.173			0.681		
Satd. Flow (perm)	794	1591	0	627	1753	0	270	1635	0	1077	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			4			29				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

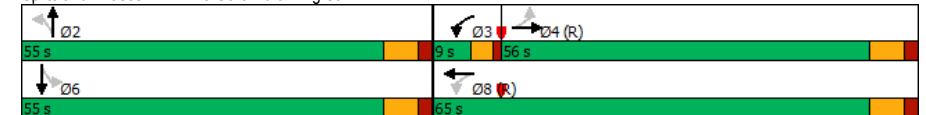
FBPh2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	266	49	392	11	75	100	378
Future Volume (vph)	51	266	49	392	11	75	100	378
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)	56.0	56.0	9.0	65.0	55.0	55.0	55.0	55.0
Total Split (%)	46.7%	46.7%	7.5%	54.2%	45.8%	45.8%	45.8%	45.8%
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)	59.3	59.3	70.5	67.9	38.9	38.9	38.9	38.9
Actuated g/C Ratio	0.49	0.49	0.59	0.57	0.32	0.32	0.32	0.32
v/c Ratio	0.13	0.54	0.12	0.42	0.13	0.22	0.29	0.85
Control Delay	21.9	25.0	13.5	17.9	28.6	21.1	30.5	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	25.0	13.5	17.9	28.6	21.1	30.5	50.2
LOS	C	C	B	B	C	C	C	D
Approach Delay	24.7		17.4		21.8		46.9	
Approach LOS	C		B		C		D	

Intersection Summary

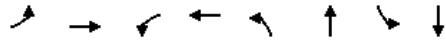
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 30.4
 Intersection Capacity Utilization 73.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
1: The Gore Rd & King St

FBPh2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	437	49	419	11	119	100	503
v/c Ratio	0.13	0.54	0.12	0.42	0.13	0.22	0.29	0.85
Control Delay	21.9	25.0	13.5	17.9	28.6	21.1	30.5	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	25.0	13.5	17.9	28.6	21.1	30.5	50.2
Queue Length 50th (m)	6.9	69.4	4.8	55.5	1.9	15.6	18.1	110.9
Queue Length 95th (m)	17.3	117.9	12.5	95.6	6.2	26.6	29.2	137.3
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)	393	806	425	993	108	677	434	731
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	0.13	0.54	0.12	0.42	0.10	0.18	0.23	0.69

Intersection Summary

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

FBPh2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	266	171	49	392	27	11	75	44	100	378	125
Future Volume (vph)	51	266	171	49	392	27	11	75	44	100	378	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	
Frbp, ped/bikes	1.00	0.94		1.00	0.99		1.00	0.95		1.00	0.96	
Frb, ped/bikes	0.93	1.00		0.99	1.00		1.00	1.00		0.89	1.00	
Frt	1.00	0.94		1.00	0.99		1.00	0.94		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)	1453	1592		1656	1754		1535	1634		1503	1784	
Flt Permitted	0.52	1.00		0.37	1.00		0.17	1.00		0.68	1.00	
Satd. Flow (perm)	791	1592		644	1754		279	1634		1076	1784	
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	266	171	49	392	27	11	75	44	100	378	125
RTOR Reduction (vph)	0	17	0	0	2	0	0	20	0	0	11	0
Lane Group Flow (vph)	51	420	0	49	417	0	11	99	0	100	492	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	15%	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)	58.5	58.5		67.9	67.9		38.9	38.9		38.9	38.9	
Effective Green, g (s)	58.5	58.5		67.9	67.9		38.9	38.9		38.9	38.9	
Actuated g/C Ratio	0.49	0.49		0.57	0.57		0.32	0.32		0.32	0.32	
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)	385	776		409	992		90	529		348	578	
v/s Ratio Prot		c0.26			0.01		c0.24			0.06		c0.28
v/s Ratio Perm	0.06			0.06			0.04			0.09		
v/c Ratio	0.13	0.54		0.12	0.42		0.12	0.19		0.29	0.85	
Uniform Delay, d1	16.8	21.4		12.9	14.8		28.5	29.2		30.2	37.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	2.7		0.1	1.3		0.6	0.2		0.5	11.5	
Delay (s)	17.6	24.1		13.1	16.2		29.1	29.4		30.7	49.3	
Level of Service	B	C		B	B		C	C		C	D	
Approach Delay (s)		23.4			15.8			29.3			46.2	
Approach LOS		C			B			C			D	

Intersection Summary

HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FBPh2 2031 Without Improvements
Morning Peak Hour

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			0.97			0.97	
Frt		0.971			0.990			0.978			0.984	
Flt Protected		0.997			0.994			0.992			0.992	
Satd. Flow (prot)	0	1684	0	0	1793	0	0	1529	0	0	1616	0
Flt Permitted		0.942			0.883			0.944			0.939	
Satd. Flow (perm)	0	1587	0	0	1582	0	0	1435	0	0	1508	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			5			10			7	
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

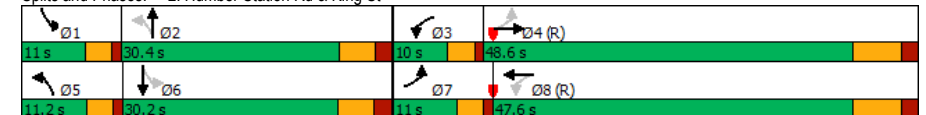
FBPh2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	32	347	73	456	17	77	17	77
Future Volume (vph)	32	347	73	456	17	77	17	77
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)		68.2		68.2		18.4		18.2
Actuated g/C Ratio		0.68		0.68		0.18		0.18
v/c Ratio		0.44		0.53		0.41		0.38
Control Delay		9.3		10.9		36.2		36.3
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		9.3		10.9		36.2		36.3
LOS		A		B		D		D
Approach Delay		9.3		10.9		36.2		36.3
Approach LOS		A		B		D		D

Intersection Summary

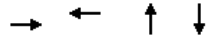
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.53
 Intersection Signal Delay: 14.7
 Intersection Capacity Utilization 79.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

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



Queues
2: Humber Station Rd & King St

FBPh2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	482	571	112	107
v/c Ratio	0.44	0.53	0.41	0.38
Control Delay	9.3	10.9	36.2	36.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.3	10.9	36.2	36.3
Queue Length 50th (m)	31.8	42.7	19.1	18.7
Queue Length 95th (m)	69.8	92.2	32.5	31.7
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1087	1080	357	367
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	0.44	0.53	0.31	0.29

Intersection Summary

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

FBPh2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	32	347	103	73	456	42	17	77	18	17	77	13
Future Volume (vph)	32	347	103	73	456	42	17	77	18	17	77	13
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		0.97			0.99			0.98			0.99	
Flpb, ped/bikes		1.00			0.99			0.99			0.99	
Frt		0.97			0.99			0.98			0.98	
Flt Protected		1.00			0.99			0.99			0.99	
Satd. Flow (prot)		1679			1781			1510			1594	
Flt Permitted		0.94			0.88			0.94			0.94	
Satd. Flow (perm)		1586			1582			1436			1509	
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)	32	347	103	73	456	42	17	77	18	17	77	13
RTOR Reduction (vph)	0	6	0	0	2	0	0	8	0	0	6	0
Lane Group Flow (vph)	0	476	0	0	569	0	0	104	0	0	101	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)		68.2			68.2			18.4			18.2	
Effective Green, g (s)		68.2			68.2			18.4			18.2	
Actuated g/C Ratio		0.68			0.68			0.18			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)		1081			1078			264			274	
v/s Ratio Prot												
v/s Ratio Perm		0.30			0.36			0.07			0.07	
v/c Ratio		0.44			0.53			0.39			0.37	
Uniform Delay, d1		7.2			7.9			35.9			35.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.5			1.0			0.8	
Delay (s)		7.5			8.4			36.9			36.7	
Level of Service		A			A			D			D	
Approach Delay (s)		7.5			8.4			36.9			36.7	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FBPh2 2031 Without Improvements
Morning Peak Hour

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						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FBPh2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBT	WBT	Ø6
Lane Configurations	↖	↖	
Traffic Volume (vph)	422	475	
Future Volume (vph)	422	475	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	33%
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	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.31	0.35	
Control Delay	6.8	7.1	
Queue Delay	0.0	0.0	
Total Delay	6.8	7.1	
LOS	A	A	
Approach Delay	6.8	7.1	
Approach LOS	A	A	

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: 0.35
 Intersection Signal Delay: 7.0
 Intersection Capacity Utilization 52.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FBPh2 2031 Without Improvements
Morning Peak Hour

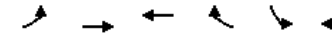


Lane Group	EBT	WBT
Lane Group Flow (vph)	422	475
v/c Ratio	0.31	0.35
Control Delay	6.8	7.1
Queue Delay	0.0	0.0
Total Delay	6.8	7.1
Queue Length 50th (m)	13.8	16.1
Queue Length 95th (m)	54.2	62.6
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1361	1361
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.31	0.35

Intersection Summary

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

FBPh2 2031 Without Improvements
Morning Peak Hour

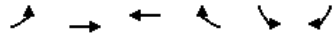


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↑	↔	↔	↔
Traffic Volume (vph)	0	422	475	0	0	0
Future Volume (vph)	0	422	475	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		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	422	475	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	422	475	0	0	0
Confl. Peds. (#/hr)	50			50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	Prot
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		1362	1362			
v/s Ratio Prot		0.22	0.25			
v/s Ratio Perm						
v/c Ratio		0.31	0.35			
Uniform Delay, d1		4.4	4.6			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.6	0.7			
Delay (s)		5.0	5.3			
Level of Service		A	A			
Approach Delay (s)		5.0	5.3		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			5.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.29			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			52.0%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FBPh2 2031 Without Improvements
Morning Peak Hour



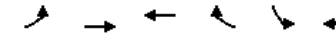
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
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

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

FBPh2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	422	475	0	0	0
Future Volume (Veh/h)	0	422	475	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	422	475	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.92				0.94	0.92
vC, conflicting volume	525				997	575
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	438				848	493
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	986				287	486
Direction, Lane #						
Volume Total	0	422	475	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.25	0.28	0.00	0.00	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			43.1%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

FBPh2 2031 Without Improvements
Morning Peak Hour

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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	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

FBPh2 2031 Without Improvements
Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	166	0	0	646
Future Volume (Veh/h)	0	0	166	0	0	646
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	0	166	0	0	646
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)						265
pX, platoon unblocked	0.87					
vC, conflicting volume	912	266			216	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	820	266			216	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	273	708			1296	
Direction, Lane #						
	WB 1	NB 1	SB 1			
Volume Total	0	166	646			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.10	0.38			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			52.1%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FBPh2 2031 Without Improvements
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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				0.89	
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1433	0	1883	0	1730	1883
Flt Permitted					0.652	
Satd. Flow (perm)	1433	0	1883	0	1063	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	632					
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

FBPh2 2031 Without Improvements
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	0	166	14	646
Future Volume (vph)	0	166	14	646
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	0.00	0.10	0.02	0.40
Control Delay	0.0	4.4	5.4	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.4	5.4	6.2
LOS	A	A	A	A
Approach Delay		4.4		6.2
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: 0.40
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 59.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

FBPh2 2031 Without Improvements
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	166	14	646
v/c Ratio	0.00	0.10	0.02	0.40
Control Delay	0.0	4.4	5.4	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.4	5.4	6.2
Queue Length 50th (m)	0.0	0.0	0.0	0.0
Queue Length 95th (m)	0.0	19.4	3.1	89.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	827	1598	902	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	0.00	0.10	0.02	0.40

Intersection Summary

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

FBPh2 2031 Without Improvements
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↓
Traffic Volume (vph)	0	3	166	0	14	646
Future Volume (vph)	0	3	166	0	14	646
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		0.89	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		1548	1883
Flt Permitted	1.00		1.00		0.65	1.00
Satd. Flow (perm)	1433		1883		1063	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	3	166	0	14	646
RTOR Reduction (vph)	3	0	0	0	0	0
Lane Group Flow (vph)	0	0	166	0	14	646
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		817	1447
v/s Ratio Prot	c0.00		0.09			c0.34
v/s Ratio Perm					0.01	
v/c Ratio	0.00		0.11		0.02	0.45
Uniform Delay, d1	36.6		2.6		2.4	3.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.0		0.2		0.0	1.0
Delay (s)	36.6		2.8		2.5	4.7
Level of Service	D		A		A	A
Approach Delay (s)	36.6		2.8			4.6
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	4.4	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	59.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
48: Humber Station Rd & Street E

FBPh2 2031 Without Improvements
Morning Peak Hour

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												
Satd. Flow (perm)	0	1883	0	0	1883	0	1883	1883	1601	1883	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									160			
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

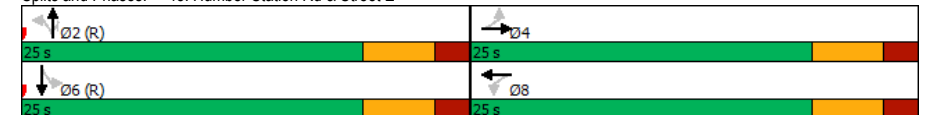
FBPh2 2031 Without Improvements
Morning Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↔	↔	↔	
Traffic Volume (vph)	23	0	29	160	81	
Future Volume (vph)	23	0	29	160	81	
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	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)		6.4	46.0	46.0	46.0	
Actuated g/C Ratio		0.13	0.92	0.92	0.92	
v/c Ratio		0.10	0.02	0.11	0.05	
Control Delay		19.5	2.1	0.9	1.9	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		19.5	2.1	0.9	1.9	
LOS		B	A	A	A	
Approach Delay		19.5	1.1		1.9	
Approach LOS		B	A		A	

Intersection Summary

Cycle Length: 50
 Actuated Cycle Length: 50
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.11
 Intersection Signal Delay: 2.8
 Intersection Capacity Utilization 18.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FBPh2 2031 Without Improvements
Morning Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	23	29	160	81
v/c Ratio	0.10	0.02	0.11	0.05
Control Delay	19.5	2.1	0.9	1.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.5	2.1	0.9	1.9
Queue Length 50th (m)	1.9	0.0	0.0	0.0
Queue Length 95th (m)	6.7	3.1	4.9	6.4
Internal Link Dist (m)	185.7	130.4		336.1
Turn Bay Length (m)				
Base Capacity (vph)	715	1732	1486	1732
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	0.03	0.02	0.11	0.05

Intersection Summary

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

FBPh2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	0	23	0	0	0	29	160	0	81	0
Future Volume (vph)	0	0	0	23	0	0	0	29	160	0	81	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	
Fr t					1.00			1.00	0.85		1.00	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1789			1883	1601		1883	
Fit Permitted					1.00			1.00	1.00		1.00	
Satd. Flow (perm)					1883			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	23	0	0	0	29	160	0	81	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	44	0	0	0
Lane Group Flow (vph)	0	0	0	0	23	0	0	29	116	0	81	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)					1.6			36.4	36.4		36.4	
Effective Green, g (s)					1.6			36.4	36.4		36.4	
Actuated g/C Ratio					0.03			0.73	0.73		0.73	
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)					60			1370	1165		1370	
v/s Ratio Prot								0.02			0.04	
v/s Ratio Perm					c0.01				c0.07			
v/c Ratio					0.38			0.02	0.10		0.06	
Uniform Delay, d1					23.7			1.9	2.0		1.9	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					4.0			0.0	0.2		0.1	
Delay (s)					27.8			1.9	2.2		2.0	
Level of Service					C			A	A		A	
Approach Delay (s)		0.0			27.8			2.1			2.0	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.11		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	18.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

FBPh2 2031 Without Improvements

58: Humber Station Rd & Street Y

Morning Peak Hour

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	0.89	0.99		0.94		
Frt		0.850				0.850		0.978				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1383	0	1789	1883	1601	1789	1820	0	1789	1883	0
Flt Permitted	0.757			0.754			0.704			0.666		
Satd. Flow (perm)	1324	1383	0	1253	1883	1470	1186	1820	0	1181	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		654				585		13				
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

FBPh2 2031 Without Improvements

58: Humber Station Rd & Street Y

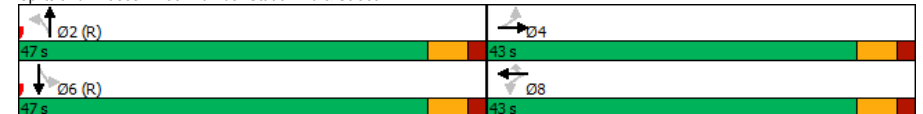
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	5	0	62	62	1	121	21	82
Future Volume (vph)	5	0	62	62	1	121	21	82
Turn Type	Perm	NA	Perm	Perm	Perm	NA	Perm	NA
Protected Phases		4				2		6
Permitted Phases	4		8	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	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
Total Split (s)	43.0	43.0	43.0	43.0	47.0	47.0	47.0	47.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	52.2%	52.2%	52.2%	52.2%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	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	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	10.8	10.8	10.8	10.8	70.7	70.7	70.7	70.7
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.79	0.79	0.79	0.79
v/c Ratio	0.03	0.01	0.41	0.09	0.00	0.10	0.02	0.06
Control Delay	31.6	0.0	43.0	0.3	5.0	3.7	4.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	0.0	43.0	0.3	5.0	3.7	4.3	4.0
LOS	C	A	D	A	A	A	A	A
Approach Delay		15.8				3.7		4.1
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: 0.41
 Intersection Signal Delay: 10.0
 Intersection Capacity Utilization 49.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
58: Humber Station Rd & Street Y

FBPh2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	5	5	62	62	1	142	21	82
v/c Ratio	0.03	0.01	0.41	0.09	0.00	0.10	0.02	0.06
Control Delay	31.6	0.0	43.0	0.3	5.0	3.7	4.3	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.6	0.0	43.0	0.3	5.0	3.7	4.3	4.0
Queue Length 50th (m)	0.8	0.0	10.6	0.0	0.0	4.8	0.8	3.0
Queue Length 95th (m)	3.6	0.0	20.7	0.0	0.6	14.2	3.6	9.5
Internal Link Dist (m)		57.8			170.3		130.4	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	544	953	515	948	931	1432	927	1479
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	0.01	0.01	0.12	0.07	0.00	0.10	0.02	0.06

Intersection Summary

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

FBPh2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	5	0	5	62	0	62	1	121	21	21	82	0
Future Volume (vph)	5	0	5	62	0	62	1	121	21	21	82	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	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	
Frbp, ped/bikes	1.00	0.86		1.00	0.92	1.00	0.99			1.00	1.00	
Flpb, ped/bikes	0.93	1.00		0.88	1.00	0.89	1.00			0.94	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.98			1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1662	1383		1579	1470	1600	1819			1685	1883	
Fit Permitted	0.76	1.00		0.75	1.00	0.70	1.00			0.67	1.00	
Satd. Flow (perm)	1325	1383		1254	1470	1185	1819			1182	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)	5	0	5	62	0	62	1	121	21	21	82	0
RTOR Reduction (vph)	0	4	0	0	0	55	0	3	0	0	0	0
Lane Group Flow (vph)	5	1	0	62	0	7	1	139	0	21	82	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	Perm	Perm	NA		Perm	NA		NA
Protected Phases		4			8		2					6
Permitted Phases	4			8		8	2				6	
Actuated Green, G (s)	9.7	9.7		9.7	9.7	68.3	68.3			68.3	68.3	
Effective Green, g (s)	9.7	9.7		9.7	9.7	68.3	68.3			68.3	68.3	
Actuated g/C Ratio	0.11	0.11		0.11	0.11	0.76	0.76			0.76	0.76	
Clearance Time (s)	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	
Lane Grp Cap (vph)	142	149		135		158	899	1380		897	1428	
v/s Ratio Prot		0.00						c0.08			0.04	
v/s Ratio Perm	0.00			c0.05		0.00	0.00			0.02		
v/c Ratio	0.04	0.00		0.46		0.04	0.00	0.10		0.02	0.06	
Uniform Delay, d1	36.0	35.8		37.7		36.0	2.6	2.8		2.7	2.7	
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		2.5		0.1	0.0	0.1		0.0	0.1	
Delay (s)	36.1	35.8		40.2		36.1	2.6	3.0		2.7	2.8	
Level of Service	D	D		D		D	A	A		A	A	
Approach Delay (s)		36.0			38.1			3.0				2.8
Approach LOS		D			D			A				A

Intersection Summary

HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
64: Street JJ & Street Y

FBPh2 2031 Without Improvements
Morning Peak Hour

	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	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												
Friction												
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

FBPh2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	11	0	0	2	0	0	0	0	0	0	0
Future Volume (vph)	0	11	0	0	2	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	11	0	0	2	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	11	2	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	907	910	910								
Control Delay (s)	7.0	7.0	6.9	6.9								
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				6.7%			ICU Level of Service				A	
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

FBPh2 2031 Without Improvements
Morning Peak Hour

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

FBPh2 2031 Without Improvements
Morning Peak Hour

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	11	0	0	2	0	0	0	0	0	0	0
Future Volume (vph)	0	11	0	0	2	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	11	0	0	2	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	11	2	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	907	910	910								
Control Delay (s)	7.0	7.0	6.9	6.9								
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
84: Street JJ & Street EE

FBPh2 2031 Without Improvements
Morning Peak Hour

	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	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												
Fr												
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)		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

FBPh2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	1	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	1	0	0	0	0	0	0	0	0	0	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	1	0	0	0	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	851	724	875	754	724	975	1490			1490		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	724	1700	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	10.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	10.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay								10.0				
Intersection Capacity Utilization								29.6%		ICU Level of Service		A
Analysis Period (min)								15				

Lanes and Geometrics
85: Street I & Street EE

FBPh2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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)		275.5			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

FBPh2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	1	0	0	0	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	1	0	0	0	0	0	0	0	0	0	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	1	0	0	0	0	0	0	0	0	0	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)												
pX, platoon unblocked												
vC, conflicting volume	100	100	100	100	100	100	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	100	100	100	100	100	100	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	756	724	875	754	724	875	1490			1490		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	1	0	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	724	1700	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	10.0	0.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	10.0	0.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				10.0								
Intersection Capacity Utilization			29.6%		ICU Level of Service					A		
Analysis Period (min)				15								

Lanes and Geometrics
88: Humber Station Rd & Street EE

FBPh2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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						
Fr						
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
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

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

FBPh2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	1	0	0	152	107	0
Future Volume (Veh/h)	1	0	0	152	107	0
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)	1	0	0	152	107	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)				347	322	
pX, platoon unblocked						
vC, conflicting volume	359	207	157			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	359	207	157			
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	100	100			
cM capacity (veh/h)	586	764	1362			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	1	152	107			
Volume Left	1	0	0			
Volume Right	0	0	0			
cSH	586	1362	1700			
Volume to Capacity	0.00	0.00	0.06			
Queue Length 95th (m)	0.0	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			0.0			
Intersection Capacity Utilization		21.9%		ICU Level of Service	A	
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

Future Background 2031 Ph2
Afternoon Peak Hour

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	0.96		0.86	0.94		0.86	0.90		0.86	0.95		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1830	1555	1713	1812	1617	1765	1902	1601	1765	1865	1541
Flt Permitted	0.374			0.505			0.646			0.216		
Satd. Flow (perm)	656	1830	1334	856	1812	1386	1076	1902	1373	381	1865	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			69			69			69			69
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

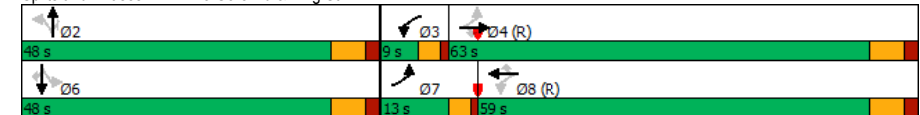
Future Background 2031 Ph2
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	400	20	33	461	101	57	381	34	38	139	57
Future Volume (vph)	148	400	20	33	461	101	57	381	34	38	139	57
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)	13.0	63.0	63.0	9.0	59.0	59.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	10.8%	52.5%	52.5%	7.5%	49.2%	49.2%	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)	79.5	70.6	70.6	72.6	63.7	63.7	29.6	29.6	29.6	29.6	29.6	29.6
Actuated g/C Ratio	0.66	0.59	0.59	0.60	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.29	0.37	0.02	0.06	0.48	0.13	0.22	0.81	0.09	0.40	0.30	0.15
Control Delay	10.0	16.6	0.1	9.2	21.8	7.6	35.5	55.9	1.4	49.1	37.0	6.1
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	10.0	16.6	0.1	9.2	21.8	7.6	35.5	55.9	1.4	49.1	37.0	6.1
LOS	A	B	A	A	C	A	D	E	A	D	D	A
Approach Delay		14.3			18.7			49.5			31.4	
Approach LOS		B			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: 0.81
 Intersection Signal Delay: 26.7
 Intersection Capacity Utilization 87.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
1: The Gore Rd & King St

Future Background 2031 Ph2
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	148	400	20	33	461	101	57	381	34	38	139	57	
v/c Ratio	0.29	0.37	0.02	0.06	0.48	0.13	0.22	0.81	0.09	0.40	0.30	0.15	
Control Delay	10.0	16.6	0.1	9.2	21.8	7.6	35.5	55.9	1.4	49.1	37.0	6.1	
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	10.0	16.6	0.1	9.2	21.8	7.6	35.5	55.9	1.4	49.1	37.0	6.1	
Queue Length 50th (m)	12.2	52.9	0.0	2.5	68.0	3.6	11.2	88.2	0.0	7.8	27.8	0.0	
Queue Length 95th (m)	25.4	91.8	0.0	7.6	120.3	15.5	20.9	112.8	1.5	18.1	41.5	7.6	
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)	525	1077	813	563	964	770	371	656	518	131	643	500	
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	0.28	0.37	0.02	0.06	0.48	0.13	0.15	0.58	0.07	0.29	0.22	0.11	

Intersection Summary

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

Future Background 2031 Ph2
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	400	20	33	461	101	57	381	34	38	139	57
Future Volume (vph)	148	400	20	33	461	101	57	381	34	38	139	57
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	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	0.99	1.00	1.00	0.97	1.00	1.00	0.90	1.00	1.00	0.95	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)	1705	1830	1334	1658	1812	1386	1587	1902	1373	1683	1865	1321
Flt Permitted	0.37	1.00	1.00	0.51	1.00	1.00	0.65	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	672	1830	1334	882	1812	1386	1080	1902	1373	382	1865	1321
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	400	20	33	461	101	57	381	34	38	139	57
RTOR Reduction (vph)	0	0	8	0	0	32	0	0	26	0	0	43
Lane Group Flow (vph)	148	400	12	33	461	69	57	381	8	38	139	14
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	5%	5%	3%	6%	1%	0%	1%	2%	0%	3%	6%
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)	77.2	69.1	69.1	67.8	63.7	63.7	29.6	29.6	29.6	29.6	29.6	29.6
Effective Green, g (s)	77.2	69.1	69.1	67.8	63.7	63.7	29.6	29.6	29.6	29.6	29.6	29.6
Actuated g/C Ratio	0.64	0.58	0.58	0.56	0.53	0.53	0.25	0.25	0.25	0.25	0.25	0.25
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)	514	1053	768	524	961	735	266	469	338	94	460	325
v/s Ratio Prot	c0.02	0.22		0.00	c0.25			c0.20			0.07	
v/s Ratio Perm	0.16		0.01	0.03		0.05	0.05		0.01	0.10		0.01
v/c Ratio	0.29	0.38	0.01	0.06	0.48	0.09	0.21	0.81	0.02	0.40	0.30	0.04
Uniform Delay, d1	9.8	13.8	10.9	11.6	17.7	13.9	36.0	42.6	34.3	37.8	36.8	34.4
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	0.3	1.0	0.0	0.1	1.7	0.3	0.4	10.3	0.0	2.8	0.4	0.1
Delay (s)	10.1	14.9	10.9	11.7	19.4	14.1	36.4	52.9	34.3	40.7	37.2	34.5
Level of Service	B	B	B	B	B	B	D	D	C	D	D	C
Approach Delay (s)	13.5			18.1			49.6			37.1		
Approach LOS	B			B			D			D		

Intersection Summary

HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Background 2031 Ph2

Afternoon Peak Hour

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		0.86	0.95		0.86	0.90	0.94		0.90	0.96	
Frt			0.850			0.850		0.937			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1865	1555	1379	1812	1526	1697	1612	0	1713	1721	0
Flt Permitted	0.415			0.401			0.548			0.655		
Satd. Flow (perm)	716	1865	1334	556	1812	1309	878	1612	0	1068	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			102			102		28				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

Future Background 2031 Ph2

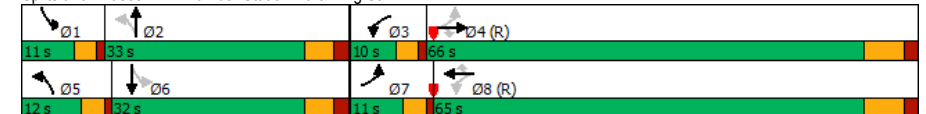
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↖	↗
Traffic Volume (vph)	15	483	24	18	469	49	71	93	14	81
Future Volume (vph)	15	483	24	18	469	49	71	93	14	81
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	30.2	11.0	30.2
Total Split (s)	11.0	66.0	66.0	10.0	65.0	65.0	12.0	33.0	11.0	32.0
Total Split (%)	9.2%	55.0%	55.0%	8.3%	54.2%	54.2%	10.0%	27.5%	9.2%	26.7%
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	2.2	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	6.2	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	None	None	None
Act Effct Green (s)	78.4	72.4	72.4	78.7	72.6	72.6	31.8	25.3	25.6	18.2
Actuated g/C Ratio	0.65	0.60	0.60	0.66	0.60	0.60	0.26	0.21	0.21	0.15
v/c Ratio	0.03	0.43	0.03	0.04	0.43	0.06	0.24	0.45	0.05	0.42
Control Delay	9.7	17.5	0.0	9.8	17.4	0.1	32.4	36.9	28.3	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	17.5	0.0	9.8	17.4	0.1	32.4	36.9	28.3	42.8
LOS	A	B	A	A	B	A	C	D	C	D
Approach Delay		16.5			15.6			35.5		41.3
Approach LOS		B			B			D		D

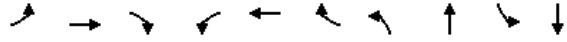
Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 21.5
 Intersection Capacity Utilization 57.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service B

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



Queues
2: Humber Station Rd & King St
Future Background 2031 Ph2
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	15	483	24	18	469	49	71	161	14	116
v/c Ratio	0.03	0.43	0.03	0.04	0.43	0.06	0.24	0.45	0.05	0.42
Control Delay	9.7	17.5	0.0	9.8	17.4	0.1	32.4	36.9	28.3	42.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.7	17.5	0.0	9.8	17.4	0.1	32.4	36.9	28.3	42.8
Queue Length 50th (m)	1.1	51.5	0.0	1.3	50.0	0.0	13.6	27.3	2.6	23.0
Queue Length 95th (m)	4.5	118.7	0.0	5.1	114.9	0.0	22.5	48.1	6.9	38.7
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)	527	1140	855	408	1102	836	299	394	270	383
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	0.03	0.42	0.03	0.04	0.43	0.06	0.24	0.41	0.05	0.30

Intersection Summary

HCM Signalized Intersection Capacity Analysis
2: Humber Station Rd & King St
Future Background 2031 Ph2
Afternoon Peak Hour



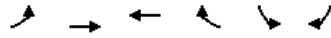
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	15	483	24	18	469	49	71	93	68	14	81	35
Future Volume (vph)	15	483	24	18	469	49	71	93	68	14	81	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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	6.2	6.2	4.0	6.2	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	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	0.94	1.00	0.96	1.00	0.96
Flpb, ped/bikes	0.98	1.00	1.00	0.98	1.00	1.00	0.95	1.00	0.95	1.00	0.94	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.94	1.00	0.95	1.00	0.95
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1680	1865	1334	1354	1812	1309	1612	1611	1604	1721	1604	1721
Flt Permitted	0.41	1.00	1.00	0.40	1.00	1.00	0.55	1.00	0.66	1.00	0.66	1.00
Satd. Flow (perm)	734	1865	1334	572	1812	1309	930	1611	1106	1721	1106	1721
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)	15	483	24	18	469	49	71	93	68	14	81	35
RTOR Reduction (vph)	0	0	11	0	0	21	0	22	0	0	14	0
Lane Group Flow (vph)	15	483	14	18	469	28	71	139	0	14	102	0
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	3%	3%	5%	28%	6%	7%	4%	2%	9%	3%	2%	2%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	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)	70.1	67.5	67.5	70.5	67.7	67.7	32.1	25.3		22.7	19.9	
Effective Green, g (s)	70.1	67.5	67.5	70.5	67.7	67.7	32.1	25.3		22.7	19.9	
Actuated g/C Ratio	0.58	0.56	0.56	0.59	0.56	0.56	0.27	0.21		0.19	0.17	
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2		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)	449	1049	750	354	1022	738	295	339		220	285	
v/s Ratio Prot	0.00	c0.26		c0.00	0.26		c0.02	c0.09		0.00	0.06	
v/s Ratio Perm	0.02		0.01	0.03		0.02	0.05			0.01		
v/c Ratio	0.03	0.46	0.02	0.05	0.46	0.04	0.24	0.41		0.06	0.36	
Uniform Delay, d1	11.0	15.5	11.6	11.0	15.4	11.6	33.8	40.9		39.8	44.4	
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	1.5	0.0	0.1	1.5	0.1	0.4	0.8		0.1	0.8	
Delay (s)	11.0	17.0	11.6	11.0	16.9	11.7	34.2	41.7		39.9	45.1	
Level of Service	B	B	B	B	B	B	C	D		D	D	
Approach Delay (s)		16.5			16.2		39.4			44.6		
Approach LOS		B			B		D			D		

Intersection Summary

HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

Future Background 2031 Ph2
Afternoon Peak Hour



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	1
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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	1921
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	1921
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

Future Background 2031 Ph2
Afternoon Peak Hour

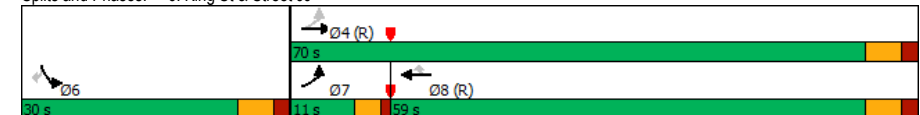


Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↖	↖		
Traffic Volume (vph)	479	605		
Future Volume (vph)	479	605		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.29	0.37		
Control Delay	5.2	5.8		
Queue Delay	0.0	0.0		
Total Delay	5.2	5.8		
LOS	A	A		
Approach Delay	5.2	5.8		
Approach LOS	A	A		

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: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.37
 Intersection Signal Delay: 5.5
 Intersection Capacity Utilization 58.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Background 2031 Ph2
Afternoon Peak Hour

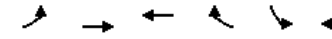


Lane Group	EBT	WBT
Lane Group Flow (vph)	479	605
v/c Ratio	0.29	0.37
Control Delay	5.2	5.8
Queue Delay	0.0	0.0
Total Delay	5.2	5.8
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	61.2	83.5
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1644	1644
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.29	0.37

Intersection Summary

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

Future Background 2031 Ph2
Afternoon Peak Hour



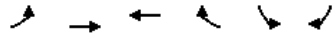
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↗
Traffic Volume (vph)	0	479	605	0	0	0
Future Volume (vph)	0	479	605	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frpl, ped/bikes		1.00	1.00			
Frnt		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		1921	1921			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		1921	1921			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	479	605	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	479	605	0	0	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		1506	1506			
v/s Ratio Prot		0.25	c0.31			
v/s Ratio Perm						
v/c Ratio		0.32	0.40			
Uniform Delay, d1		3.1	3.4			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.6	0.8			
Delay (s)		3.7	4.2			
Level of Service		A	A			
Approach Delay (s)		3.7	4.2		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Background 2031 Ph2
Afternoon Peak Hour



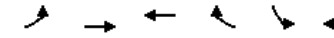
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1921	1921	0
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

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


Future Background 2031 Ph2
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	479	605	0	0	0
Future Volume (Veh/h)	0	479	605	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	479	605	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.85				0.87	0.85
vC, conflicting volume	655				1184	705
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	503				1008	562
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	869				215	413
Direction, Lane #						
	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	479	605	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.28	0.36	0.08	0.33	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			50.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Background 2031 Ph2
Afternoon Peak Hour


						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
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						
Flt						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	0	0	1921
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

Future Background 2031 Ph2
Afternoon Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Volume (veh/h)	0	0	678	0	0	250
Future Volume (Veh/h)	0	0	678	0	0	250
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	0	678	0	0	250
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	0.85	0.85			0.85	
vC, conflicting volume	1028	778			728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	944	650			591	
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	100			100	
cM capacity (veh/h)	228	368			809	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	678	250			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.04	0.40	0.15			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Background 2031 Ph2
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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				0.97	
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1462	0	1921	0	1765	1921
Flt Permitted					0.369	
Satd. Flow (perm)	1462	0	1921	0	665	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	213					
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

Future Background 2031 Ph2
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	0	678	3	250
Future Volume (vph)	0	678	3	250
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	0.03	0.42	0.01	0.15
Control Delay	0.2	6.2	6.0	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	6.2	6.0	4.5
LOS	A	A	A	A
Approach Delay	0.2	6.2		4.5
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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 5.7
 Intersection Capacity Utilization 61.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A











Future Background 2031 Ph2
Afternoon Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	678	3	250
v/c Ratio	0.03	0.42	0.01	0.15
Control Delay	0.2	6.2	6.0	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	6.2	6.0	4.5
Queue Length 50th (m)	0.0	0.0	0.0	0.0
Queue Length 95th (m)	0.0	80.8	1.2	28.4
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	518	1631	564	1631
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	0.03	0.42	0.01	0.15

Intersection Summary

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

Future Background 2031 Ph2
Afternoon Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	13	678	0	3	250
Future Volume (vph)	0	13	678	0	3	250
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		0.96	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1462		1921		1691	1921
Flt Permitted	1.00		1.00		0.37	1.00
Satd. Flow (perm)	1462		1921		656	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	13	678	0	3	250
RTOR Reduction (vph)	12	0	0	0	0	0
Lane Group Flow (vph)	1	0	678	0	3	250
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
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)	142		1477		504	1477
v/s Ratio Prot	c0.00		c0.35			0.13
v/s Ratio Perm					0.00	
v/c Ratio	0.01		0.46		0.01	0.17
Uniform Delay, d1	36.7		3.7		2.4	2.8
Progression Factor	1.00		0.99		1.00	1.00
Incremental Delay, d2	0.0		1.0		0.0	0.2
Delay (s)	36.7		4.6		2.4	3.0
Level of Service	D		A		A	A
Approach Delay (s)	36.7		4.6			3.0
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	4.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
48: Humber Station Rd & Street E

Future Background 2031 Ph2
Afternoon Peak Hour

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				0.92			
Frt								0.850				
Flt Protected					0.950							
Satd. Flow (prot)	0	1921	0	0	1825	0	1921	1921	1633	1921	1921	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1921	0	0	1359	0	1921	1921	1495	1921	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									65			
Link Speed (k/h)		50			50			50			50	
Link Distance (m)		138.8			126.7			153.0			361.4	
Travel Time (s)		10.0			9.1			11.0			26.0	

Intersection Summary

Area Type: Other

Timings
48: Humber Station Rd & Street E

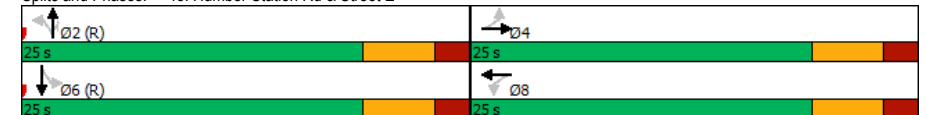
Future Background 2031 Ph2
Afternoon Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↕	↕	↕	
Traffic Volume (vph)	76	0	123	42	42	
Future Volume (vph)	76	0	123	42	42	
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		0.15	0.17	0.07	0.06	
Control Delay		11.2	11.1	2.4	10.2	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		11.2	11.1	2.4	10.2	
LOS		B	B	A	B	
Approach Delay		11.2	8.9		10.2	
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: 0.17
 Intersection Signal Delay: 9.7
 Intersection Capacity Utilization 41.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

Future Background 2031 Ph2
Afternoon Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	76	123	42	42
v/c Ratio	0.15	0.17	0.07	0.06
Control Delay	11.2	11.1	2.4	10.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.2	11.1	2.4	10.2
Queue Length 50th (m)	4.4	7.2	0.0	2.4
Queue Length 95th (m)	11.2	15.8	3.1	7.0
Internal Link Dist (m)	102.7	129.0		337.4
Turn Bay Length (m)				
Base Capacity (vph)	516	729	608	729
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	0.15	0.17	0.07	0.06

Intersection Summary

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

Future Background 2031 Ph2
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	0	76	0	0	0	123	42	0	42	0
Future Volume (vph)	0	0	0	76	0	0	0	123	42	0	42	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	
Frbp, ped/bikes					1.00			1.00	0.92		1.00	
Flpb, ped/bikes					0.93			1.00	1.00		1.00	
Frt					1.00			1.00	0.85		1.00	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1705			1921	1495		1921	
Fit Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1359			1921	1495		1921	
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	76	0	0	0	123	42	0	42	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	26	0	0	0
Lane Group Flow (vph)	0	0	0	0	76	0	0	123	16	0	42	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)					516			729	568		729	
v/s Ratio Prot								c0.06			0.02	
v/s Ratio Perm					c0.06				0.01			
v/c Ratio					0.15			0.17	0.03		0.06	
Uniform Delay, d1					10.2			10.3	9.7		9.8	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					0.6			0.5	0.1		0.2	
Delay (s)					10.8			10.8	9.8		10.0	
Level of Service					B			B	A		A	
Approach Delay (s)		0.0			10.8			10.5			10.0	
Approach LOS		A			B			B			A	
Intersection Summary												
HCM 2000 Control Delay					10.5			HCM 2000 Level of Service			B	
HCM 2000 Volume to Capacity ratio					0.16							
Actuated Cycle Length (s)					50.0			Sum of lost time (s)			12.0	
Intersection Capacity Utilization					41.7%			ICU Level of Service			A	
Analysis Period (min)					15							
c Critical Lane Group												

Lanes and Geometrics

58: Humber Station Rd & Street Y

Future Background 2031 Ph2

Afternoon Peak Hour

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			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	0.89	0.97	0.95		0.99	0.99	
Frt	0.850			0.850			0.949			0.993		
Flt Protected	0.950	0.950		0.950			0.950			0.950		
Satd. Flow (prot)	1825	1411	0	1825	1921	1633	1825	1772	0	1825	1896	0
Flt Permitted	0.757	0.757		0.729			0.623			0.623		
Satd. Flow (perm)	1351	1411	0	1282	1921	1500	1244	1772	0	1134	1896	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	804			645			51			2		
Link Speed (k/h)	50			50			50			50		
Link Distance (m)	81.8			813.2			194.3			153.0		
Travel Time (s)	5.9			58.6			14.0			11.0		

Intersection Summary

Area Type: Other

Timings

58: Humber Station Rd & Street Y

Future Background 2031 Ph2

Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	1	0	15	15	8	142	74	41
Future Volume (vph)	1	0	15	15	8	142	74	41
Turn Type	Perm	NA	Perm	Perm	Perm	NA	Perm	NA
Protected Phases	4		8		2		6	
Permitted Phases	4		8		2		6	
Detector Phase	4		8		2		6	
Switch Phase								
Minimum Initial (s)	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
Total Split (s)	31.0	31.0	31.0	31.0	59.0	59.0	59.0	59.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%	65.6%	65.6%	65.6%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	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	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	11.1	11.1	11.1	11.1	73.9	73.9	73.9	73.9
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.82	0.82	0.82	0.82
v/c Ratio	0.01	0.00	0.09	0.02	0.01	0.15	0.08	0.03
Control Delay	29.0	0.0	32.0	0.1	5.0	3.4	4.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.0	32.0	0.1	5.0	3.4	4.6	4.3
LOS	C	A	C	A	A	A	A	A
Approach Delay	14.5			3.5			4.5	
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: 0.15
 Intersection Signal Delay: 4.9
 Intersection Capacity Utilization 49.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
58: Humber Station Rd & Street Y

Future Background 2031 Ph2
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	1	15	15	8	216	74	43
v/c Ratio	0.01	0.00	0.09	0.02	0.01	0.15	0.08	0.03
Control Delay	29.0	0.0	32.0	0.1	5.0	3.4	4.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.0	32.0	0.1	5.0	3.4	4.6	4.3
Queue Length 50th (m)	0.2	0.0	2.6	0.0	0.2	5.0	2.2	1.2
Queue Length 95th (m)	1.5	0.0	7.4	0.0	1.9	18.4	9.3	5.7
Internal Link Dist (m)	57.8				170.3		129.0	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	375	972	356	882	1021	1464	931	1557
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	0.00	0.00	0.04	0.02	0.01	0.15	0.08	0.03

Intersection Summary

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

Future Background 2031 Ph2
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	1	0	1	15	0	15	8	142	74	74	41	2
Future Volume (vph)	1	0	1	15	0	15	8	142	74	74	41	2
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	
Frbp, ped/bikes	1.00	0.86		1.00	0.92	1.00	0.97			1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.88	1.00	0.89	1.00			0.95	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.95			1.00	0.99	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1695	1411		1609	1500	1621	1771			1729	1896	
Fit Permitted	0.76	1.00		0.76	1.00	0.73	1.00			0.62	1.00	
Satd. Flow (perm)	1351	1411		1283	1500	1244	1771			1134	1896	
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)	1	0	1	15	0	15	8	142	74	74	41	2
RTOR Reduction (vph)	0	1	0	0	0	14	0	12	0	0	0	0
Lane Group Flow (vph)	1	0	0	15	0	1	8	204	0	74	43	0
Confl. Peds. (#/hr)	50			50			50			50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm		Perm	NA			Perm	NA	
Protected Phases	4				8		2				6	
Permitted Phases	4				8		2				6	
Actuated Green, G (s)	8.9	8.9		8.9	8.9	69.1	69.1			69.1	69.1	
Effective Green, g (s)	8.9	8.9		8.9	8.9	69.1	69.1			69.1	69.1	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.77	0.77			0.77	0.77	
Clearance Time (s)	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	
Lane Grp Cap (vph)	133	139		126		148	955	1359		870	1455	
v/s Ratio Prot	0.00						c0.12				0.02	
v/s Ratio Perm	0.00		c0.01		0.00		0.01				0.07	
v/c Ratio	0.01	0.00		0.12	0.01	0.01	0.15			0.09	0.03	
Uniform Delay, d1	36.6	36.5		37.0	36.6	2.4	2.7			2.6	2.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00			1.00	1.00	
Incremental Delay, d2	0.0	0.0		0.4	0.0	0.0	0.2			0.2	0.0	
Delay (s)	36.6	36.5		37.4	36.6	2.5	3.0			2.8	2.5	
Level of Service	D	D		D	D	A	A			A	A	
Approach Delay (s)	36.6				37.0		3.0				2.7	
Approach LOS	D				D		A				A	

Intersection Summary

HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
64: Street JJ & Street Y

Future Background 2031 Ph2
Afternoon Peak Hour

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	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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Afternoon Peak Hour

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	3	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	3	0	0	11	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	3	0	0	11	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	3	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	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)	913	917	900	900								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	6.9	6.9	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay		6.9										
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

Future Background 2031 Ph2
Afternoon Peak Hour

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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Afternoon Peak Hour

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	3	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	3	0	0	11	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	3	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	3	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	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)	913	917	900	900								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	6.9	6.9	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay		6.9										
Level of Service		A										
Intersection Capacity Utilization		29.6%	ICU Level of Service	A								
Analysis Period (min)		15										

Lanes and Geometrics
84: Street JJ & Street EE

Future Background 2031 Ph2
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	1	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	1	0	0	0	0	0	0	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	0	0	0	1	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	854	727	881	760	727	980	1502			1502		
Direction, Lane #												
Volume Total	0	1	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	727	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	10.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	10.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay					10.0							
Intersection Capacity Utilization			29.6%				ICU Level of Service			A		
Analysis Period (min)					15							

Lanes and Geometrics
85: Street I & Street EE

Future Background 2031 Ph2
Afternoon Peak Hour

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	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												
Friction												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

Future Background 2031 Ph2
Afternoon Peak Hour

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	0	0	0	1	0	0	0	0	0	0	0
Future Volume (vph)	0	0	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	0	0	0	1	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	0	1	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.00	0.00								
Capacity (veh/h)	917	918	917	917								
Control Delay (s)	6.9	6.9	6.9	6.9								
Approach Delay (s)	0.0	6.9	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	6.9		
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

Future Background 2031 Ph2
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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					0.999	
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1919	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1919	0
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

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

Future Background 2031 Ph2
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	158	130	1
Future Volume (Veh/h)	0	0	0	158	130	1
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	0	0	158	130	1
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)				347	322	
pX, platoon unblocked						
vC, conflicting volume	388	230	181			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	230	181			
tC, single (s)	6.4	6.2	4.1			
iC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	567	745	1346			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	158	131			
Volume Left	0	0	0			
Volume Right	0	0	1			
cSH	1700	1346	1700			
Volume to Capacity	0.00	0.00	0.08			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					

Intersection Summary

Average Delay	0.0		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes and Geometrics
1: The Gore Rd & King St

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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			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		0.94		0.97		0.91		0.99		0.96		
Frt	0.993			0.973			0.988			0.956			
Flt Protected	0.950	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1728	0	1681	1709	0	1261	1855	0	1681	1760	0	
Flt Permitted	0.292	0.487			0.549			0.188			0.188		
Satd. Flow (perm)	480	1728	0	811	1709	0	664	1855	0	318	1760	0	
Right Turn on Red	Yes			Yes			Yes			Yes			
Satd. Flow (RTOR)	3			12			4			18			
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

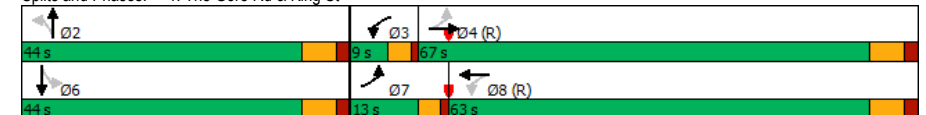
FBPh2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	400	33	461	57	381	38	139
Future Volume (vph)	148	400	33	461	57	381	38	139
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)	13.0	67.0	9.0	63.0	44.0	44.0	44.0	44.0
Total Split (%)	10.8%	55.8%	7.5%	52.5%	36.7%	36.7%	36.7%	36.7%
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)	78.1	69.5	70.9	62.4	31.3	31.3	31.3	31.3
Actuated g/C Ratio	0.65	0.58	0.59	0.52	0.26	0.26	0.26	0.26
v/c Ratio	0.37	0.42	0.06	0.63	0.33	0.85	0.46	0.42
Control Delay	11.9	17.6	9.6	25.5	39.6	58.5	54.6	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	17.6	9.6	25.5	39.6	58.5	54.6	34.9
LOS	B	B	A	C	D	E	D	C
Approach Delay	16.1		24.7		56.2		38.1	
Approach LOS	B		C		E		D	

Intersection Summary

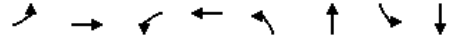
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 31.7
 Intersection Capacity Utilization 97.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
1: The Gore Rd & King St

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	420	33	562	57	415	38	196
v/c Ratio	0.37	0.42	0.06	0.63	0.33	0.85	0.46	0.42
Control Delay	11.9	17.6	9.6	25.5	39.6	58.5	54.6	34.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	17.6	9.6	25.5	39.6	58.5	54.6	34.9
Queue Length 50th (m)	13.1	59.7	2.7	95.1	11.2	95.4	7.8	35.9
Queue Length 95th (m)	25.4	94.0	7.5	147.6	22.8	125.9	19.4	54.1
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)	399	1003	521	896	207	582	99	562
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.42	0.06	0.63	0.28	0.71	0.38	0.35

Intersection Summary

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔		↔	↔		↔	↔	↔
Traffic Volume (vph)	148	400	20	33	461	101	57	381	34	38	139	57
Future Volume (vph)	148	400	20	33	461	101	57	381	34	38	139	57
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	0.97		1.00	0.99		1.00	0.96	
Frpb, ped/bikes	0.99	1.00		0.97	1.00		0.91	1.00		0.96	1.00	
Frt	1.00	0.99		1.00	0.97		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)	1550	1727		1631	1709		1151	1854		1612	1761	
Flt Permitted	0.29	1.00		0.49	1.00		0.55	1.00		0.19	1.00	
Satd. Flow (perm)	477	1727		835	1709		665	1854		319	1761	
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	400	20	33	461	101	57	381	34	38	139	57
RTOR Reduction (vph)	0	1	0	0	6	0	0	3	0	0	13	0
Lane Group Flow (vph)	148	419	0	33	556	0	57	412	0	38	183	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)	75.5	67.9		65.9	62.3		31.3	31.3		31.3	31.3	
Effective Green, g (s)	75.5	67.9		65.9	62.3		31.3	31.3		31.3	31.3	
Actuated g/C Ratio	0.63	0.57		0.55	0.52		0.26	0.26		0.26	0.26	
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)	382	977		482	887		173	483		83	459	
v/s Ratio Prot	c0.03	0.24		0.00	c0.33			c0.22			0.10	
v/s Ratio Perm	0.21			0.04			0.09			0.12		
v/c Ratio	0.39	0.43		0.07	0.63		0.33	0.85		0.46	0.40	
Uniform Delay, d1	12.0	14.9		12.5	20.6		35.9	42.2		37.2	36.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	1.4		0.1	3.3		1.1	13.6		4.0	0.6	
Delay (s)	12.7	16.3		12.6	23.9		37.0	55.8		41.2	37.1	
Level of Service	B	B		B	C		D	E		D	D	
Approach Delay (s)		15.4			23.3			53.5			37.8	
Approach LOS		B			C			D			D	

Intersection Summary

HCM 2000 Control Delay	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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			0.93			0.95	
Frt		0.994			0.988			0.960			0.964	
Flt Protected		0.999			0.998			0.985			0.995	
Satd. Flow (prot)	0	1746	0	0	1789	0	0	1267	0	0	1538	0
Flt Permitted		0.980			0.976			0.834			0.955	
Satd. Flow (perm)	0	1710	0	0	1746	0	0	1038	0	0	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			18			16	
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

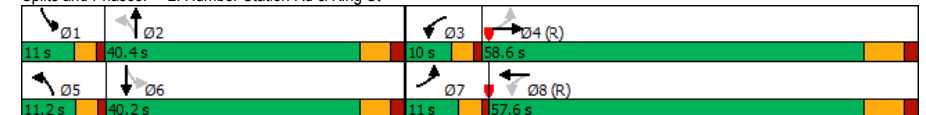
FBPh2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	15	483	18	469	71	93	14	81
Future Volume (vph)	15	483	18	469	71	93	14	81
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	58.6	10.0	57.6	11.2	40.4	11.0	40.2
Total Split (%)	9.2%	48.8%	8.3%	48.0%	9.3%	33.7%	9.2%	33.5%
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)		77.3		77.3		29.1		29.1
Actuated g/C Ratio		0.64		0.64		0.24		0.24
v/c Ratio		0.47		0.48		0.88		0.36
Control Delay		14.1		14.1		70.2		33.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		14.1		14.1		70.2		33.5
LOS		B		B		E		C
Approach Delay		14.1		14.1		70.2		33.5
Approach LOS		B		B		E		C

Intersection Summary

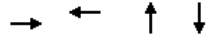
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 25.1
 Intersection Capacity Utilization 68.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
2: Humber Station Rd & King St

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	522	536	232	130
v/c Ratio	0.47	0.48	0.88	0.36
Control Delay	14.1	14.1	70.2	33.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.1	14.1	70.2	33.5
Queue Length 50th (m)	60.8	62.4	50.8	23.0
Queue Length 95th (m)	109.7	112.3	75.0	36.7
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1102	1126	317	439
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	0.47	0.48	0.73	0.30

Intersection Summary

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	15	483	24	18	469	49	71	93	68	14	81	35
Future Volume (vph)	15	483	24	18	469	49	71	93	68	14	81	35
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			0.97			0.99	
Frt		0.99			0.99			0.96			0.96	
Flt Protected		1.00			1.00			0.98			0.99	
Satd. Flow (prot)		1742			1786			1231			1526	
Flt Permitted		0.98			0.98			0.83			0.96	
Satd. Flow (perm)		1710			1745			1043			1465	
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)	15	483	24	18	469	49	71	93	68	14	81	35
RTOR Reduction (vph)	0	1	0	0	2	0	0	14	0	0	12	0
Lane Group Flow (vph)	0	521	0	0	534	0	0	218	0	0	118	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)		77.3			77.3			29.1			29.1	
Effective Green, g (s)		77.3			77.3			29.1			29.1	
Actuated g/C Ratio		0.64			0.64			0.24			0.24	
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)		1101			1124			252			355	
v/s Ratio Prot												
v/s Ratio Perm		0.30			c0.31			c0.21			0.08	
v/c Ratio		0.47			0.48			0.87			0.33	
Uniform Delay, d1		10.9			10.9			43.6			37.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			0.3			25.3			0.6	
Delay (s)		11.3			11.3			68.9			38.0	
Level of Service		B			B			E			D	
Approach Delay (s)		11.3			11.3			68.9			38.0	
Approach LOS		B			B			E			D	

Intersection Summary

HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

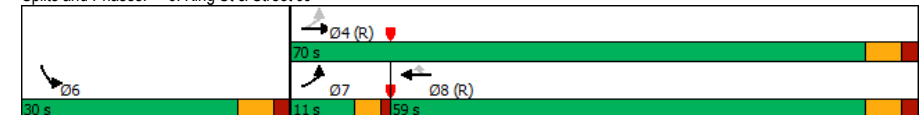
FBPh2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↖	↗		
Traffic Volume (vph)	479	605		
Future Volume (vph)	479	605		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.30	0.38		
Control Delay	5.2	5.9		
Queue Delay	0.0	0.0		
Total Delay	5.2	5.9		
LOS	A	A		
Approach Delay	5.2	5.9		
Approach LOS	A	A		

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: 70
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.38
 Intersection Signal Delay: 5.6
 Intersection Capacity Utilization 58.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FBPh2 2031 Without Improvements
Afternoon Peak Hour

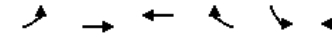


Lane Group	EBT	WBT
Lane Group Flow (vph)	479	605
v/c Ratio	0.30	0.38
Control Delay	5.2	5.9
Queue Delay	0.0	0.0
Total Delay	5.2	5.9
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	61.8	84.6
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1612	1612
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.30	0.38

Intersection Summary

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

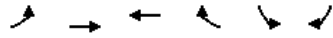


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↑	↔	↔	↔
Traffic Volume (vph)	0	479	605	0	0	0
Future Volume (vph)	0	479	605	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frnt		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	479	605	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	479	605	0	0	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)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		1476	1476			
v/s Ratio Prot		0.25	c0.32			
v/s Ratio Perm						
v/c Ratio		0.32	0.41			
Uniform Delay, d1		3.1	3.4			
Progression Factor		1.00	1.00			
Incremental Delay, d2		0.6	0.8			
Delay (s)		3.7	4.3			
Level of Service		A	A			
Approach Delay (s)		3.7	4.3		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			4.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	16.0
Intersection Capacity Utilization			58.9%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FBPh2 2031 Without Improvements
Afternoon Peak Hour



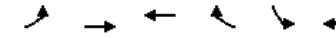
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
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

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	479	605	0	0	0
Future Volume (Veh/h)	0	479	605	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	479	605	0	0	0
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.87				0.90	0.87
vC, conflicting volume	655				1184	705
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	532				1022	589
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	865				215	407
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	479	605	0	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.00	0.28	0.36	0.00	0.00	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			50.0%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

FBPh2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
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						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Volume (veh/h)	0	0	678	0	0	250
Future Volume (Veh/h)	0	0	678	0	0	250
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	0	678	0	0	250
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)						265
pX, platoon unblocked						
vC, conflicting volume	1028	778			728	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1028	778			728	
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	100			100	
cM capacity (veh/h)	238	363			838	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	678	250			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.40	0.15			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			53.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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				0.97	
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1433	0	1883	0	1730	1883
Flt Permitted					0.369	
Satd. Flow (perm)	1433	0	1883	0	652	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	213					
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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	0	678	3	250
Future Volume (vph)	0	678	3	250
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

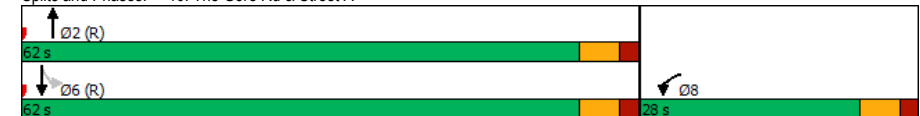
Lead-Lag Optimize?

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	0.03	0.42	0.01	0.16
Control Delay	0.2	6.5	6.0	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	6.5	6.0	4.5
LOS	A	A	A	A
Approach Delay	0.2	6.5		4.5
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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.42
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 61.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	678	3	250
v/c Ratio	0.03	0.42	0.01	0.16
Control Delay	0.2	6.5	6.0	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	6.5	6.0	4.5
Queue Length 50th (m)	0.0	0.0	0.0	0.0
Queue Length 95th (m)	0.0	96.2	1.2	28.6
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	511	1598	553	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	0.03	0.42	0.01	0.16

Intersection Summary

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↖		↗	↘
Traffic Volume (vph)	0	13	678	0	3	250
Future Volume (vph)	0	13	678	0	3	250
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		0.96	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		1658	1883
Flt Permitted	1.00		1.00		0.37	1.00
Satd. Flow (perm)	1433		1883		643	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	13	678	0	3	250
RTOR Reduction (vph)	12	0	0	0	0	0
Lane Group Flow (vph)	1	0	678	0	3	250
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		494	1447
v/s Ratio Prot	c0.00		c0.36			0.13
v/s Ratio Perm					0.00	
v/c Ratio	0.01		0.47		0.01	0.17
Uniform Delay, d1	36.7		3.8		2.4	2.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.0		1.1		0.0	0.3
Delay (s)	36.7		4.8		2.4	3.0
Level of Service	D		A		A	A
Approach Delay (s)	36.7		4.8			3.0
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	4.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
48: Humber Station Rd & Street E

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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									0.850			
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)								65				
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

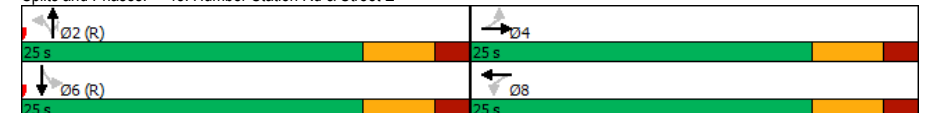
FBPh2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↔	↔	↔	
Traffic Volume (vph)	76	0	123	42	42	
Future Volume (vph)	76	0	123	42	42	
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	None	None	C-Max	C-Max	C-Max	None
Act Effct Green (s)		8.1	37.1	37.1	37.1	
Actuated g/C Ratio		0.16	0.74	0.74	0.74	
v/c Ratio		0.33	0.09	0.03	0.03	
Control Delay		21.6	4.8	1.3	4.9	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		21.6	4.8	1.3	4.9	
LOS		C	A	A	A	
Approach Delay		21.6	3.9		4.9	
Approach LOS		C	A		A	

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: Actuated-Coordinated
 Maximum v/c Ratio: 0.33
 Intersection Signal Delay: 8.8
 Intersection Capacity Utilization 20.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	76	123	42	42
v/c Ratio	0.33	0.09	0.03	0.03
Control Delay	21.6	4.8	1.3	4.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	21.6	4.8	1.3	4.9
Queue Length 50th (m)	6.4	4.0	0.0	1.3
Queue Length 95th (m)	14.7	10.9	2.1	4.8
Internal Link Dist (m)	185.7	130.4		336.1
Turn Bay Length (m)				
Base Capacity (vph)	541	1397	1204	1397
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	0.14	0.09	0.03	0.03

Intersection Summary

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	0	0	0	76	0	0	0	123	42	0	42	0
Future Volume (vph)	0	0	0	76	0	0	0	123	42	0	42	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	
Fr t					1.00			1.00	0.85		1.00	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1789			1883	1601		1883	
Fit 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	76	0	0	0	123	42	0	42	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	15	0	0	0
Lane Group Flow (vph)	0	0	0	0	76	0	0	123	27	0	42	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)					5.7			32.3	32.3		32.3	
Effective Green, g (s)					5.7			32.3	32.3		32.3	
Actuated g/C Ratio					0.11			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)					162			1216	1034		1216	
v/s Ratio Prot								c0.07			0.02	
v/s Ratio Perm					c0.05				0.02			
v/c Ratio					0.47			0.10	0.03		0.03	
Uniform Delay, d1					20.7			3.4	3.2		3.2	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					2.1			0.2	0.0		0.1	
Delay (s)					22.9			3.5	3.2		3.3	
Level of Service					C			A	A		A	
Approach Delay (s)		0.0			22.9			3.4			3.3	
Approach LOS		A			C			A			A	

Intersection Summary

HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.16		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

58: Humber Station Rd & Street Y

FBPh2 2031 Without Improvements

Afternoon Peak Hour

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	0.89	0.97		0.95		0.99
Frt		0.850				0.850		0.949				0.993
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1383	0	1789	1883	1601	1789	1737	0	1789	1858	0
Flt Permitted	0.757			0.757			0.729			0.623		
Satd. Flow (perm)	1324	1383	0	1257	1883	1470	1220	1737	0	1112	1858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		804				645		51				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

FBPh2 2031 Without Improvements

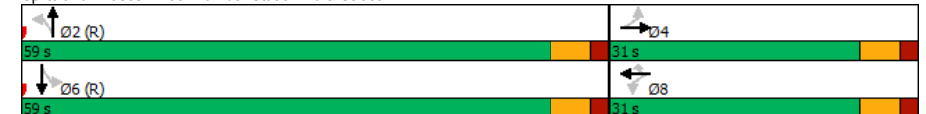
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	1	0	15	15	8	142	74	41
Future Volume (vph)	1	0	15	15	8	142	74	41
Turn Type	Perm	NA	Perm	Perm	Perm	NA	Perm	NA
Protected Phases		4				2		6
Permitted Phases	4		8	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	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
Total Split (s)	31.0	31.0	31.0	31.0	59.0	59.0	59.0	59.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	65.6%	65.6%	65.6%	65.6%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	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	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	11.1	11.1	11.1	11.1	73.9	73.9	73.9	73.9
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.82	0.82	0.82	0.82
v/c Ratio	0.01	0.00	0.10	0.02	0.01	0.15	0.08	0.03
Control Delay	29.0	0.0	32.1	0.1	5.0	3.4	4.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.0	32.1	0.1	5.0	3.4	4.6	4.3
LOS	C	A	C	A	A	A	A	A
Approach Delay		14.5				3.5		4.5
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: 0.15
 Intersection Signal Delay: 4.9
 Intersection Capacity Utilization 49.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
58: Humber Station Rd & Street Y

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	1	1	15	15	8	216	74	43
v/c Ratio	0.01	0.00	0.10	0.02	0.01	0.15	0.08	0.03
Control Delay	29.0	0.0	32.1	0.1	5.0	3.4	4.6	4.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	0.0	32.1	0.1	5.0	3.4	4.6	4.3
Queue Length 50th (m)	0.2	0.0	2.6	0.0	0.2	5.0	2.2	1.2
Queue Length 95th (m)	1.5	0.0	7.5	0.0	1.9	18.4	9.3	5.7
Internal Link Dist (m)		57.8			170.3		130.4	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	367	964	349	874	1001	1435	913	1526
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	0.00	0.00	0.04	0.02	0.01	0.15	0.08	0.03

Intersection Summary

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	1	0	1	15	0	15	8	142	74	74	41	2
Future Volume (vph)	1	0	1	15	0	15	8	142	74	74	41	2
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	
Frbp, ped/bikes	1.00	0.86		1.00	0.92	1.00	0.97			1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.88	1.00	0.89	1.00			0.95	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.95			1.00	0.99	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1662	1383		1578	1470	1590	1737			1695	1858	
Fit Permitted	0.76	1.00		0.76	1.00	0.73	1.00			0.62	1.00	
Satd. Flow (perm)	1325	1383		1258	1470	1220	1737			1112	1858	
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)	1	0	1	15	0	15	8	142	74	74	41	2
RTOR Reduction (vph)	0	1	0	0	0	14	0	12	0	0	0	0
Lane Group Flow (vph)	1	0	0	15	0	1	8	204	0	74	43	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	Perm	Perm	NA		Perm	NA		NA
Protected Phases		4			8		2				6	
Permitted Phases	4			8		8	2				6	
Actuated Green, G (s)	8.9	8.9		8.9	8.9	69.1	69.1			69.1	69.1	
Effective Green, g (s)	8.9	8.9		8.9	8.9	69.1	69.1			69.1	69.1	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.77	0.77			0.77	0.77	
Clearance Time (s)	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	
Lane Grp Cap (vph)	131	136		124		145	936	1333		853	1426	
v/s Ratio Prot		0.00						c0.12			0.02	
v/s Ratio Perm	0.00			c0.01		0.00	0.01			0.07		
v/c Ratio	0.01	0.00		0.12		0.01	0.01	0.15		0.09	0.03	
Uniform Delay, d1	36.6	36.5		37.0		36.6	2.4	2.8		2.6	2.5	
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.0		0.4		0.0	0.0	0.2		0.2	0.0	
Delay (s)	36.6	36.5		37.4		36.6	2.5	3.0		2.8	2.5	
Level of Service	D	D		D		D	A	A		A	A	
Approach Delay (s)		36.6			37.0			3.0			2.7	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
64: Street JJ & Street Y

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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	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												
Friction												
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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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	3	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	3	0	0	11	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	3	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	3	11	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)	905	909	900	900								
Control Delay (s)	7.0	7.0	6.9	6.9								
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	6.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

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	3	0	0	11	0	0	0	0	0	0	0	
Future Volume (vph)	0	3	0	0	11	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	3	0	0	11	0	0	0	0	0	0	0	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1									
Volume Total (vph)	3	11	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)	905	909	900	900									
Control Delay (s)	7.0	7.0	6.9	6.9									
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
84: Street JJ & Street EE

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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)		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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	1	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	1	0	0	0	0	0	0	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	0	0	0	1	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	50	100	100	100	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	50	100	100	100	100	50	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	849	724	875	756	724	975	1490			1490		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	1	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	724	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	10.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	10.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay					10.0							
Intersection Capacity Utilization			29.6%			ICU Level of Service				A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	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	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												
Fr												
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)		275.5			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

FBPh2 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	0	0	1	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	0	0	0	1	0	0	0	0	0	0	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	0	0	0	1	0	0	0	0	0	0	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)												
pX, platoon unblocked												
vC, conflicting volume	100	100	100	100	100	100	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	100	100	100	100	100	100	50			50		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	100	100			100		
cM capacity (veh/h)	754	724	875	756	724	875	1490			1490		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	0	1	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	1700	724	1700	1700								
Volume to Capacity	0.00	0.00	0.00	0.00								
Queue Length 95th (m)	0.0	0.0	0.0	0.0								
Control Delay (s)	0.0	10.0	0.0	0.0								
Lane LOS	A	A										
Approach Delay (s)	0.0	10.0	0.0	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay					10.0							
Intersection Capacity Utilization					29.6%	ICU Level of Service		A				
Analysis Period (min)					15							

Lanes and Geometrics
88: Humber Station Rd & Street EE

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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					0.999	
Flt Protected						
Satd. Flow (prot)	1883	0	0	1883	1882	0
Flt Permitted						
Satd. Flow (perm)	1883	0	0	1883	1882	0
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

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

FBPh2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	158	130	1
Future Volume (Veh/h)	0	0	0	158	130	1
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	0	0	158	130	1
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)				347	322	
pX, platoon unblocked						
vC, conflicting volume	388	230	181			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	388	230	181			
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	100	100			
cM capacity (veh/h)	564	741	1335			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	0	158	131			
Volume Left	0	0	0			
Volume Right	0	0	1			
cSH	1700	1335	1700			
Volume to Capacity	0.00	0.00	0.08			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			15.5%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

Future Total Phase 2 2031
Morning Peak Hour

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	0.94		0.86	0.95		0.86	0.96		0.86	0.90		0.86
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1697	1779	1570	1713	1779	1420	1765	1779	1570	1713	1902	1633
Flt Permitted	0.470			0.438			0.167			0.655		
Satd. Flow (perm)	789	1779	1346	747	1779	1218	298	1779	1346	1060	1902	1400
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			140			33			109			115
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

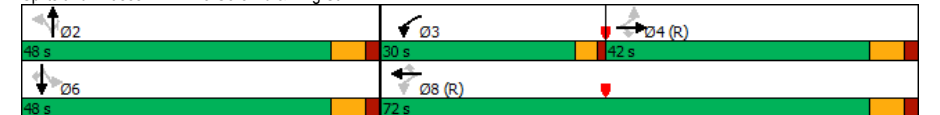
Future Total Phase 2 2031
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	318	171	375	523	27	11	140	109	100	458	157
Future Volume (vph)	51	318	171	375	523	27	11	140	109	100	458	157
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)	42.0	42.0	42.0	30.0	72.0	72.0	48.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	35.0%	35.0%	35.0%	25.0%	60.0%	60.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
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)	50.2	50.2	50.2	75.3	72.7	72.7	34.1	34.1	34.1	34.1	34.1	34.1
Actuated g/C Ratio	0.42	0.42	0.42	0.63	0.61	0.61	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.16	0.43	0.27	0.61	0.49	0.04	0.13	0.28	0.24	0.33	0.85	0.33
Control Delay	28.9	30.1	8.7	16.4	16.3	3.4	32.8	33.4	6.4	35.5	55.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	30.1	8.7	16.4	16.3	3.4	32.8	33.4	6.4	35.5	55.0	11.4
LOS	C	C	A	B	B	A	C	C	A	D	D	B
Approach Delay		23.2			16.0			22.1			42.7	
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: 0.85
 Intersection Signal Delay: 26.0
 Intersection Capacity Utilization 100.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service G

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



Queues
1: The Gore Rd & King St

Future Total Phase 2 2031
Morning Peak Hour




Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	51	318	171	375	523	27	11	140	109	100	458	157
v/c Ratio	0.16	0.43	0.27	0.61	0.49	0.04	0.13	0.28	0.24	0.33	0.85	0.33
Control Delay	28.9	30.1	8.7	16.4	16.3	3.4	32.8	33.4	6.4	35.5	55.0	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	30.1	8.7	16.4	16.3	3.4	32.8	33.4	6.4	35.5	55.0	11.4
Queue Length 50th (m)	7.7	54.9	4.5	41.9	68.8	0.0	2.0	26.3	0.0	19.1	104.5	7.5
Queue Length 95th (m)	20.7	98.1	23.4	70.1	110.8	3.7	6.8	40.5	12.5	32.5	135.0	22.9
Internal Link Dist (m)	339.2		183.4				604.6		554.8			
Turn Bay Length (m)	139.9			25.0			199.9			50.0		
Base Capacity (vph)	329	743	644	677	1077	750	102	613	535	365	656	558
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	0.16	0.43	0.27	0.55	0.49	0.04	0.11	0.23	0.20	0.27	0.70	0.28

Intersection Summary

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

Future Total Phase 2 2031
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	318	171	375	523	27	11	140	109	100	458	157
Future Volume (vph)	51	318	171	375	523	27	11	140	109	100	458	157
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
Frbp, 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	0.94	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.90	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)	1594	1779	1346	1672	1779	1218	1703	1779	1346	1540	1902	1400
Flt Permitted	0.47	1.00	1.00	0.44	1.00	1.00	0.17	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	789	1779	1346	771	1779	1218	299	1779	1346	1062	1902	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	318	171	375	523	27	11	140	109	100	458	157
RTOR Reduction (vph)	0	0	81	0	0	11	0	0	78	0	0	82
Lane Group Flow (vph)	51	318	90	375	523	16	11	140	31	100	458	75
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	4%	8%	4%	3%	8%	15%	0%	8%	4%	3%	1%	0%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4		3		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	50.2	50.2	50.2	72.7	72.7	72.7	34.1	34.1	34.1	34.1	34.1	34.1
Effective Green, g (s)	50.2	50.2	50.2	72.7	72.7	72.7	34.1	34.1	34.1	34.1	34.1	34.1
Actuated g/C Ratio	0.42	0.42	0.42	0.61	0.61	0.61	0.28	0.28	0.28	0.28	0.28	0.28
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)	330	744	563	606	1077	737	84	505	382	301	540	397
v/s Ratio Prot	0.18		c0.10		0.29		0.08		c0.24		0.05	
v/s Ratio Perm	0.06		0.07		c0.28		0.01		0.04		0.02	
v/c Ratio	0.15	0.43	0.16	0.62	0.49	0.02	0.13	0.28	0.08	0.33	0.85	0.19
Uniform Delay, d1	21.7	24.7	21.7	13.0	13.2	9.4	31.9	33.4	31.5	34.0	40.5	32.5
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	1.0	1.8	0.6	1.9	1.6	0.1	0.7	0.3	0.1	0.7	11.8	0.2
Delay (s)	22.7	26.5	22.4	14.9	14.8	9.5	32.6	33.7	31.6	34.6	52.3	32.7
Level of Service	C	C	C	B	B	A	C	C	C	C	D	C
Approach Delay (s)	24.8			14.7			32.7			45.5		
Approach LOS	C			B			C			D		

Intersection Summary

HCM 2000 Control Delay	27.9	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)	17.2
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Total Phase 2 2031

Morning Peak Hour

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	0.97		0.88	0.96		0.88	0.97		0.99	0.93		0.96
Frt			0.850			0.850			0.987			0.949
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1812	1570	1590	1795	1585	1521	1732	0	1649	1707	0
Flt Permitted	0.275			0.332			0.166			0.536		
Satd. Flow (perm)	484	1812	1378	533	1795	1392	258	1732	0	861	1707	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			122			5			27
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

Future Total Phase 2 2031

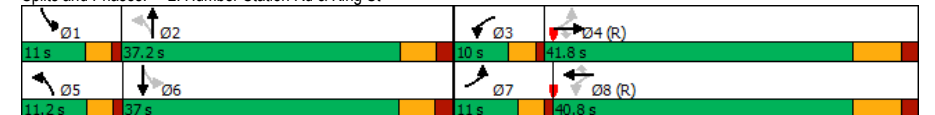
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	→	↗	↖	→	↗	↖	→	↗	↖
Traffic Volume (vph)	79	448	345	73	485	78	67	183	122	324
Future Volume (vph)	79	448	345	73	485	78	67	183	122	324
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	41.8	41.8	10.0	40.8	40.8	11.2	37.2	11.0	37.0
Total Split (%)	11.0%	41.8%	41.8%	10.0%	40.8%	40.8%	11.2%	37.2%	11.0%	37.0%
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)	48.3	39.3	39.3	47.1	38.7	38.7	36.7	27.6	38.0	29.7
Actuated g/C Ratio	0.48	0.39	0.39	0.47	0.39	0.39	0.37	0.28	0.38	0.30
v/c Ratio	0.25	0.63	0.53	0.23	0.70	0.13	0.36	0.42	0.32	0.93
Control Delay	16.3	31.7	16.1	16.4	35.0	1.8	22.3	30.6	20.1	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	31.7	16.1	16.4	35.0	1.8	22.3	30.6	20.1	59.1
LOS	B	C	B	B	D	A	C	C	C	E
Approach Delay		24.1			28.8			28.5		51.3
Approach LOS		C			C			C		D

Intersection Summary

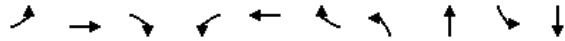
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 32.8
 Intersection Capacity Utilization 80.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

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



Queues
2: Humber Station Rd & King St

Future Total Phase 2 2031
Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	79	448	345	73	485	78	67	201	122	491
v/c Ratio	0.25	0.63	0.53	0.23	0.70	0.13	0.36	0.42	0.32	0.93
Control Delay	16.3	31.7	16.1	16.4	35.0	1.8	22.3	30.6	20.1	59.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.3	31.7	16.1	16.4	35.0	1.8	22.3	30.6	20.1	59.1
Queue Length 50th (m)	8.5	78.9	26.8	7.9	89.6	0.0	7.6	30.5	14.2	89.9
Queue Length 95th (m)	16.6	114.7	56.2	15.7	#140.1	3.7	15.9	50.5	26.0	#151.3
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)	321	720	653	316	699	617	188	543	385	544
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.62	0.53	0.23	0.69	0.13	0.36	0.37	0.32	0.90

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

Future Total Phase 2 2031
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	79	448	345	73	485	78	67	183	18	122	324	167
Future Volume (vph)	79	448	345	73	485	78	67	183	18	122	324	167
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	0.99		1.00	0.96	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	1.00	1.00		0.96	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.95	
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)	1716	1812	1378	1571	1795	1392	1515	1731		1589	1707	
Flt Permitted	0.28	1.00	1.00	0.33	1.00	1.00	0.17	1.00		0.54	1.00	
Satd. Flow (perm)	497	1812	1378	549	1795	1392	265	1731		896	1707	
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)	79	448	345	73	485	78	67	183	18	122	324	167
RTOR Reduction (vph)	0	0	110	0	0	49	0	4	0	0	19	0
Lane Group Flow (vph)	79	448	235	73	485	29	67	197	0	122	472	0
Confl. Peds. (#/hr)	50	0	50	50	0	50	50	0	50	50	0	50
Heavy Vehicles (%)	2%	6%	4%	11%	7%	3%	16%	2%	72%	7%	2%	3%
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)	43.3	37.7	37.7	42.1	37.1	37.1	34.4	28.4		37.2	29.7	
Effective Green, g (s)	43.3	37.7	37.7	42.1	37.1	37.1	34.4	28.4		37.2	29.7	
Actuated g/C Ratio	0.43	0.38	0.38	0.42	0.37	0.37	0.34	0.28		0.37	0.30	
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)	283	683	519	282	665	516	166	491		385	506	
v/s Ratio Prot	c0.02	0.25		0.01	c0.27		c0.02	0.11		0.02	c0.28	
v/s Ratio Perm	0.11		0.17	0.10		0.02	0.11			0.09		
v/c Ratio	0.28	0.66	0.45	0.26	0.73	0.06	0.40	0.40		0.32	0.93	
Uniform Delay, d1	18.3	25.8	23.4	18.5	27.1	20.2	24.4	28.9		21.5	34.2	
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	0.5	4.9	2.8	0.5	6.9	0.2	1.6	0.5		0.5	24.3	
Delay (s)	18.9	30.7	26.3	18.9	34.0	20.4	26.0	29.5		21.9	58.5	
Level of Service	B	C	C	B	C	C	C	C		C	E	
Approach Delay (s)		27.8			30.6			28.6			51.2	
Approach LOS		C			C			C			D	

Intersection Summary

HCM 2000 Control Delay 34.7 HCM 2000 Level of Service C
 HCM 2000 Volume to Capacity ratio 0.75
 Actuated Cycle Length (s) 100.0 Sum of lost time (s) 21.6
 Intersection Capacity Utilization 80.7% ICU Level of Service D
 Analysis Period (min) 15
 c Critical Lane Group

Lanes and Geometrics
6: King St & Street JJ

Future Total Phase 2 2031
Morning Peak Hour

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	1
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	0.91	0.89
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1765	1921	1921	1633	1825	1633
Flt Permitted	0.155				0.950	
Satd. Flow (perm)	288	1921	1921	1388	1654	1450
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				16		154
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

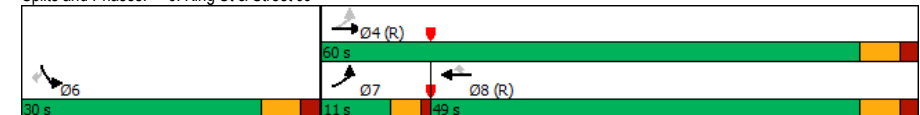
Future Total Phase 2 2031
Morning Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	70	469	778	39	343	154
Future Volume (vph)	70	469	778	39	343	154
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0	30.0
Total Split (s)	11.0	60.0	49.0	49.0	30.0	30.0
Total Split (%)	12.2%	66.7%	54.4%	54.4%	33.3%	33.3%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	Min	Min
Act Effct Green (s)	59.2	57.2	48.6	48.6	20.8	20.8
Actuated g/C Ratio	0.66	0.64	0.54	0.54	0.23	0.23
v/c Ratio	0.24	0.38	0.75	0.05	0.81	0.34
Control Delay	8.3	9.6	24.0	8.8	48.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	9.6	24.0	8.8	48.3	6.8
LOS	A	A	C	A	D	A
Approach Delay		9.5	23.3		35.5	
Approach LOS		A	C		D	

Intersection Summary

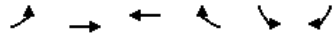
Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 22.5
 Intersection Capacity Utilization 78.3%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Total Phase 2 2031
Morning Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	70	469	778	39	343	154
v/c Ratio	0.24	0.38	0.75	0.05	0.81	0.34
Control Delay	8.3	9.6	24.0	8.8	48.3	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.3	9.6	24.0	8.8	48.3	6.8
Queue Length 50th (m)	4.2	38.1	111.2	2.0	57.5	0.0
Queue Length 95th (m)	9.4	61.0	#189.6	7.5	86.3	14.3
Internal Link Dist (m)		86.9	276.5		238.0	
Turn Bay Length (m)	50.0			25.0		
Base Capacity (vph)	304	1220	1037	756	486	499
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.38	0.75	0.05	0.71	0.31

Intersection Summary

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

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

Future Total Phase 2 2031
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	70	469	778	39	343	154
Future Volume (vph)	70	469	778	39	343	154
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	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.85	1.00	0.89
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1765	1921	1921	1388	1825	1450
Flt Permitted	0.16	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	288	1921	1921	1388	1825	1450
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	469	778	39	343	154
RTOR Reduction (vph)	0	0	0	8	0	118
Lane Group Flow (vph)	70	469	778	31	343	36
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	57.2	57.2	47.8	47.8	20.8	20.8
Effective Green, g (s)	57.2	57.2	47.8	47.8	20.8	20.8
Actuated g/C Ratio	0.64	0.64	0.53	0.53	0.23	0.23
Clearance Time (s)	4.0	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
Lane Grp Cap (vph)	271	1220	1020	737	421	335
v/s Ratio Prot	0.02	c0.24	c0.40		c0.19	
v/s Ratio Perm	0.15			0.02		0.02
v/c Ratio	0.26	0.38	0.76	0.04	0.81	0.11
Uniform Delay, d1	11.8	7.9	16.6	10.1	32.8	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.9	5.4	0.1	11.5	0.1
Delay (s)	12.3	8.8	22.0	10.2	44.3	27.4
Level of Service	B	A	C	B	D	C
Approach Delay (s)		9.3	21.5		39.0	
Approach LOS		A	C		D	

Intersection Summary

HCM 2000 Control Delay	22.6	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)	16.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Total Phase 2 2031
Morning Peak Hour

	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						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1633	1662	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1633	1662	0
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

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

Future Total Phase 2 2031
Morning Peak Hour

	EBL	EBT	WBT	WBR	SBL	SBR
Movement	↔	↔	↔	↔	↔	↔
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	0	812	668	39	0	149
Future Volume (Veh/h)	0	812	668	39	0	149
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	812	668	39	0	149
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.78				0.84	0.78
vC, conflicting volume	757				1580	768
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547				1288	562
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	61
cM capacity (veh/h)	771				140	380
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	812	668	39	149	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	39	149	
cSH	1700	1700	1700	1700	380	
Volume to Capacity	0.00	0.48	0.39	0.02	0.39	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	14.4	
Control Delay (s)	0.0	0.0	0.0	0.0	20.5	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		20.5	
Approach LOS					C	
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			62.7%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Total Phase 2 2031
Morning Peak Hour

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		0.981			
Flt Protected						
Satd. Flow (prot)	1662	0	1853	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1662	0	1853	0	0	1921
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

Future Total Phase 2 2031
Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	20	198	32	0	759
Future Volume (Veh/h)	0	20	198	32	0	759
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	198	32	0	759
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	0.84					
vC, conflicting volume	1073	314			280	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	990	314			280	
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)	211	670			1239	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	20	230	759			
Volume Left	0	0	0			
Volume Right	20	32	0			
cSH	670	1700	1700			
Volume to Capacity	0.03	0.14	0.45			
Queue Length 95th (m)	0.7	0.0	0.0			
Control Delay (s)	10.5	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.5	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			58.4%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Total Phase 2 2031
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98		0.90	
Frt	0.976		0.980			
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1762	0	1810	0	1765	1921
Flt Permitted	0.960				0.622	
Satd. Flow (perm)	1613	0	1810	0	1043	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	12		17			
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

Future Total Phase 2 2031
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	113	186	27	646
Future Volume (vph)	113	186	27	646
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)	30.0	60.0	60.0	60.0
Total Split (%)	33.3%	66.7%	66.7%	66.7%
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

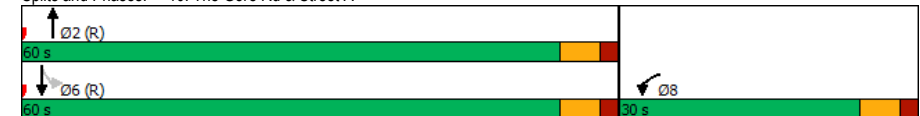
Lead-Lag Optimize?

	None	C-Min	C-Min	C-Min
Recall Mode				
Act Effct Green (s)	12.8	65.2	65.2	65.2
Actuated g/C Ratio	0.14	0.72	0.72	0.72
v/c Ratio	0.52	0.17	0.04	0.46
Control Delay	38.5	4.8	5.1	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	38.5	4.8	5.1	7.4
LOS	D	A	A	A
Approach Delay	38.5	4.8		7.3
Approach LOS	D	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: 0.52
 Intersection Signal Delay: 10.9
 Intersection Capacity Utilization 60.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A











Future Total Phase 2 2031
Morning Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	137	218	27	646
v/c Ratio	0.52	0.17	0.04	0.46
Control Delay	38.5	4.8	5.1	7.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	38.5	4.8	5.1	7.4
Queue Length 50th (m)	21.4	8.8	1.1	37.9
Queue Length 95th (m)	34.5	23.8	4.8	87.8
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	478	1315	755	1391
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	0.29	0.17	0.04	0.46

Intersection Summary

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

Future Total Phase 2 2031
Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	113	24	186	32	27	646
Future Volume (vph)	113	24	186	32	27	646
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		0.90	1.00
Frt	0.98		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1763		1811		1592	1921
Flt Permitted	0.96		1.00		0.62	1.00
Satd. Flow (perm)	1763		1811		1042	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	113	24	186	32	27	646
RTOR Reduction (vph)	10	0	5	0	0	0
Lane Group Flow (vph)	127	0	213	0	27	646
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.8		65.2		65.2	65.2
Effective Green, g (s)	12.8		65.2		65.2	65.2
Actuated g/C Ratio	0.14		0.72		0.72	0.72
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)	250		1311		754	1391
v/s Ratio Prot	c0.07		0.12			c0.34
v/s Ratio Perm					0.03	
v/c Ratio	0.51		0.16		0.04	0.46
Uniform Delay, d1	35.7		3.9		3.5	5.1
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.6		0.3		0.1	1.1
Delay (s)	37.3		4.1		3.6	6.3
Level of Service	D		A		A	A
Approach Delay (s)	37.3		4.1			6.2
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			9.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.47			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			60.5%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics

48: Humber Station Rd & Street E

Future Total Phase 2 2031

Morning Peak Hour

	↖	→	↘	↙	←	↖	↙	↖	↙	↘	↙	↘
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		0.96		0.92	0.95		
Frt		0.879			0.996				0.850			
Flt Protected		0.997			0.954		0.950		0.950			
Satd. Flow (prot)	0	1556	0	0	1821	0	1789	1883	1633	1825	1921	0
Flt Permitted		0.988			0.700		0.585		0.659			
Satd. Flow (perm)	0	1538	0	0	1259	0	1053	1883	1495	1199	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			3				191			
Link Speed (k/h)		50			50				50			50
Link Distance (m)		138.8			126.7				153.0			361.4
Travel Time (s)		10.0			9.1				11.0			26.0

Intersection Summary

Area Type: Other

Timings

48: Humber Station Rd & Street E

Future Total Phase 2 2031

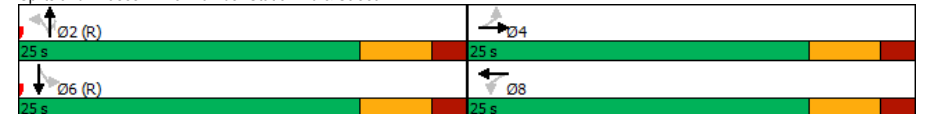
Morning Peak Hour

	↖	→	↘	↙	←	↖	↙	↖	↙	↘	↙	↘
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT			
Lane Configurations		↕		↕	↕	↕	↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	3	3	105	2	19	154	191	1	285			
Future Volume (vph)	3	3	105	2	19	154	191	1	285			
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA			
Protected Phases		4		8		2		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		0.09		0.23	0.05	0.22	0.28	0.00	0.39			
Control Delay		4.6		11.9	10.3	11.5	3.4	10.0	13.3			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		4.6		11.9	10.3	11.5	3.4	10.0	13.3			
LOS		A		B	B	B	A	A	B			
Approach Delay		4.6		11.9		7.2			13.3			
Approach LOS		A		B		A			B			

Intersection Summary

Cycle Length: 50
 Actuated Cycle Length: 50
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 50.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

Future Total Phase 2 2031
Morning Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	110	19	154	191	1	285
v/c Ratio	0.09	0.23	0.05	0.22	0.28	0.00	0.39
Control Delay	4.6	11.9	10.3	11.5	3.4	10.0	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	11.9	10.3	11.5	3.4	10.0	13.3
Queue Length 50th (m)	0.3	6.4	1.1	9.2	0.0	0.1	18.4
Queue Length 95th (m)	5.6	15.2	4.3	19.1	9.5	0.8	34.1
Internal Link Dist (m)	114.8	102.7		129.0			337.4
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	616	480	400	715	686	455	729
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	0.09	0.23	0.05	0.22	0.28	0.00	0.39

Intersection Summary

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

Future Total Phase 2 2031
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	3	3	52	105	2	3	19	154	191	1	285	0
Future Volume (vph)	3	3	52	105	2	3	19	154	191	1	285	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	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frbp, ped/bikes		0.92			1.00		1.00	1.00	0.92	1.00	1.00	
Flpb, ped/bikes		1.00			0.94		0.96	1.00	1.00	0.95	1.00	
Frt		0.88			1.00		1.00	1.00	0.85	1.00	1.00	
Fit Protected		1.00			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1552			1717		1710	1883	1495	1728	1921	
Fit Permitted		0.99			0.70		0.59	1.00	1.00	0.66	1.00	
Satd. Flow (perm)		1538			1259		1053	1883	1495	1199	1921	
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)	3	3	52	105	2	3	19	154	191	1	285	0
RTOR Reduction (vph)	0	32	0	0	2	0	0	0	118	0	0	0
Lane Group Flow (vph)	0	26	0	0	108	0	19	154	73	1	285	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	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)		584			478		400	715	568	455	729	
v/s Ratio Prot							0.08				c0.15	
v/s Ratio Perm		0.02			c0.09		0.02		0.05	0.00		
v/c Ratio		0.04			0.23		0.05	0.22	0.13	0.00	0.39	
Uniform Delay, d1		9.8			10.5		9.8	10.5	10.1	9.6	11.3	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			1.1		0.2	0.7	0.5	0.0	1.6	
Delay (s)		9.9			11.6		10.0	11.2	10.6	9.6	12.9	
Level of Service		A			B		B	B	B	A	B	
Approach Delay (s)		9.9			11.6		10.8				12.9	
Approach LOS		A			B		B				B	

Intersection Summary

HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

58: Humber Station Rd & Street Y

Future Total Phase 2 2031

Morning Peak Hour

	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	0.99		0.92		0.92	0.94	0.98		0.96		1.00
Frt	0.987			0.850			0.957					
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1874	0	1825	1921	1633	1789	1770	0	1825	1920	0
Flt Permitted	0.717			0.471			0.499			0.525		
Satd. Flow (perm)	1288	1874	0	829	1921	1500	888	1770	0	972	1920	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				73			36			
Link Speed (k/h)		50				50			50			50
Link Distance (m)		81.8				813.2			194.3			153.0
Travel Time (s)		5.9				58.6			14.0			11.0

Intersection Summary

Area Type: Other

Timings

58: Humber Station Rd & Street Y

Future Total Phase 2 2031

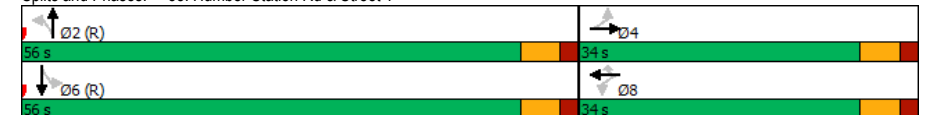
Morning Peak Hour

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	7	189	81	61	73	6	272	55	419
Future Volume (vph)	7	189	81	61	73	6	272	55	419
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)	34.0	34.0	34.0	34.0	34.0	56.0	56.0	56.0	56.0
Total Split (%)	37.8%	37.8%	37.8%	37.8%	37.8%	62.2%	62.2%	62.2%	62.2%
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)	15.0	15.0	15.0	15.0	15.0	63.0	63.0	63.0	63.0
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.70	0.70	0.70	0.70
v/c Ratio	0.03	0.65	0.59	0.19	0.24	0.01	0.30	0.08	0.31
Control Delay	29.0	43.4	51.1	31.9	9.4	5.5	5.9	5.7	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	43.4	51.1	31.9	9.4	5.5	5.9	5.7	6.5
LOS	C	D	D	C	A	A	A	A	A
Approach Delay		42.9		31.5			5.9		6.4
Approach LOS		D		C			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: 0.65
 Intersection Signal Delay: 16.5
 Intersection Capacity Utilization 65.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
58: Humber Station Rd & Street Y

Future Total Phase 2 2031
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	207	81	61	73	6	381	55	420
v/c Ratio	0.03	0.65	0.59	0.19	0.24	0.01	0.30	0.08	0.31
Control Delay	29.0	43.4	51.1	31.9	9.4	5.5	5.9	5.7	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.0	43.4	51.1	31.9	9.4	5.5	5.9	5.7	6.5
Queue Length 50th (m)	1.1	34.2	13.6	9.5	0.0	0.3	19.8	2.7	24.8
Queue Length 95th (m)	4.6	52.9	27.2	19.1	10.7	1.7	40.0	7.9	47.2
Internal Link Dist (m)		57.8		789.2			170.3		129.0
Turn Bay Length (m)	45.0		25.0		25.0	50.0		50.0	
Base Capacity (vph)	400	587	257	597	516	621	1250	680	1344
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	0.02	0.35	0.32	0.10	0.14	0.01	0.30	0.08	0.31

Intersection Summary

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

Future Total Phase 2 2031
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	7	189	18	81	61	73	6	272	109	55	419	1
Future Volume (vph)	7	189	18	81	61	73	6	272	109	55	419	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		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	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	0.93	1.00		0.92	1.00	1.00	0.94	1.00		0.96	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1706	1874		1679	1921	1500	1678	1770		1751	1920	
Fit Permitted	0.72	1.00		0.47	1.00	1.00	0.50	1.00		0.53	1.00	
Satd. Flow (perm)	1288	1874		833	1921	1500	881	1770		968	1920	
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	189	18	81	61	73	6	272	109	55	419	1
RTOR Reduction (vph)	0	5	0	0	0	61	0	11	0	0	0	0
Lane Group Flow (vph)	7	202	0	81	61	12	6	370	0	55	420	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%
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)	15.0	15.0		15.0	15.0	15.0	63.0	63.0		63.0	63.0	
Effective Green, g (s)	15.0	15.0		15.0	15.0	15.0	63.0	63.0		63.0	63.0	
Actuated g/C Ratio	0.17	0.17		0.17	0.17	0.17	0.70	0.70		0.70	0.70	
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)	214	312		138	320	250	616	1239		677	1344	
v/s Ratio Prot		c0.11			0.03			0.21			c0.22	
v/s Ratio Perm	0.01			0.10		0.01	0.01			0.06		
v/c Ratio	0.03	0.65		0.59	0.19	0.05	0.01	0.30		0.08	0.31	
Uniform Delay, d1	31.4	35.0		34.6	32.3	31.5	4.1	5.1		4.3	5.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	4.6		6.2	0.3	0.1	0.0	0.6		0.2	0.6	
Delay (s)	31.5	39.6		40.9	32.6	31.6	4.1	5.7		4.5	5.8	
Level of Service	C	D		D	C	C	A	A		A	A	
Approach Delay (s)		39.3			35.4			5.7			5.6	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
64: Street JJ & Street Y

Future Total Phase 2 2031
Morning Peak Hour

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	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		0.996			0.984			0.952				
Flt Protected					0.964						0.996	
Satd. Flow (prot)	0	1913	0	0	1822	0	0	1806	0	0	1913	0
Flt Permitted					0.964						0.996	
Satd. Flow (perm)	0	1913	0	0	1822	0	0	1806	0	0	1913	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

Future Total Phase 2 2031
Morning Peak Hour

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	34	1	49	9	8	0	69	38	25	316	0
Future Volume (vph)	0	34	1	49	9	8	0	69	38	25	316	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	34	1	49	9	8	0	69	38	25	316	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	35	66	107	341								
Volume Left (vph)	0	49	0	25								
Volume Right (vph)	1	8	38	0								
Hadj (s)	-0.02	0.08	-0.19	0.01								
Departure Headway (s)	5.0	5.0	4.3	4.3								
Degree Utilization, x	0.05	0.09	0.13	0.41								
Capacity (veh/h)	650	650	791	812								
Control Delay (s)	8.2	8.5	8.0	10.2								
Approach Delay (s)	8.2	8.5	8.0	10.2								
Approach LOS	A	A	A	B								

Intersection Summary

Delay	9.5
Level of Service	A
Intersection Capacity Utilization	41.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

Future Total Phase 2 2031
Morning Peak Hour

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		
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		0.986			0.979			0.995				
Flt Protected					0.988			0.996			0.991	
Satd. Flow (prot)	0	1894	0	0	1858	0	0	1868	0	0	1904	0
Flt Permitted					0.988			0.996			0.991	
Satd. Flow (perm)	0	1894	0	0	1858	0	0	1868	0	0	1904	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

Future Total Phase 2 2031
Morning Peak Hour

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	88	10	11	27	7	2	24	1	21	90	0
Future Volume (vph)	0	88	10	11	27	7	2	24	1	21	90	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	88	10	11	27	7	2	24	1	21	90	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	98	45	27	111								
Volume Left (vph)	0	11	2	21								
Volume Right (vph)	10	7	1	0								
Hadj (s)	-0.06	-0.04	0.03	0.04								
Departure Headway (s)	4.2	4.3	4.4	4.3								
Degree Utilization, x	0.11	0.05	0.03	0.13								
Capacity (veh/h)	826	808	785	812								
Control Delay (s)	7.7	7.5	7.5	7.9								
Approach Delay (s)	7.7	7.5	7.5	7.9								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.8								
Level of Service				A								
Intersection Capacity Utilization				31.5%			ICU Level of Service				A	
Analysis Period (min)				15								

Lanes and Geometrics
84: Street JJ & Street EE

Future Total Phase 2 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.932						0.988				
Flt Protected					0.950							
Satd. Flow (prot)	0	1790	0	0	1825	0	0	1864	0	0	1921	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1790	0	0	1825	0	0	1864	0	0	1921	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

Future Total Phase 2 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	1	1	43	0	0	0	89	9	0	407	0
Future Volume (Veh/h)	0	1	1	43	0	0	0	89	9	0	407	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	1	1	43	0	0	0	89	9	0	407	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)								262				
pX, platoon unblocked												
vC, conflicting volume	550	605	507	602	600	144	457			148		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	550	605	507	602	600	144	457			148		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	88	100	100	100			100		
cM capacity (veh/h)	402	380	522	354	382	870	1057			1384		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	43	98	407								
Volume Left	0	43	0	0								
Volume Right	1	0	9	0								
cSH	440	354	1057	1384								
Volume to Capacity	0.00	0.12	0.00	0.00								
Queue Length 95th (m)	0.1	3.2	0.0	0.0								
Control Delay (s)	13.2	16.6	0.0	0.0								
Lane LOS	B	C										
Approach Delay (s)	13.2	16.6	0.0	0.0								
Approach LOS	B	C										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization			39.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

Future Total Phase 2 2031
Morning Peak Hour

	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	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		0.877										
Flt Protected								0.997				
Satd. Flow (prot)	0	1685	0	0	1921	0	0	1878	0	0	1921	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	1685	0	0	1921	0	0	1878	0	0	1921	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

Future Total Phase 2 2031
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↑			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	1	10	0	0	0	2	32	0	0	122	0
Future Volume (vph)	0	1	10	0	0	0	2	32	0	0	122	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	10	0	0	0	2	32	0	0	122	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	11	0	34	122								
Volume Left (vph)	0	0	2	0								
Volume Right (vph)	10	0	0	0								
Hadj (s)	-0.55	0.00	0.05	0.00								
Departure Headway (s)	3.7	4.2	4.1	4.0								
Degree Utilization, x	0.01	0.00	0.04	0.13								
Capacity (veh/h)	933	823	863	902								
Control Delay (s)	6.7	7.2	7.2	7.6								
Approach Delay (s)	6.7	0.0	7.2	7.6								
Approach LOS	A	A	A	A								

Intersection Summary

Delay		7.4		
Level of Service		A		
Intersection Capacity Utilization		30.3%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
88: Humber Station Rd & Street EE

Future Total Phase 2 2031
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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	0.950					
Satd. Flow (prot)	1825	0	0	1883	1921	0
Flt Permitted	0.950					
Satd. Flow (perm)	1825	0	0	1883	1921	0
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

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

Future Total Phase 2 2031
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	1	0	0	364	604	0
Future Volume (Veh/h)	1	0	0	364	604	0
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)	1	0	0	364	604	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)				347	322	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	1068	704	654			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1020	690	639			
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	100	100			
cM capacity (veh/h)	238	404	889			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	364	604
Volume Left	1	0	0
Volume Right	0	0	0
cSH	238	889	1700
Volume to Capacity	0.00	0.00	0.36
Queue Length 95th (m)	0.1	0.0	0.0
Control Delay (s)	20.2	0.0	0.0
Lane LOS	C		
Approach Delay (s)	20.2	0.0	0.0
Approach LOS	C		

Intersection Summary

Average Delay		0.0	
Intersection Capacity Utilization		41.8%	ICU Level of Service A
Analysis Period (min)		15	

Lanes and Geometrics
1: The Gore Rd & King St

FTP2 2031 Without Improvements
Morning Peak Hour

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			0.99			0.94		0.92		0.96
Frt	0.948			0.993			0.934			0.962		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1609	0	1681	1760	0	1535	1585	0	1681	1781	0
Flt Permitted	0.458			0.193			0.094			0.521		
Satd. Flow (perm)	709	1609	0	341	1760	0	152	1585	0	850	1781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			3			36				16
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

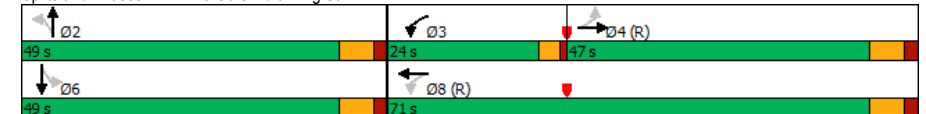
FTP2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	318	375	523	11	140	100	458
Future Volume (vph)	51	318	375	523	11	140	100	458
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)	47.0	47.0	24.0	71.0	49.0	49.0	49.0	49.0
Total Split (%)	39.2%	39.2%	20.0%	59.2%	40.8%	40.8%	40.8%	40.8%
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)	40.9	40.9	66.9	64.3	42.5	42.5	42.5	42.5
Actuated g/C Ratio	0.34	0.34	0.56	0.54	0.35	0.35	0.35	0.35
v/c Ratio	0.21	0.87	0.92	0.58	0.21	0.43	0.33	0.96
Control Delay	31.7	52.8	49.9	21.9	38.9	27.6	32.2	64.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	52.8	49.9	21.9	38.9	27.6	32.2	64.7
LOS	C	D	D	C	D	C	C	E
Approach Delay		50.8		33.2		28.1		60.1
Approach LOS		D		C		C		E

Intersection Summary

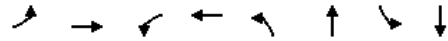
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 44.5
 Intersection Capacity Utilization 119.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service H

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



Queues
1: The Gore Rd & King St

FTP2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	51	489	375	550	11	249	100	615
v/c Ratio	0.21	0.87	0.92	0.58	0.21	0.43	0.33	0.96
Control Delay	31.7	52.8	49.9	21.9	38.9	27.6	32.2	64.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.7	52.8	49.9	21.9	38.9	27.6	32.2	64.7
Queue Length 50th (m)	8.9	107.5	54.3	86.6	1.9	39.1	17.8	143.5
Queue Length 95th (m)	19.7	#169.6	#111.8	121.5	7.7	63.2	33.6	#219.4
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)	244	571	413	953	54	590	304	648
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	0.21	0.86	0.91	0.58	0.20	0.42	0.33	0.95

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

FTP2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	51	318	171	375	523	27	11	140	109	100	458	157
Future Volume (vph)	51	318	171	375	523	27	11	140	109	100	458	157
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	0.96	
Frpb, ped/bikes	0.94	1.00		1.00	1.00		1.00	1.00		1.00	0.92	
Frt	1.00	0.95		1.00	0.99		1.00	0.93		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)	1471	1608		1681	1760		1535	1586		1550	1780	
Flt Permitted	0.46	1.00		0.19	1.00		0.09	1.00		0.52	1.00	
Satd. Flow (perm)	710	1608		342	1760		152	1586		851	1780	
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	318	171	375	523	27	11	140	109	100	458	157
RTOR Reduction (vph)	0	16	0	0	1	0	0	23	0	0	10	0
Lane Group Flow (vph)	51	473	0	375	549	0	11	226	0	100	605	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	15%	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)	40.8	40.8		64.3	64.3		42.5	42.5		42.5	42.5	
Effective Green, g (s)	40.8	40.8		64.3	64.3		42.5	42.5		42.5	42.5	
Actuated g/C Ratio	0.34	0.34		0.54	0.54		0.35	0.35		0.35	0.35	
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)	241	546		400	943		53	561		301	630	
v/s Ratio Prot		0.29		c0.15	0.31			0.14			c0.34	
v/s Ratio Perm	0.07			c0.35			0.07			0.12		
v/c Ratio	0.21	0.87		0.94	0.58		0.21	0.40		0.33	0.96	
Uniform Delay, d1	28.2	37.1		24.3	18.8		27.0	29.2		28.4	37.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.0	16.7		29.3	2.6		1.9	0.5		0.7	25.8	
Delay (s)	30.2	53.8		53.7	21.4		29.0	29.7		29.0	63.8	
Level of Service	C	D		D	C		C	C		C	E	
Approach Delay (s)		51.6			34.5			29.6			58.9	
Approach LOS		D			C			C			E	

Intersection Summary

HCM 2000 Control Delay	44.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	119.3%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FTP2 2031 Without Improvements
Morning Peak Hour

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			0.98			0.95	
Frt		0.947			0.983			0.991			0.963	
Flt Protected		0.995			0.994			0.988			0.990	
Satd. Flow (prot)	0	1616	0	0	1773	0	0	1693	0	0	1680	0
Flt Permitted		0.866			0.770			0.694			0.837	
Satd. Flow (perm)	0	1402	0	0	1370	0	0	1179	0	0	1400	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41			8			4			20	
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

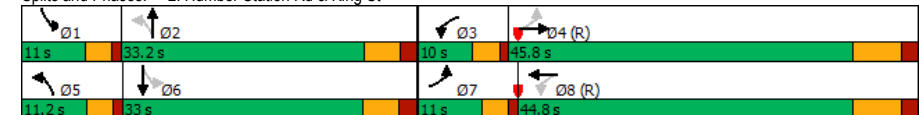
FTP2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	79	448	73	485	67	183	122	324
Future Volume (vph)	79	448	73	485	67	183	122	324
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	45.8	10.0	44.8	11.2	33.2	11.0	33.0
Total Split (%)	11.0%	45.8%	10.0%	44.8%	11.2%	33.2%	11.0%	33.0%
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)		48.4		48.4		38.2		38.0
Actuated g/C Ratio		0.48		0.48		0.38		0.38
v/c Ratio		1.25		0.95		0.59		1.13
Control Delay		148.4		51.2		30.9		108.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		148.4		51.2		30.9		108.5
LOS		F		D		C		F
Approach Delay		148.4		51.2		30.9		108.5
Approach LOS		F		D		C		F

Intersection Summary

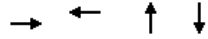
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.25
 Intersection Signal Delay: 99.1
 Intersection Capacity Utilization 117.6%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

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



Queues
2: Humber Station Rd & King St

FTP2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	872	636	268	613
v/c Ratio	1.25	0.95	0.59	1.13
Control Delay	148.4	51.2	30.9	108.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	148.4	51.2	30.9	108.5
Queue Length 50th (m)	~217.0	117.3	41.8	~141.5
Queue Length 95th (m)	#292.3	#195.6	69.7	#209.5
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	699	667	452	544
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	1.25	0.95	0.59	1.13

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

FTP2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	79	448	345	73	485	78	67	183	18	122	324	167
Future Volume (vph)	79	448	345	73	485	78	67	183	18	122	324	167
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			0.99			0.99			0.97	
Flpb, ped/bikes		1.00			1.00			0.99			0.99	
Frt		0.95			0.98			0.99			0.96	
Flt Protected		1.00			0.99			0.99			0.99	
Satd. Flow (prot)		1612			1771			1681			1661	
Flt Permitted		0.87			0.77			0.69			0.84	
Satd. Flow (perm)		1402			1372			1181			1404	
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)	79	448	345	73	485	78	67	183	18	122	324	167
RTOR Reduction (vph)	0	21	0	0	4	0	0	2	0	0	12	0
Lane Group Flow (vph)	0	851	0	0	632	0	0	266	0	0	601	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	16%	2%	72%	7%	6%	3%
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)		48.4			48.4			38.2			38.0	
Effective Green, g (s)		48.4			48.4			38.2			38.0	
Actuated g/C Ratio		0.48			0.48			0.38			0.38	
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)		678			664			451			533	
v/s Ratio Prot												
v/s Ratio Perm		c0.61			0.46			0.22			c0.43	
v/c Ratio		1.25			0.95			0.59			1.13	
Uniform Delay, d1		25.8			24.7			24.6			31.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		126.6			23.6			2.0			78.8	
Delay (s)		152.4			48.2			26.6			109.8	
Level of Service		F			D			C			F	
Approach Delay (s)		152.4			48.2			26.6			109.8	
Approach LOS		F			D			C			F	

Intersection Summary

HCM 2000 Control Delay	99.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	117.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FTP2 2031 Without Improvements
Morning Peak Hour

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	0.958	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	1883	1883	1601	1684	0
Flt Permitted	0.197				0.967	
Satd. Flow (perm)	359	1883	1883	1361	1575	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				19	26	
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

FTP2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗	↖	↗	↖
Traffic Volume (vph)	70	469	778	39	343
Future Volume (vph)	70	469	778	39	343
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)	56.0	56.0	56.0	56.0	34.0
Total Split (%)	62.2%	62.2%	62.2%	62.2%	37.8%
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

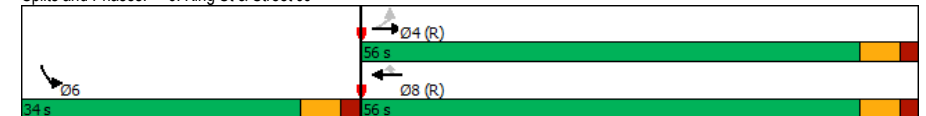
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	50.8	50.8	50.8	50.8	27.2
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.30
v/c Ratio	0.35	0.44	0.73	0.05	0.94
Control Delay	17.2	13.3	20.0	6.0	57.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	13.3	20.0	6.0	57.8
LOS	B	B	C	A	E
Approach Delay		13.8	19.4		57.8
Approach LOS		B	B		E

Intersection Summary

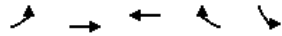
Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 36 (40%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 28.0
 Intersection Capacity Utilization 89.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FTP2 2031 Without Improvements
Morning Peak Hour



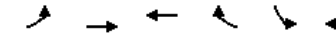
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	70	469	778	39	497
v/c Ratio	0.35	0.44	0.73	0.05	0.94
Control Delay	17.2	13.3	20.0	6.0	57.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	13.3	20.0	6.0	57.8
Queue Length 50th (m)	6.5	46.6	98.9	1.5	81.7
Queue Length 95th (m)	17.4	69.9	146.5	5.9	#142.9
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	202	1062	1062	775	541
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	0.35	0.44	0.73	0.05	0.92

Intersection Summary

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

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

FTP2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	70	469	778	39	343	154
Future Volume (vph)	70	469	778	39	343	154
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	6.0
Lane Util. Factor	1.00	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	1684	
FlT Permitted	0.20	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	359	1883	1883	1361	1684	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	469	778	39	343	154
RTOR Reduction (vph)	0	0	0	8	18	0
Lane Group Flow (vph)	70	469	778	31	479	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)	50.8	50.8	50.8	50.8	27.2	
Effective Green, g (s)	50.8	50.8	50.8	50.8	27.2	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.30	
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)	202	1062	1062	768	508	
v/s Ratio Prot		0.25	c0.41		c0.28	
v/s Ratio Perm	0.20			0.02		
v/c Ratio	0.35	0.44	0.73	0.04	0.94	
Uniform Delay, d1	10.6	11.4	14.6	8.7	30.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	4.7	1.3	4.5	0.1	26.1	
Delay (s)	15.3	12.7	19.0	8.8	56.8	
Level of Service	B	B	B	A	E	
Approach Delay (s)		13.0	18.5		56.8	
Approach LOS		B	B		E	

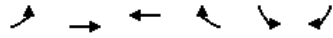
Intersection Summary

HCM 2000 Control Delay	27.2	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	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FTP2 2031 Without Improvements
Morning Peak Hour



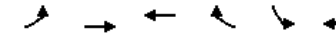
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1601	1629	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1601	1629	0
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

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

FTP2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	812	668	39	0	149
Future Volume (Veh/h)	0	812	668	39	0	149
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	812	668	39	0	149
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.80				0.87	0.80
vC, conflicting volume	757				1580	768
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	573				1217	586
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	60
cM capacity (veh/h)	767				160	375

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	0	812	668	39	149
Volume Left	0	0	0	0	0
Volume Right	0	0	0	39	149
cSH	1700	1700	1700	1700	375
Volume to Capacity	0.00	0.48	0.39	0.02	0.40
Queue Length 95th (m)	0.0	0.0	0.0	0.0	14.7
Control Delay (s)	0.0	0.0	0.0	0.0	20.8
Lane LOS					C
Approach Delay (s)	0.0		0.0		20.8
Approach LOS					C

Intersection Summary

Average Delay			1.9		
Intersection Capacity Utilization			62.7%	ICU Level of Service	B
Analysis Period (min)			15		

Lanes and Geometrics
9: The Gore Rd & Street DDD

FTP2 2031 Without Improvements
Morning Peak Hour

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		0.981			
Flt Protected						
Satd. Flow (prot)	1629	0	1848	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1848	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

FTP2 2031 Without Improvements
Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	20	198	32	0	759
Future Volume (Veh/h)	0	20	198	32	0	759
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	198	32	0	759
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)					265	
pX, platoon unblocked	0.84					
vC, conflicting volume	1073	314			280	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	314			280	
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)	209	665			1228	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	20	230	759			
Volume Left	0	0	0			
Volume Right	20	32	0			
cSH	665	1700	1700			
Volume to Capacity	0.03	0.14	0.45			
Queue Length 95th (m)	0.7	0.0	0.0			
Control Delay (s)	10.6	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	10.6	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			58.4%		ICU Level of Service B	
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FTP2 2031 Without Improvements
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98		0.90	
Frt	0.976		0.980			
Flt Protected	0.960				0.950	
Satd. Flow (prot)	1728	0	1805	0	1730	1883
Flt Permitted	0.960				0.622	
Satd. Flow (perm)	1582	0	1805	0	1022	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	11		18			
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

FTP2 2031 Without Improvements
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↙
Traffic Volume (vph)	113	186	27	646
Future Volume (vph)	113	186	27	646
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

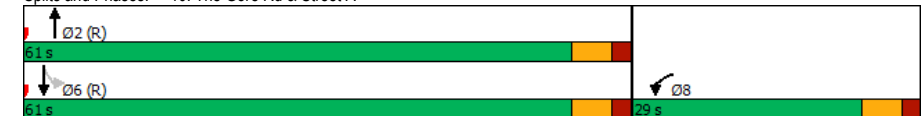
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	12.9	65.1	65.1	65.1
Actuated g/C Ratio	0.14	0.72	0.72	0.72
v/c Ratio	0.53	0.17	0.04	0.47
Control Delay	39.0	4.8	5.1	7.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	39.0	4.8	5.1	7.6
LOS	D	A	A	A
Approach Delay	39.0	4.8		7.5
Approach LOS	D	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: 0.53
 Intersection Signal Delay: 11.1
 Intersection Capacity Utilization 60.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
10: The Gore Rd & Street A

FTP2 2031 Without Improvements
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	137	218	27	646
v/c Ratio	0.53	0.17	0.04	0.47
Control Delay	39.0	4.8	5.1	7.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	39.0	4.8	5.1	7.6
Queue Length 50th (m)	21.5	8.9	1.1	38.6
Queue Length 95th (m)	34.8	23.6	4.8	89.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	449	1309	738	1361
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	0.31	0.17	0.04	0.47

Intersection Summary

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

FTP2 2031 Without Improvements
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↓
Traffic Volume (vph)	113	24	186	32	27	646
Future Volume (vph)	113	24	186	32	27	646
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		0.90	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		1806		1561	1883
Flt Permitted	0.96		1.00		0.62	1.00
Satd. Flow (perm)	1729		1806		1022	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	113	24	186	32	27	646
RTOR Reduction (vph)	9	0	5	0	0	0
Lane Group Flow (vph)	128	0	213	0	27	646
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)	12.9		65.1		65.1	65.1
Effective Green, g (s)	12.9		65.1		65.1	65.1
Actuated g/C Ratio	0.14		0.72		0.72	0.72
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)	247		1306		739	1362
v/s Ratio Prot	c0.07		0.12			c0.34
v/s Ratio Perm					0.03	
v/c Ratio	0.52		0.16		0.04	0.47
Uniform Delay, d1	35.7		3.9		3.5	5.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.8		0.3		0.1	1.2
Delay (s)	37.5		4.2		3.6	6.4
Level of Service	D		A		A	A
Approach Delay (s)	37.5		4.2			6.3
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	60.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
48: Humber Station Rd & Street E

FTP2 2031 Without Improvements
Morning Peak Hour

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		0.879			0.996			0.850				
Flt Protected		0.997			0.954		0.950		0.950			
Satd. Flow (prot)	0	1651	0	0	1790	0	1789	1883	1601	1789	1883	0
Flt Permitted		0.977			0.693		0.585		0.659			
Satd. Flow (perm)	0	1617	0	0	1300	0	1102	1883	1601	1241	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			3				191			
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

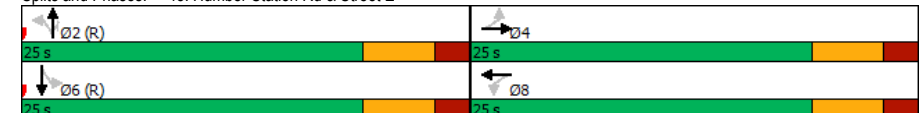
FTP2 2031 Without Improvements
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	3	105	2	19	154	191	1	285
Future Volume (vph)	3	3	105	2	19	154	191	1	285
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2		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	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		9.4		9.4	32.1	32.1	32.1	32.1	32.1
Actuated g/C Ratio		0.19		0.19	0.64	0.64	0.64	0.64	0.64
v/c Ratio		0.17		0.45	0.03	0.13	0.17	0.00	0.24
Control Delay		7.3		22.3	6.2	6.3	1.9	6.0	6.7
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		7.3		22.3	6.2	6.3	1.9	6.0	6.7
LOS		A		C	A	A	A	A	A
Approach Delay		7.3		22.3		3.9			6.7
Approach LOS		A		C		A			A

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: Actuated-Coordinated
 Maximum v/c Ratio: 0.45
 Intersection Signal Delay: 7.6
 Intersection Capacity Utilization 38.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FTP2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	58	110	19	154	191	1	285
v/c Ratio	0.17	0.45	0.03	0.13	0.17	0.00	0.24
Control Delay	7.3	22.3	6.2	6.3	1.9	6.0	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	22.3	6.2	6.3	1.9	6.0	6.7
Queue Length 50th (m)	0.5	8.9	0.7	5.7	0.0	0.0	11.4
Queue Length 95th (m)	6.8	18.4	3.3	15.0	7.4	0.6	26.9
Internal Link Dist (m)	105.8	185.7		130.4			336.1
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	646	495	706	1207	1095	795	1207
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	0.09	0.22	0.03	0.13	0.17	0.00	0.24

Intersection Summary

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

FTP2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	3	52	105	2	3	19	154	191	1	285	0
Future Volume (vph)	3	3	52	105	2	3	19	154	191	1	285	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	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Fr't		0.88			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)		1651			1791		1789	1883	1601	1789	1883	
Flt Permitted		0.98			0.69		0.59	1.00	1.00	0.66	1.00	
Satd. Flow (perm)		1618			1301		1102	1883	1601	1242	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)	3	3	52	105	2	3	19	154	191	1	285	0
RTOR Reduction (vph)	0	43	0	0	3	0	0	0	78	0	0	0
Lane Group Flow (vph)	0	15	0	0	107	0	19	154	113	1	285	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)		8.3			8.3		29.7	29.7	29.7	29.7	29.7	
Effective Green, g (s)		8.3			8.3		29.7	29.7	29.7	29.7	29.7	
Actuated g/C Ratio		0.17			0.17		0.59	0.59	0.59	0.59	0.59	
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)		268			215		654	1118	950	737	1118	
v/s Ratio Prot								0.08			c0.15	
v/s Ratio Perm		0.01			c0.08		0.02		0.07	0.00		
v/c Ratio		0.05			0.50		0.03	0.14	0.12	0.00	0.25	
Uniform Delay, d1		17.5			19.0		4.2	4.5	4.4	4.1	4.9	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			1.8		0.1	0.3	0.3	0.0	0.5	
Delay (s)		17.6			20.8		4.3	4.7	4.7	4.1	5.4	
Level of Service		B			C		A	A	A	A	A	
Approach Delay (s)		17.6			20.8			4.7			5.4	
Approach LOS		B			C			A			A	

Intersection Summary

HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

58: Humber Station Rd & Street Y

FTP2 2031 Without Improvements

Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	0.99		0.92		0.92	0.94	0.98		0.96		1.00
Frt		0.987				0.850		0.957				
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1837	0	1789	1883	1601	1789	1760	0	1789	1883	0
Flt Permitted	0.717			0.473			0.498			0.525		
Satd. Flow (perm)	1262	1837	0	818	1883	1470	883	1760	0	951	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				73			44			
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

FTP2 2031 Without Improvements

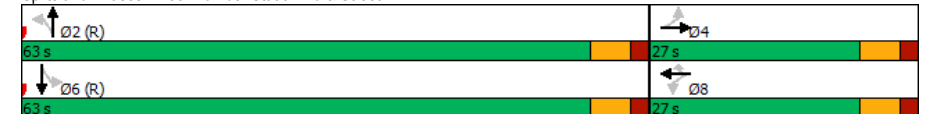
Morning Peak Hour

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group									
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	7	189	81	61	73	6	272	55	419
Future Volume (vph)	7	189	81	61	73	6	272	55	419
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)	27.0	27.0	27.0	27.0	27.0	63.0	63.0	63.0	63.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
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	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)	15.1	15.1	15.1	15.1	15.1	62.9	62.9	62.9	62.9
Actuated g/C Ratio	0.17	0.17	0.17	0.17	0.17	0.70	0.70	0.70	0.70
v/c Ratio	0.03	0.66	0.59	0.19	0.24	0.01	0.31	0.08	0.32
Control Delay	28.9	44.1	51.3	31.9	9.4	5.5	5.9	5.7	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	44.1	51.3	31.9	9.4	5.5	5.9	5.7	6.6
LOS	C	D	D	C	A	A	A	A	A
Approach Delay		43.6		31.6			5.9		6.5
Approach LOS		D		C			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: 0.66
 Intersection Signal Delay: 16.7
 Intersection Capacity Utilization 65.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
58: Humber Station Rd & Street Y

FTP2 2031 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	207	81	61	73	6	381	55	420
v/c Ratio	0.03	0.66	0.59	0.19	0.24	0.01	0.31	0.08	0.32
Control Delay	28.9	44.1	51.3	31.9	9.4	5.5	5.9	5.7	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	44.1	51.3	31.9	9.4	5.5	5.9	5.7	6.6
Queue Length 50th (m)	1.1	34.4	13.6	9.5	0.0	0.3	19.3	2.7	25.0
Queue Length 95th (m)	4.6	53.2	27.3	19.1	10.7	1.7	39.4	8.0	47.7
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)	294	432	190	439	398	617	1243	664	1316
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	0.02	0.48	0.43	0.14	0.18	0.01	0.31	0.08	0.32

Intersection Summary

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

FTP2 2031 Without Improvements
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	7	189	18	81	61	73	6	272	109	55	419	1
Future Volume (vph)	7	189	18	81	61	73	6	272	109	55	419	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		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	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	0.93	1.00		0.92	1.00	1.00	0.94	1.00		0.96	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1672	1837		1646	1883	1470	1678	1761		1717	1882	
Fit Permitted	0.72	1.00		0.47	1.00	1.00	0.50	1.00		0.52	1.00	
Satd. Flow (perm)	1263	1837		819	1883	1470	880	1761		949	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)	7	189	18	81	61	73	6	272	109	55	419	1
RTOR Reduction (vph)	0	4	0	0	0	61	0	13	0	0	0	0
Lane Group Flow (vph)	7	203	0	81	61	12	6	368	0	55	420	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)	15.1	15.1		15.1	15.1	15.1	62.9	62.9		62.9	62.9	
Effective Green, g (s)	15.1	15.1		15.1	15.1	15.1	62.9	62.9		62.9	62.9	
Actuated g/C Ratio	0.17	0.17		0.17	0.17	0.17	0.70	0.70		0.70	0.70	
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)	211	308		137	315	246	615	1230		663	1315	
v/s Ratio Prot		c0.11			0.03			0.21			c0.22	
v/s Ratio Perm	0.01			0.10		0.01	0.01			0.06		
v/c Ratio	0.03	0.66		0.59	0.19	0.05	0.01	0.30		0.08	0.32	
Uniform Delay, d1	31.3	35.0		34.6	32.2	31.4	4.1	5.2		4.3	5.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	5.0		6.7	0.3	0.1	0.0	0.6		0.2	0.6	
Delay (s)	31.4	40.1		41.3	32.5	31.5	4.1	5.8		4.6	5.9	
Level of Service	C	D		D	C	C	A	A		A	A	
Approach Delay (s)		39.8			35.5			5.8			5.7	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
64: Street JJ & Street Y

FTP2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.996			0.984			0.952				
Flt Protected					0.964						0.996	
Satd. Flow (prot)	0	1876	0	0	1787	0	0	1793	0	0	1876	0
Flt Permitted					0.964						0.996	
Satd. Flow (perm)	0	1876	0	0	1787	0	0	1793	0	0	1876	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

FTP2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	34	1	49	9	8	0	69	38	25	316	0
Future Volume (vph)	0	34	1	49	9	8	0	69	38	25	316	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	34	1	49	9	8	0	69	38	25	316	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	35	66	107	341								
Volume Left (vph)	0	49	0	25								
Volume Right (vph)	1	8	38	0								
Hadj (s)	0.02	0.11	-0.18	0.05								
Departure Headway (s)	5.0	5.1	4.4	4.3								
Degree Utilization, x	0.05	0.09	0.13	0.41								
Capacity (veh/h)	645	644	788	806								
Control Delay (s)	8.3	8.6	8.0	10.3								
Approach Delay (s)	8.3	8.6	8.0	10.3								
Approach LOS	A	A	A	B								
Intersection Summary												
Delay				9.5								
Level of Service				A								
Intersection Capacity Utilization				41.7%	ICU Level of Service							A
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

FTP2 2031 Without Improvements
Morning Peak Hour

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		0.986			0.979			0.995				
Flt Protected					0.988			0.996			0.991	
Satd. Flow (prot)	0	1857	0	0	1822	0	0	1867	0	0	1866	0
Flt Permitted					0.988			0.996			0.991	
Satd. Flow (perm)	0	1857	0	0	1822	0	0	1867	0	0	1866	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

FTP2 2031 Without Improvements
Morning Peak Hour

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	88	10	11	27	7	2	24	1	21	90	0
Future Volume (vph)	0	88	10	11	27	7	2	24	1	21	90	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	88	10	11	27	7	2	24	1	21	90	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	98	45	27	111								
Volume Left (vph)	0	11	2	21								
Volume Right (vph)	10	7	1	0								
Hadj (s)	-0.03	-0.01	0.03	0.07								
Departure Headway (s)	4.2	4.3	4.4	4.3								
Degree Utilization, x	0.12	0.05	0.03	0.13								
Capacity (veh/h)	819	801	784	805								
Control Delay (s)	7.8	7.6	7.5	8.0								
Approach Delay (s)	7.8	7.6	7.5	8.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.8
Level of Service	A
Intersection Capacity Utilization	31.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FTP2 2031 Without Improvements
Morning Peak Hour

	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	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		0.932						0.988				
Flt Protected					0.950							
Satd. Flow (prot)	0	1755	0	0	1789	0	0	1861	0	0	1883	0
Flt Permitted					0.950							
Satd. Flow (perm)	0	1755	0	0	1789	0	0	1861	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

FTP2 2031 Without Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	1	1	43	0	0	0	89	9	0	407	0
Future Volume (Veh/h)	0	1	1	43	0	0	0	89	9	0	407	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	1	1	43	0	0	0	89	9	0	407	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)								262				
pX, platoon unblocked												
vC, conflicting volume	550	605	507	602	600	144	457			148		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	550	605	507	602	600	144	457			148		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	88	100	100	100			100		
cM capacity (veh/h)	399	377	518	351	380	865	1057			1372		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	2	43	98	407								
Volume Left	0	43	0	0								
Volume Right	1	0	9	0								
cSH	437	351	1057	1372								
Volume to Capacity	0.00	0.12	0.00	0.00								
Queue Length 95th (m)	0.1	3.3	0.0	0.0								
Control Delay (s)	13.3	16.7	0.0	0.0								
Lane LOS	B	C										
Approach Delay (s)	13.3	16.7	0.0	0.0								
Approach LOS	B	C										
Intersection Summary												
Average Delay				1.4								
Intersection Capacity Utilization			39.5%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FTP2 2031 Without Improvements
Morning Peak Hour

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	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		0.877										
Flt Protected												0.997
Satd. Flow (prot)	0	1652	0	0	1883	0	0	1878	0	0	1883	0
Flt Permitted												0.997
Satd. Flow (perm)	0	1652	0	0	1883	0	0	1878	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

FTP2 2031 Without Improvements
Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	1	10	0	0	0	2	32	0	0	122	0
Future Volume (Veh/h)	0	1	10	0	0	0	2	32	0	0	122	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	1	10	0	0	0	2	32	0	0	122	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)												
pX, platoon unblocked												
vC, conflicting volume	258	258	222	268	258	132	172				82	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	258	258	222	268	258	132	172				82	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	99	100	100	100	100				100	
cM capacity (veh/h)	595	591	749	577	591	840	1345				1450	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	11	0	34	122								
Volume Left	0	0	2	0								
Volume Right	10	0	0	0								
cSH	731	1700	1345	1450								
Volume to Capacity	0.02	0.00	0.00	0.00								
Queue Length 95th (m)	0.4	0.0	0.0	0.0								
Control Delay (s)	10.0	0.0	0.5	0.0								
Lane LOS	A	A	A									
Approach Delay (s)	10.0	0.0	0.5	0.0								
Approach LOS	A	A										
Intersection Summary												
Average Delay				0.8								
Intersection Capacity Utilization			30.3%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FTP2013 Without Improvements
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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	0.950					
Satd. Flow (prot)	1789	0	0	1883	1883	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1883	0
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

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

FTP2013 Without Improvements
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	1	0	0	364	604	0
Future Volume (Veh/h)	1	0	0	364	604	0
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)	1	0	0	364	604	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)				347	322	
pX, platoon unblocked	0.98	0.98	0.98			
vC, conflicting volume	1068	704	654			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1061	690	640			
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	100	100			
cM capacity (veh/h)	223	401	889			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	1	364	604			
Volume Left	1	0	0			
Volume Right	0	0	0			
cSH	223	889	1700			
Volume to Capacity	0.00	0.00	0.36			
Queue Length 95th (m)	0.1	0.0	0.0			
Control Delay (s)	21.2	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	21.2	0.0	0.0			
Approach LOS	C					

Intersection Summary

Average Delay		0.0		
Intersection Capacity Utilization		41.8%	ICU Level of Service	A
Analysis Period (min)		15		

Lanes and Geometrics
1: The Gore Rd & King St

Future Total Phase 2 2031
Afternoon Peak Hour

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	0.96		0.86		0.86	0.91		0.86		0.86		0.86
Frt			0.850		0.850			0.850				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	1830	1555	1713	1812	1617	1765	1902	1601	1765	1865	1541
Flt Permitted	0.257			0.213			0.600			0.119		
Satd. Flow (perm)	450	1830	1334	384	1812	1386	1015	1902	1373	221	1865	1321
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			105			69			134			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

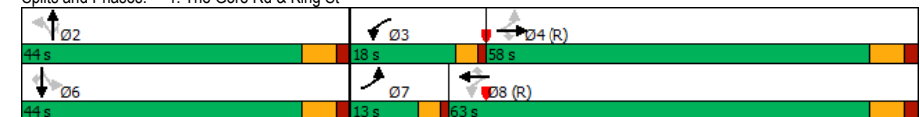
Future Total Phase 2 2031
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	191	529	20	240	544	101	57	597	250	38	191	78
Future Volume (vph)	191	529	20	240	544	101	57	597	250	38	191	78
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)	13.0	58.0	58.0	18.0	63.0	63.0	44.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	10.8%	48.3%	48.3%	15.0%	52.5%	52.5%	36.7%	36.7%	36.7%	36.7%	36.7%	36.7%
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)	58.9	46.6	46.6	65.1	49.8	49.8	43.2	43.2	43.2	43.2	43.2	43.2
Actuated g/C Ratio	0.49	0.39	0.39	0.54	0.42	0.42	0.36	0.36	0.36	0.36	0.36	0.36
v/c Ratio	0.59	0.75	0.03	0.68	0.72	0.16	0.16	0.87	0.43	0.48	0.28	0.14
Control Delay	21.9	39.3	0.1	24.2	35.6	8.6	28.5	51.2	16.0	54.8	29.4	3.1
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	21.9	39.3	0.1	24.2	35.6	8.6	28.5	51.2	16.0	54.8	29.4	3.1
LOS	C	D	A	C	D	A	C	D	B	D	C	A
Approach Delay		33.8			29.4			40.1				25.9
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: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 33.6 Intersection LOS: C
 Intersection Capacity Utilization 102.8% 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

Future Total Phase 2 2031
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	191	529	20	240	544	101	57	597	250	38	191	78
v/c Ratio	0.59	0.75	0.03	0.68	0.72	0.16	0.16	0.87	0.43	0.48	0.28	0.14
Control Delay	21.9	39.3	0.1	24.2	35.6	8.6	28.5	51.2	16.0	54.8	29.4	3.1
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	21.9	39.3	0.1	24.2	35.6	8.6	28.5	51.2	16.0	54.8	29.4	3.1
Queue Length 50th (m)	23.8	117.3	0.0	31.0	117.2	4.9	9.0	130.0	19.1	6.9	31.8	0.0
Queue Length 95th (m)	31.9	144.1	0.0	40.1	139.0	14.4	21.2	#220.6	46.8	#25.4	55.8	6.4
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)	326	783	631	367	851	687	365	684	580	79	671	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.68	0.03	0.65	0.64	0.15	0.16	0.87	0.43	0.48	0.28	0.14

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

Future Total Phase 2 2031
Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	191	529	20	240	544	101	57	597	250	38	191	78
Future Volume (vph)	191	529	20	240	544	101	57	597	250	38	191	78
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	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	0.99	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1718	1830	1334	1713	1812	1386	1605	1902	1373	1765	1865	1321
Flt Permitted	0.26	1.00	1.00	0.21	1.00	1.00	0.60	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	465	1830	1334	384	1812	1386	1014	1902	1373	221	1865	1321
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)	191	529	20	240	544	101	57	597	250	38	191	78
RTOR Reduction (vph)	0	0	12	0	0	40	0	0	86	0	0	50
Lane Group Flow (vph)	191	529	8	240	544	61	57	597	164	38	191	28
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	5%	5%	3%	6%	1%	0%	1%	2%	0%	3%	6%
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)	56.4	46.6	46.6	62.8	49.8	49.8	43.2	43.2	43.2	43.2	43.2	43.2
Effective Green, g (s)	56.4	46.6	46.6	62.8	49.8	49.8	43.2	43.2	43.2	43.2	43.2	43.2
Actuated g/C Ratio	0.47	0.39	0.39	0.52	0.41	0.41	0.36	0.36	0.36	0.36	0.36	0.36
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)	320	710	518	344	751	575	365	684	494	79	671	475
v/s Ratio Prot	0.05	0.29		c0.08	c0.30			c0.31				0.10
v/s Ratio Perm	0.23		0.01	0.29		0.04	0.06		0.12	0.17		0.02
v/c Ratio	0.60	0.75	0.01	0.70	0.72	0.11	0.16	0.87	0.33	0.48	0.28	0.06
Uniform Delay, d1	21.3	31.6	22.6	20.1	29.4	21.5	26.0	35.8	27.9	29.7	27.4	25.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	7.0	0.1	6.1	6.0	0.4	0.2	11.8	0.4	4.6	0.2	0.1
Delay (s)	24.2	38.6	22.6	26.2	35.4	21.8	26.2	47.7	28.3	34.3	27.6	25.2
Level of Service	C	D	C	C	D	C	C	D	C	C	C	C
Approach Delay (s)	34.4			31.3			41.0			27.8		
Approach LOS	C			C			D			C		

Intersection Summary

HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	102.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

2: Humber Station Rd & King St

Future Total Phase 2 2031

Afternoon Peak Hour

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			0.86	0.97		0.86	0.96	0.98		0.97	0.95	
Frt			0.850			0.850		0.980			0.946	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	1865	1555	1379	1812	1526	1697	1795	0	1713	1691	0
Flt Permitted	0.170			0.303			0.196			0.167		
Satd. Flow (perm)	307	1865	1334	425	1812	1309	335	1795	0	291	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			138			175		7			22	
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

Future Total Phase 2 2031

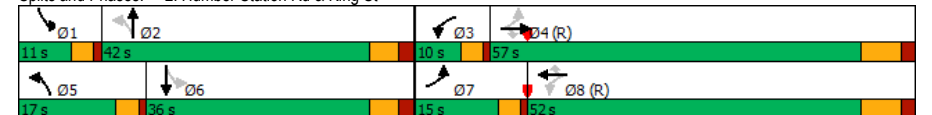
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	→	↗	↖	→	↗	↖	→	↗	↖
Traffic Volume (vph)	153	560	178	18	566	167	236	445	66	237
Future Volume (vph)	153	560	178	18	566	167	236	445	66	237
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	30.2	11.0	30.2
Total Split (s)	15.0	57.0	57.0	10.0	52.0	52.0	17.0	42.0	11.0	36.0
Total Split (%)	12.5%	47.5%	47.5%	8.3%	43.3%	43.3%	14.2%	35.0%	9.2%	30.0%
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	2.2	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	6.2	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	None	None	None
Act Effct Green (s)	63.7	56.3	56.3	55.5	46.2	46.2	48.3	37.1	37.5	28.4
Actuated g/C Ratio	0.53	0.47	0.47	0.46	0.38	0.38	0.40	0.31	0.31	0.24
v/c Ratio	0.55	0.64	0.25	0.07	0.81	0.27	0.81	0.92	0.38	0.89
Control Delay	22.6	29.9	7.1	15.0	44.5	4.5	48.2	62.6	28.9	65.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	29.9	7.1	15.0	44.5	4.5	48.2	62.6	28.9	65.1
LOS	C	C	A	B	D	A	D	E	C	E
Approach Delay		24.1			34.9			58.0		59.6
Approach LOS		C			C			E		E

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: 0.92
 Intersection Signal Delay: 64.4
 Intersection Capacity Utilization 91.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service F

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



Queues
2: Humber Station Rd & King St
Future Total Phase 2 2031
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	153	560	178	18	566	167	236	513	66	369
v/c Ratio	0.55	0.64	0.25	0.07	0.81	0.27	0.81	0.92	0.38	0.89
Control Delay	22.6	29.9	7.1	15.0	44.5	4.5	48.2	62.6	28.9	65.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	29.9	7.1	15.0	44.5	4.5	48.2	62.6	28.9	65.1
Queue Length 50th (m)	19.1	96.9	5.0	2.1	126.6	0.0	38.7	121.5	9.7	81.6
Queue Length 95th (m)	30.9	157.1	20.7	5.8	#186.1	13.0	#73.2	#190.5	19.2	#133.5
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)	291	874	699	244	706	617	290	560	176	438
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	0.53	0.64	0.25	0.07	0.80	0.27	0.81	0.92	0.38	0.84

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
Future Total Phase 2 2031
Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	560	178	18	566	167	236	445	68	66	237	132
Future Volume (vph)	153	560	178	18	566	167	236	445	68	66	237	132
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	6.2		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	0.86	1.00	1.00	0.86	1.00	0.98		1.00	0.95	
Flpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99	1.00	0.98		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	0.95	
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)	1713	1865	1334	1364	1812	1309	1686	1795		1706	1692	
Flt Permitted	0.17	1.00	1.00	0.30	1.00	1.00	0.20	1.00		0.17	1.00	
Satd. Flow (perm)	307	1865	1334	435	1812	1309	347	1795		299	1692	
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)	153	560	178	18	566	167	236	445	68	66	237	132
RTOR Reduction (vph)	0	0	77	0	0	104	0	5	0	0	17	0
Lane Group Flow (vph)	153	560	101	18	566	63	236	508	0	66	352	0
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	3%	3%	5%	28%	6%	7%	4%	2%	9%	3%	2%	2%
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)	59.5	53.1	53.1	47.8	45.4	45.4	46.9	37.1		35.0	29.2	
Effective Green, g (s)	59.5	53.1	53.1	47.8	45.4	45.4	46.9	37.1		35.0	29.2	
Actuated g/C Ratio	0.50	0.44	0.44	0.40	0.38	0.38	0.39	0.31		0.29	0.24	
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2		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)	270	825	590	191	685	495	288	554		155	411	
v/s Ratio Prot	c0.05	0.30		0.00	c0.31		c0.09	c0.28		0.02	0.21	
v/s Ratio Perm	0.23		0.08	0.04		0.05	0.23			0.10		
v/c Ratio	0.57	0.68	0.17	0.09	0.83	0.13	0.82	0.92		0.43	0.86	
Uniform Delay, d1	21.6	26.7	20.2	23.0	33.7	24.4	28.4	40.0		32.9	43.4	
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	2.7	4.5	0.6	0.2	11.0	0.5	16.4	20.0		1.9	16.0	
Delay (s)	24.3	31.1	20.8	23.2	44.7	24.9	44.8	60.0		34.8	59.4	
Level of Service	C	C	C	C	D	C	D	E		C	E	
Approach Delay (s)		27.9			39.8			55.2			55.7	
Approach LOS		C			D			E			E	
Intersection Summary												
HCM 2000 Control Delay			42.6		HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			120.0		Sum of lost time (s)			21.6				
Intersection Capacity Utilization			91.3%		ICU Level of Service			F				
Analysis Period (min)			15									
c Critical Lane Group												

Lanes and Geometrics
6: King St & Street JJ

Future Total Phase 2 2031
Afternoon Peak Hour

	↖	→	←	↗	↘	↙
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	1
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	0.90	0.88
Frt				0.850		0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1765	1921	1921	1633	1825	1633
Flt Permitted	0.147				0.950	
Satd. Flow (perm)	273	1921	1921	1365	1635	1434
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				44		96
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

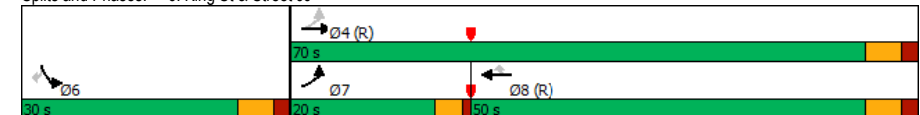
Future Total Phase 2 2031
Afternoon Peak Hour

	↖	→	←	↗	↘	↙
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	207	617	798	131	231	96
Future Volume (vph)	207	617	798	131	231	96
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Detector Phase	7	4	8	8	6	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0	30.0
Total Split (s)	20.0	70.0	50.0	50.0	30.0	30.0
Total Split (%)	20.0%	70.0%	50.0%	50.0%	30.0%	30.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	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
Total Lost Time (s)	4.0	6.0	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	None
Act Effct Green (s)	71.4	69.4	54.0	54.0	18.6	18.6
Actuated g/C Ratio	0.71	0.69	0.54	0.54	0.19	0.19
v/c Ratio	0.57	0.46	0.77	0.17	0.68	0.28
Control Delay	13.2	9.1	27.1	10.5	47.8	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	9.1	27.1	10.5	47.8	8.7
LOS	B	A	C	B	D	A
Approach Delay		10.1	24.7		36.3	
Approach LOS		B	C		D	

Intersection Summary

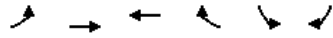
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 20.8
 Intersection Capacity Utilization 85.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

Future Total Phase 2 2031
Afternoon Peak Hour



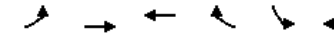
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	207	617	798	131	231	96
v/c Ratio	0.57	0.46	0.77	0.17	0.68	0.28
Control Delay	13.2	9.1	27.1	10.5	47.8	8.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	9.1	27.1	10.5	47.8	8.7
Queue Length 50th (m)	11.3	47.7	117.6	8.0	44.2	0.0
Queue Length 95th (m)	28.9	85.7	#230.3	22.4	64.8	12.7
Internal Link Dist (m)		86.9	276.5		238.0	
Turn Bay Length (m)	50.0			25.0		
Base Capacity (vph)	433	1333	1038	757	438	417
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.46	0.77	0.17	0.53	0.23

Intersection Summary

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

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

Future Total Phase 2 2031
Afternoon Peak Hour



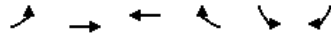
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	207	617	798	131	231	96
Future Volume (vph)	207	617	798	131	231	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)	4.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.84	1.00	0.88
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1765	1921	1921	1365	1825	1434
Flt Permitted	0.15	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	272	1921	1921	1365	1825	1434
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	207	617	798	131	231	96
RTOR Reduction (vph)	0	0	0	20	0	78
Lane Group Flow (vph)	207	617	798	111	231	18
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	7	4	8		6	
Permitted Phases	4			8		6
Actuated Green, G (s)	69.4	69.4	54.0	54.0	18.6	18.6
Effective Green, g (s)	69.4	69.4	54.0	54.0	18.6	18.6
Actuated g/C Ratio	0.69	0.69	0.54	0.54	0.19	0.19
Clearance Time (s)	4.0	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
Lane Grp Cap (vph)	358	1333	1037	737	339	266
v/s Ratio Prot	c0.07	0.32	c0.42		c0.13	
v/s Ratio Perm	0.33			0.08		0.01
v/c Ratio	0.58	0.46	0.77	0.15	0.68	0.07
Uniform Delay, d1	13.9	6.9	18.1	11.5	37.9	33.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.3	1.2	5.5	0.4	5.6	0.1
Delay (s)	16.2	8.1	23.6	11.9	43.5	33.7
Level of Service	B	A	C	B	D	C
Approach Delay (s)		10.1	22.0		40.6	
Approach LOS		B	C		D	

Intersection Summary

HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

Future Total Phase 2 2031
Afternoon Peak Hour



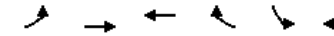
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1858	1921	1921	1633	1662	0
Flt Permitted						
Satd. Flow (perm)	1858	1921	1921	1633	1662	0
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

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

Future Total Phase 2 2031
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	848	835	131	0	95
Future Volume (Veh/h)	0	848	835	131	0	95
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	848	835	131	0	95
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.68				0.76	0.68
vC, conflicting volume	1016				1783	935
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	785				1383	665
tC, single (s)	4.1				6.4	6.2
iC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	67
cM capacity (veh/h)	546				111	288
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	848	835	131	95	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	131	95	
cSH	1700	1700	1700	1700	288	
Volume to Capacity	0.00	0.50	0.49	0.08	0.33	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	11.0	
Control Delay (s)	0.0	0.0	0.0	0.0	23.5	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		23.5	
Approach LOS					C	
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			64.0%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

Future Total Phase 2 2031
Afternoon Peak Hour

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		0.981			
Flt Protected						
Satd. Flow (prot)	1662	0	1885	0	0	1921
Flt Permitted						
Satd. Flow (perm)	1662	0	1885	0	0	1921
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

Future Total Phase 2 2031
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	12	808	129	0	323
Future Volume (Veh/h)	0	12	808	129	0	323
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	808	129	0	323
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	0.85	0.85			0.85	
vC, conflicting volume	1296	972			987	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1259	879			896	
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	96			100	
cM capacity (veh/h)	148	272			623	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	12	937	323			
Volume Left	0	0	0			
Volume Right	12	129	0			
cSH	272	1700	1700			
Volume to Capacity	0.04	0.55	0.19			
Queue Length 95th (m)	1.1	0.0	0.0			
Control Delay (s)	18.8	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	18.8	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			69.3%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Total Phase 2 2031
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98			
Frt	0.964		0.979			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1730	0	1836	0	1765	1921
Flt Permitted	0.965				0.279	
Satd. Flow (perm)	1600	0	1836	0	518	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	19		19			
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

Future Total Phase 2 2031
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	72	691	46	250
Future Volume (vph)	72	691	46	250
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)	13.4	68.1	68.1	68.1
Actuated g/C Ratio	0.15	0.76	0.76	0.76
v/c Ratio	0.36	0.59	0.12	0.17
Control Delay	28.8	6.7	6.9	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.8	6.7	6.9	5.5
LOS	C	A	A	A
Approach Delay	28.8	6.7		5.7
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: 0.59
 Intersection Signal Delay: 8.2
 Intersection Capacity Utilization 70.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A











Future Total Phase 2 2031
Afternoon Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	820	46	250
v/c Ratio	0.36	0.59	0.12	0.17
Control Delay	28.8	6.7	6.9	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	28.8	6.7	6.9	5.5
Queue Length 50th (m)	13.5	48.9	1.7	9.8
Queue Length 95th (m)	24.4	51.6	8.1	28.4
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	456	1394	392	1454
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	0.21	0.59	0.12	0.17

Intersection Summary

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

Future Total Phase 2 2031
Afternoon Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	26	691	129	46	250
Future Volume (vph)	72	26	691	129	46	250
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		0.98		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.98	1.00
Frt	0.96		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1730		1836		1722	1921
Flt Permitted	0.96		1.00		0.28	1.00
Satd. Flow (perm)	1730		1836		505	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	26	691	129	46	250
RTOR Reduction (vph)	16	0	5	0	0	0
Lane Group Flow (vph)	82	0	815	0	46	250
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	12.3		65.7		65.7	65.7
Effective Green, g (s)	12.3		65.7		65.7	65.7
Actuated g/C Ratio	0.14		0.73		0.73	0.73
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)	236		1340		368	1402
v/s Ratio Prot	c0.05		c0.44			0.13
v/s Ratio Perm					0.09	
v/c Ratio	0.35		0.61		0.12	0.18
Uniform Delay, d1	35.2		5.9		3.6	3.8
Progression Factor	1.00		0.61		1.00	1.00
Incremental Delay, d2	0.9		2.0		0.7	0.3
Delay (s)	36.1		5.6		4.3	4.0
Level of Service	D		A		A	A
Approach Delay (s)	36.1		5.6			4.1
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	7.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

48: Humber Station Rd & Street E

Future Total Phase 2 2031

Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↖
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			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		0.94			0.94		0.95		0.92	0.97		1.00
Frt		0.916			0.998				0.850		0.998	
Flt Protected		0.995			0.953		0.950		0.950			
Satd. Flow (prot)	0	1658	0	0	1825	0	1825	1921	1633	1825	1915	0
Flt Permitted		0.972			0.690		0.654		0.405			
Satd. Flow (perm)	0	1611	0	0	1243	0	1190	1921	1495	753	1915	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			2				142			1
Link Speed (k/h)		50			50				50			50
Link Distance (m)		138.8			126.7				153.0			361.4
Travel Time (s)		10.0			9.1				11.0			26.0

Intersection Summary

Area Type: Other

Timings

48: Humber Station Rd & Street E

Future Total Phase 2 2031

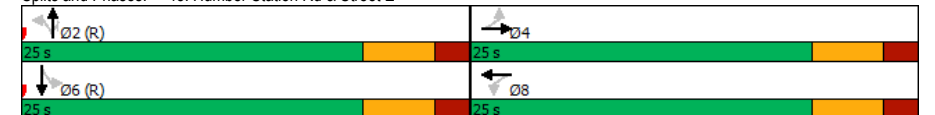
Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↖
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT			
Lane Configurations		↕		↕	↕	↕	↕	↕	↕			
Traffic Volume (vph)	6	15	126	1	62	436	142	3	160			
Future Volume (vph)	6	15	126	1	62	436	142	3	160			
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA			
Protected Phases		4		8		2		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		0.09		0.27	0.14	0.60	0.22	0.01	0.22			
Control Delay		6.1		12.5	11.2	16.6	3.4	10.0	11.5			
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0			
Total Delay		6.1		12.5	11.2	16.6	3.4	10.0	11.5			
LOS		A		B	B	B	A	A	B			
Approach Delay		6.1		12.5		13.2			11.4			
Approach LOS		A		B		B			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: 0.60
 Intersection Signal Delay: 12.4 Intersection LOS: B
 Intersection Capacity Utilization 57.9% ICU Level of Service B
 Analysis Period (min) 15

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



Queues
48: Humber Station Rd & Street E

Future Total Phase 2 2031
Afternoon Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	129	62	436	142	3	162
v/c Ratio	0.09	0.27	0.14	0.60	0.22	0.01	0.22
Control Delay	6.1	12.5	11.2	16.6	3.4	10.0	11.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.1	12.5	11.2	16.6	3.4	10.0	11.5
Queue Length 50th (m)	1.2	7.8	3.6	31.1	0.0	0.2	9.7
Queue Length 95th (m)	6.4	17.8	9.8	54.5	8.2	1.4	19.9
Internal Link Dist (m)	114.8	102.7		129.0			337.4
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	633	473	452	729	656	286	728
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	0.09	0.27	0.14	0.60	0.22	0.01	0.22

Intersection Summary

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

Future Total Phase 2 2031
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	6	15	35	126	1	2	62	436	142	3	160	2
Future Volume (vph)	6	15	35	126	1	2	62	436	142	3	160	2
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	
Frbp, ped/bikes		0.95			1.00		1.00	1.00	0.92	1.00	1.00	
Flpb, ped/bikes		0.99			0.94		0.95	1.00	1.00	0.97	1.00	
Frt		0.92			1.00		1.00	1.00	0.85	1.00	1.00	
Fit Protected		0.99			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1648			1717		1729	1921	1495	1766	1916	
Fit Permitted		0.97			0.69		0.65	1.00	1.00	0.40	1.00	
Satd. Flow (perm)		1610			1242		1191	1921	1495	752	1916	
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	15	35	126	1	2	62	436	142	3	160	2
RTOR Reduction (vph)	0	22	0	0	1	0	0	0	88	0	1	0
Lane Group Flow (vph)	0	34	0	0	128	0	62	436	54	3	161	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)		611			471		452	729	568	285	728	
v/s Ratio Prot							c0.23				0.08	
v/s Ratio Perm		0.02			c0.10		0.05		0.04	0.00		
v/c Ratio		0.06			0.27		0.14	0.60	0.09	0.01	0.22	
Uniform Delay, d1		9.8			10.7		10.1	12.4	10.0	9.6	10.5	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2			1.4		0.6	3.6	0.3	0.1	0.7	
Delay (s)		10.0			12.1		10.8	16.0	10.3	9.7	11.2	
Level of Service		A			B		B	B	B	A	B	
Approach Delay (s)		10.0			12.1		14.3				11.2	
Approach LOS		A			B		B				B	

Intersection Summary

HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

58: Humber Station Rd & Street Y

Future Total Phase 2 2031

Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	0.99		0.90		0.92	0.92	0.98		0.98		1.00
Frt		0.990				0.850		0.959			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1884	0	1825	1921	1633	1825	1801	0	1825	1910	0
Flt Permitted	0.477			0.674			0.607			0.310		
Satd. Flow (perm)	871	1884	0	1167	1921	1500	1068	1801	0	587	1910	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				51			44			2
Link Speed (k/h)		50				50			50			50
Link Distance (m)		81.8				813.2			194.3			153.0
Travel Time (s)		5.9				58.6			14.0			11.0

Intersection Summary

Area Type: Other

Timings

58: Humber Station Rd & Street Y

Future Total Phase 2 2031

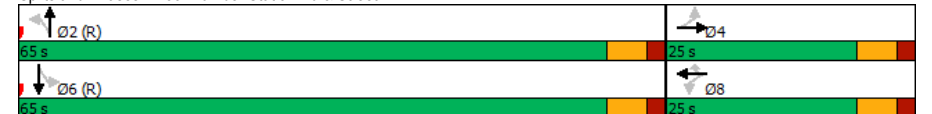
Afternoon Peak Hour

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group									
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	2	120	79	202	51	24	535	98	239
Future Volume (vph)	2	120	79	202	51	24	535	98	239
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)	14.5	14.5	14.5	14.5	14.5	63.5	63.5	63.5	63.5
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.71	0.71	0.71	0.71
v/c Ratio	0.01	0.42	0.42	0.66	0.18	0.03	0.57	0.24	0.18
Control Delay	29.5	36.2	39.9	45.2	10.6	5.1	8.9	7.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	36.2	39.9	45.2	10.6	5.1	8.9	7.2	5.3
LOS	C	D	D	D	B	A	A	A	A
Approach Delay		36.1		38.6			8.8		5.9
Approach LOS		D		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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 16.8
 Intersection Capacity Utilization 86.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

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



Queues
58: Humber Station Rd & Street Y

Future Total Phase 2 2031
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	129	79	202	51	24	737	98	244
v/c Ratio	0.01	0.42	0.42	0.66	0.18	0.03	0.57	0.24	0.18
Control Delay	29.5	36.2	39.9	45.2	10.6	5.1	8.9	7.2	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	36.2	39.9	45.2	10.6	5.1	8.9	7.2	5.3
Queue Length 50th (m)	0.3	20.4	12.9	34.3	0.0	1.1	52.3	5.3	12.6
Queue Length 95th (m)	2.2	35.2	25.3	53.7	9.2	4.0	96.7	14.4	24.7
Internal Link Dist (m)		57.8		789.2			170.3		129.0
Turn Bay Length (m)	45.0		25.0		25.0	50.0		50.0	
Base Capacity (vph)	183	400	246	405	356	754	1283	414	1348
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	0.01	0.32	0.32	0.50	0.14	0.03	0.57	0.24	0.18

Intersection Summary

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

Future Total Phase 2 2031
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	
Traffic Volume (vph)	2	120	9	79	202	51	24	535	202	98	239	5
Future Volume (vph)	2	120	9	79	202	51	24	535	202	98	239	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		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	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	0.95	1.00		0.90	1.00	1.00	0.92	1.00		0.98	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1736	1883		1644	1921	1500	1671	1801		1794	1910	
Fit Permitted	0.48	1.00		0.67	1.00	1.00	0.61	1.00		0.31	1.00	
Satd. Flow (perm)	871	1883		1167	1921	1500	1068	1801		586	1910	
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	120	9	79	202	51	24	535	202	98	239	5
RTOR Reduction (vph)	0	3	0	0	0	43	0	13	0	0	1	0
Lane Group Flow (vph)	2	126	0	79	202	8	24	724	0	98	243	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4			8		2	2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	14.5	14.5		14.5	14.5	14.5	63.5	63.5		63.5	63.5	
Effective Green, g (s)	14.5	14.5		14.5	14.5	14.5	63.5	63.5		63.5	63.5	
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.16	0.71	0.71		0.71	0.71	
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)	140	303		188	309	241	753	1270		413	1347	
v/s Ratio Prot		0.07			c0.11			c0.40			0.13	
v/s Ratio Perm	0.00			0.07		0.01	0.02			0.17		
v/c Ratio	0.01	0.41		0.42	0.65	0.03	0.03	0.57		0.24	0.18	
Uniform Delay, d1	31.7	33.9		34.0	35.4	31.8	4.0	6.5		4.7	4.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	0.9		1.5	4.9	0.1	0.1	1.9		1.4	0.3	
Delay (s)	31.8	34.9		35.5	40.3	31.9	4.1	8.4		6.0	4.8	
Level of Service	C	C		D	D	C	A	A		A	A	
Approach Delay (s)		34.8			37.9			8.3			5.1	
Approach LOS		C			D			A			A	

Intersection Summary

HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
64: Street JJ & Street Y

Future Total Phase 2 2031
Afternoon Peak Hour

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		0.992			0.967			0.975				
Flt Protected					0.979						0.996	
Satd. Flow (prot)	0	1906	0	0	1819	0	0	1873	0	0	1913	0
Flt Permitted					0.979						0.996	
Satd. Flow (perm)	0	1906	0	0	1819	0	0	1873	0	0	1913	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

Future Total Phase 2 2031
Afternoon Peak Hour

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	17	1	47	35	27	1	213	48	16	207	0
Future Volume (vph)	0	17	1	47	35	27	1	213	48	16	207	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	17	1	47	35	27	1	213	48	16	207	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	18	109	262	223								
Volume Left (vph)	0	47	1	16								
Volume Right (vph)	1	27	48	0								
Hadj (s)	-0.03	-0.06	-0.11	0.01								
Departure Headway (s)	5.1	5.0	4.4	4.5								
Degree Utilization, x	0.03	0.15	0.32	0.28								
Capacity (veh/h)	619	657	792	759								
Control Delay (s)	8.3	8.8	9.4	9.3								
Approach Delay (s)	8.3	8.8	9.4	9.3								
Approach LOS	A	A	A	A								

Intersection Summary

Delay				9.2								
Level of Service				A								
Intersection Capacity Utilization				42.2%		ICU Level of Service				A		
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

Future Total Phase 2 2031
Afternoon Peak Hour

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		0.986			0.978			0.993				
Flt Protected					0.992			0.996			0.991	
Satd. Flow (prot)	0	1894	0	0	1864	0	0	1900	0	0	1904	0
Flt Permitted					0.992			0.996			0.991	
Satd. Flow (perm)	0	1894	0	0	1864	0	0	1900	0	0	1904	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

Future Total Phase 2 2031
Afternoon Peak Hour

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	52	6	22	94	23	8	79	5	13	57	0
Future Volume (vph)	0	52	6	22	94	23	8	79	5	13	57	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	52	6	22	94	23	8	79	5	13	57	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	58	139	92	70								
Volume Left (vph)	0	22	8	13								
Volume Right (vph)	6	23	5	0								
Hadj (s)	-0.06	-0.07	-0.02	0.04								
Departure Headway (s)	4.4	4.3	4.4	4.5								
Degree Utilization, x	0.07	0.17	0.11	0.09								
Capacity (veh/h)	784	799	773	753								
Control Delay (s)	7.7	8.1	8.0	7.9								
Approach Delay (s)	7.7	8.1	8.0	7.9								
Approach LOS	A	A	A	A								

Intersection Summary

Delay 8.0
 Level of Service A
 Intersection Capacity Utilization 32.9% ICU Level of Service A
 Analysis Period (min) 15

Lanes and Geometrics
84: Street JJ & Street EE

Future Total Phase 2 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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		0.865						0.987				
Flt Protected					0.954							
Satd. Flow (prot)	0	1662	0	0	1833	0	0	1896	0	0	1921	0
Flt Permitted					0.954							
Satd. Flow (perm)	0	1662	0	0	1833	0	0	1896	0	0	1921	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

Future Total Phase 2 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	1	29	1	0	1	276	30	0	267	0
Future Volume (Veh/h)	0	0	1	29	1	0	1	276	30	0	267	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	0	1	29	1	0	1	276	30	0	267	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)								262				
pX, platoon unblocked												
vC, conflicting volume	610	675	367	661	660	341	317			356		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	610	675	367	661	660	341	317			356		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	100	100			100		
cM capacity (veh/h)	365	346	626	324	353	676	1201			1162		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1	30	307	267								
Volume Left	0	29	1	0								
Volume Right	1	0	30	0								
cSH	626	325	1201	1162								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	2.4	0.0	0.0								
Control Delay (s)	10.8	17.2	0.0	0.0								
Lane LOS	B	C	A									
Approach Delay (s)	10.8	17.2	0.0	0.0								
Approach LOS	B	C										
Intersection Summary												
Average Delay					0.9							
Intersection Capacity Utilization			35.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

Future Total Phase 2 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.865										
Flt Protected								0.997				
Satd. Flow (prot)	0	1662	0	0	1921	0	0	1915	0	0	1921	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	1662	0	0	1921	0	0	1915	0	0	1921	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

Future Total Phase 2 2031
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↑			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	0	6	0	1	0	8	108	0	0	78	0
Future Volume (vph)	0	0	6	0	1	0	8	108	0	0	78	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	0	6	0	1	0	8	108	0	0	78	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	6	1	116	78								
Volume Left (vph)	0	0	8	0								
Volume Right (vph)	6	0	0	0								
Hadj (s)	-0.60	0.00	0.01	0.00								
Departure Headway (s)	3.7	4.3	4.0	4.0								
Degree Utilization, x	0.01	0.00	0.13	0.09								
Capacity (veh/h)	917	793	884	885								
Control Delay (s)	6.7	7.3	7.6	7.4								
Approach Delay (s)	6.7	7.3	7.6	7.4								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.5
Level of Service	A
Intersection Capacity Utilization	31.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
88: Humber Station Rd & Street EE

Future Total Phase 2 2031
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	0	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1921	0	0	1921	1921	0
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

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

Future Total Phase 2 2031
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	748	427	1
Future Volume (Veh/h)	0	0	0	748	427	1
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	0	0	748	427	1
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)				347	322	
pX, platoon unblocked	0.75					
vC, conflicting volume	1276	528	478			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1202	528	478			
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	100	100			
cM capacity (veh/h)	142	508	1048			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	748	428			
Volume Left	0	0	0			
Volume Right	0	0	1			
cSH	1700	1048	1700			
Volume to Capacity	0.00	0.00	0.25			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			42.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
1: The Gore Rd & King St

FTP2 2031 Without Improvements
Afternoon Peak Hour

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			0.98		0.92	0.96			0.96	
Frt		0.995			0.977			0.956			0.957	
Flt Protected	0.950			0.950			0.950		0.950			
Satd. Flow (prot)	1562	1733	0	1681	1719	0	1261	1690	0	1681	1763	0
Flt Permitted	0.099			0.128			0.531		0.078			
Satd. Flow (perm)	163	1733	0	226	1719	0	651	1690	0	138	1763	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			9			22			21	
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

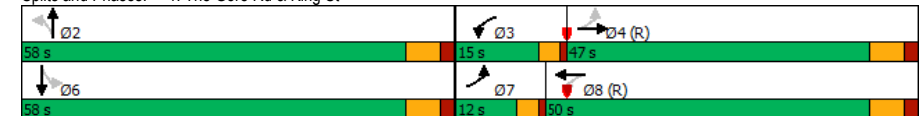
FTP2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	191	529	240	544	57	597	38	191
Future Volume (vph)	191	529	240	544	57	597	38	191
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	47.0	15.0	50.0	58.0	58.0	58.0	58.0
Total Split (%)	10.0%	39.2%	12.5%	41.7%	48.3%	48.3%	48.3%	48.3%
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)	51.0	40.4	57.0	43.4	51.4	51.4	51.4	51.4
Actuated g/C Ratio	0.42	0.34	0.48	0.36	0.43	0.43	0.43	0.43
v/c Ratio	1.18	0.94	1.00	1.03	0.21	1.15	0.64	0.35
Control Delay	153.9	64.2	83.7	81.2	24.1	115.1	77.7	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	153.9	64.2	83.7	81.2	24.1	115.1	77.7	22.7
LOS	F	E	F	F	C	F	E	C
Approach Delay		87.4		81.9		109.4		29.5
Approach LOS		F		F		F		C

Intersection Summary

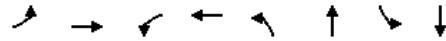
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.18
 Intersection Signal Delay: 86.4
 Intersection Capacity Utilization 108.1%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service G

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



Queues
1: The Gore Rd & King St

FTP2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	191	549	240	645	57	847	38	269
v/c Ratio	1.18	0.94	1.00	1.03	0.21	1.15	0.64	0.35
Control Delay	153.9	64.2	83.7	81.2	24.1	115.1	77.7	22.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	153.9	64.2	83.7	81.2	24.1	115.1	77.7	22.7
Queue Length 50th (m)	~40.8	129.2	36.7	~167.4	8.6	~241.5	7.2	39.9
Queue Length 95th (m)	#88.9	#200.0	#91.0	#240.9	18.8	#319.7	#28.3	61.4
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)	162	584	240	627	278	736	59	767
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	1.18	0.94	1.00	1.03	0.21	1.15	0.64	0.35

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

FTP2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	191	529	20	240	544	101	57	597	250	38	191	78
Future Volume (vph)	191	529	20	240	544	101	57	597	250	38	191	78
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	0.96		1.00	0.96	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		0.92	1.00		1.00	1.00	
Frt	1.00	0.99		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	1732		1681	1718		1165	1689		1681	1762	
Flt Permitted	0.10	1.00		0.13	1.00		0.53	1.00		0.08	1.00	
Satd. Flow (perm)	163	1732		226	1718		650	1689		138	1762	
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)	191	529	20	240	544	101	57	597	250	38	191	78
RTOR Reduction (vph)	0	1	0	0	6	0	0	13	0	0	12	0
Lane Group Flow (vph)	191	548	0	240	639	0	57	834	0	38	257	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	2		6	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.4	40.4		54.4	43.4		51.4	51.4		51.4	51.4	
Effective Green, g (s)	48.4	40.4		54.4	43.4		51.4	51.4		51.4	51.4	
Actuated g/C Ratio	0.40	0.34		0.45	0.36		0.43	0.43		0.43	0.43	
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)	159	583		235	621		278	723		59	754	
v/s Ratio Prot	0.08	0.32		c0.09	0.37			c0.49			0.15	
v/s Ratio Perm	c0.40			0.37			0.09			0.28		
v/c Ratio	1.20	0.94		1.02	1.03		0.21	1.15		0.64	0.34	
Uniform Delay, d1	29.7	38.6		27.7	38.3		21.5	34.3		27.1	23.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	135.7	25.0		64.3	43.8		0.4	84.6		21.6	0.3	
Delay (s)	165.4	63.6		92.0	82.1		21.9	118.9		48.7	23.2	
Level of Service	F	E		F	F		C	F		D	C	
Approach Delay (s)	89.9			84.8			112.8			26.4		
Approach LOS	F			F			F			C		

Intersection Summary

HCM 2000 Control Delay	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	108.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FTP2 2031 Without Improvements
Afternoon Peak Hour

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			0.97			0.97			0.95	
Frt		0.973			0.970			0.988			0.959	
Flt Protected		0.991			0.999			0.984			0.992	
Satd. Flow (prot)	0	1687	0	0	1736	0	0	1472	0	0	1488	0
Flt Permitted		0.608			0.970			0.654			0.795	
Satd. Flow (perm)	0	1030	0	0	1684	0	0	959	0	0	1187	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			14			5			21	
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

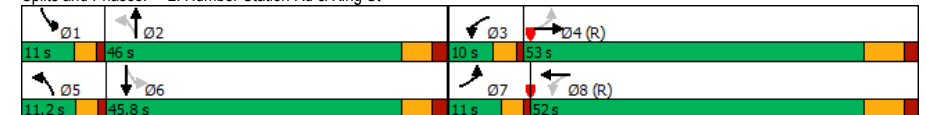
FTP2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	153	560	18	566	236	445	66	237
Future Volume (vph)	153	560	18	566	236	445	66	237
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	53.0	10.0	52.0	11.2	46.0	11.0	45.8
Total Split (%)	9.2%	44.2%	8.3%	43.3%	9.3%	38.3%	9.2%	38.2%
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	2.2	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)		55.6		55.6		50.8		50.8
Actuated g/C Ratio		0.46		0.46		0.42		0.42
v/c Ratio		1.84		0.95		1.84		0.85
Control Delay		410.5		53.9		410.6		46.5
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		410.5		53.9		410.6		46.5
LOS		F		D		F		D
Approach Delay		410.5		53.9		410.6		46.5
Approach LOS		F		D		F		D

Intersection Summary

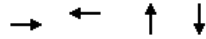
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.84
 Intersection Signal Delay: 259.7
 Intersection LOS: F
 Intersection Capacity Utilization 180.4%
 ICU Level of Service H
 Analysis Period (min) 15

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



Queues
2: Humber Station Rd & King St

FTP2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	891	751	749	435
v/c Ratio	1.84	0.95	1.84	0.85
Control Delay	410.5	53.9	410.6	46.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	410.5	53.9	410.6	46.5
Queue Length 50th (m)	~332.2	170.3	~279.6	90.2
Queue Length 95th (m)	#411.5	#255.8	#355.7	#151.9
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	484	787	408	514
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	1.84	0.95	1.84	0.85

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

FTP2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	153	560	178	18	566	167	236	445	68	66	237	132
Future Volume (vph)	153	560	178	18	566	167	236	445	68	66	237	132
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			0.97			0.99			0.96	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.97			0.97			0.99			0.96	
Flt Protected		0.99			1.00			0.98			0.99	
Satd. Flow (prot)		1681			1735			1450			1489	
Flt Permitted		0.61			0.97			0.65			0.80	
Satd. Flow (perm)		1031			1686			963			1193	
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)	153	560	178	18	566	167	236	445	68	66	237	132
RTOR Reduction (vph)	0	7	0	0	8	0	0	3	0	0	12	0
Lane Group Flow (vph)	0	884	0	0	743	0	0	746	0	0	423	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)		55.6			55.6			50.8			50.8	
Effective Green, g (s)		55.6			55.6			50.8			50.8	
Actuated g/C Ratio		0.46			0.46			0.42			0.42	
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)		477			781			407			505	
v/s Ratio Prot												
v/s Ratio Perm		c0.86			0.44			c0.77			0.35	
v/c Ratio		1.85			0.95			1.83			0.84	
Uniform Delay, d1		32.2			30.9			34.6			30.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		392.0			21.2			384.4			11.5	
Delay (s)		424.2			52.1			419.0			42.5	
Level of Service		F			D			F			D	
Approach Delay (s)		424.2			52.1			419.0			42.5	
Approach LOS		F			D			F			D	
Intersection Summary												
HCM 2000 Control Delay			265.2					HCM 2000 Level of Service			F	
HCM 2000 Volume to Capacity ratio			1.99									
Actuated Cycle Length (s)			120.0					Sum of lost time (s)			21.6	
Intersection Capacity Utilization			180.4%					ICU Level of Service			H	
Analysis Period (min)			15									
c Critical Lane Group												

Lanes and Geometrics
6: King St & Street JJ

FTP2 2031 Without Improvements
Afternoon Peak Hour

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	0.960	
Flt Protected	0.950				0.966	
Satd. Flow (prot)	1730	1883	1883	1601	1684	0
Flt Permitted	0.139				0.966	
Satd. Flow (perm)	253	1883	1883	1338	1560	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				50	20	
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

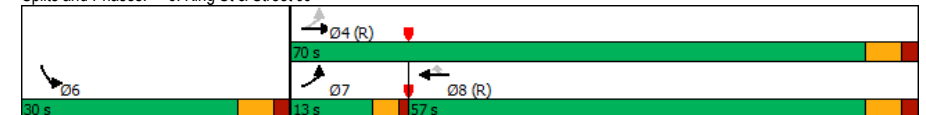
FTP2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	207	617	798	131	231
Future Volume (vph)	207	617	798	131	231
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	70.0	57.0	57.0	30.0
Total Split (%)	13.0%	70.0%	57.0%	57.0%	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)	68.2	66.2	53.1	53.1	21.8
Actuated g/C Ratio	0.68	0.66	0.53	0.53	0.22
v/c Ratio	0.67	0.50	0.80	0.18	0.86
Control Delay	20.3	10.6	27.6	8.9	56.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	10.6	27.6	8.9	56.5
LOS	C	B	C	A	E
Approach Delay		13.1	25.0		56.5
Approach LOS		B	C		E

Intersection Summary

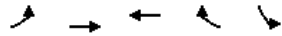
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 25.2
 Intersection Capacity Utilization 86.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FTP2 2031 Without Improvements
Afternoon Peak Hour



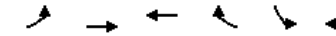
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	207	617	798	131	327
v/c Ratio	0.67	0.50	0.80	0.18	0.86
Control Delay	20.3	10.6	27.6	8.9	56.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	10.6	27.6	8.9	56.5
Queue Length 50th (m)	14.5	60.6	136.2	8.5	58.1
Queue Length 95th (m)	#37.6	87.1	#192.1	18.4	#100.4
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	311	1247	1006	738	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	0.67	0.49	0.79	0.18	0.78

Intersection Summary

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

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

FTP2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	207	617	798	131	231	96
Future Volume (vph)	207	617	798	131	231	96
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	6.0
Lane Util. Factor	1.00	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	1684	
FlT Permitted	0.14	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	253	1883	1883	1338	1684	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	207	617	798	131	231	96
RTOR Reduction (vph)	0	0	0	23	16	0
Lane Group Flow (vph)	207	617	798	108	311	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)	66.2	66.2	53.1	53.1	21.8	
Effective Green, g (s)	66.2	66.2	53.1	53.1	21.8	
Actuated g/C Ratio	0.66	0.66	0.53	0.53	0.22	
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)	301	1246	999	710	367	
v/s Ratio Prot	c0.06	0.33	c0.42		c0.18	
v/s Ratio Perm		0.39		0.08		
v/c Ratio	0.69	0.50	0.80	0.15	0.85	
Uniform Delay, d1	15.6	8.5	19.1	12.0	37.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.4	1.4	6.7	0.5	16.5	
Delay (s)	22.0	9.9	25.8	12.4	54.0	
Level of Service	C	A	C	B	D	
Approach Delay (s)		12.9	23.9		54.0	
Approach LOS		B	C		D	

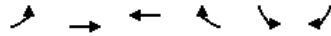
Intersection Summary

HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FTP2011 Without Improvements
Afternoon Peak Hour



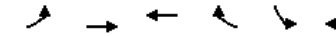
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt				0.850	0.865	
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1601	1629	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1601	1629	0
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

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

FTP2011 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Traffic Volume (veh/h)	0	848	835	131	0	95
Future Volume (Veh/h)	0	848	835	131	0	95
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	848	835	131	0	95
Pedestrians		50	50		50	
Lane Width (m)		3.5	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)		301	330			
pX, platoon unblocked	0.71				0.80	0.71
vC, conflicting volume	1016				1783	935
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	816				1333	702
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	67
cM capacity (veh/h)	550				124	285
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	0	848	835	131	95	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	131	95	
cSH	1700	1700	1700	1700	285	
Volume to Capacity	0.00	0.50	0.49	0.08	0.33	
Queue Length 95th (m)	0.0	0.0	0.0	0.0	11.2	
Control Delay (s)	0.0	0.0	0.0	0.0	23.8	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		23.8	
Approach LOS					C	
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			64.0%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
9: The Gore Rd & Street DDD

FTP2 2031 Without Improvements
Afternoon Peak Hour

	←		↑	→		↓
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		50.0	
Storage Lanes	1		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		0.981			
Flt Protected						
Satd. Flow (prot)	1629	0	1848	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1848	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

FTP2 2031 Without Improvements
Afternoon Peak Hour

	←		↑	→		↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕	↔		↕
Traffic Volume (veh/h)	0	12	808	129	0	323
Future Volume (Veh/h)	0	12	808	129	0	323
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	808	129	0	323
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)					265	
pX, platoon unblocked						
vC, conflicting volume	1296	972			987	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1296	972			987	
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	96			100	
cM capacity (veh/h)	164	280			670	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	12	937	323			
Volume Left	0	0	0			
Volume Right	12	129	0			
cSH	280	1700	1700			
Volume to Capacity	0.04	0.55	0.19			
Queue Length 95th (m)	1.1	0.0	0.0			
Control Delay (s)	18.4	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	18.4	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			69.3%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FTP2 2031 Without Improvements
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98			
Frt	0.964		0.979			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1696	0	1800	0	1730	1883
Flt Permitted	0.965				0.279	
Satd. Flow (perm)	1569	0	1800	0	508	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	19		20			
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

FTP2 2031 Without Improvements
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗
Traffic Volume (vph)	72	691	46	250
Future Volume (vph)	72	691	46	250
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

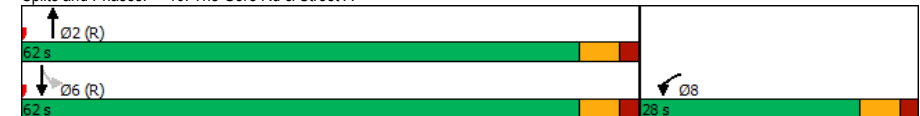
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	13.4	68.1	68.1	68.1
Actuated g/C Ratio	0.15	0.76	0.76	0.76
v/c Ratio	0.37	0.60	0.12	0.18
Control Delay	29.0	10.2	6.9	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.0	10.2	6.9	5.5
LOS	C	B	A	A
Approach Delay	29.0	10.2		5.7
Approach LOS	C	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: 0.60
 Intersection Signal Delay: 10.6
 Intersection Capacity Utilization 70.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FTP2 2031 Without Improvements
Afternoon Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	98	820	46	250
v/c Ratio	0.37	0.60	0.12	0.18
Control Delay	29.0	10.2	6.9	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	29.0	10.2	6.9	5.5
Queue Length 50th (m)	13.5	50.1	1.7	9.9
Queue Length 95th (m)	24.4	136.8	8.2	28.6
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	428	1366	384	1424
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	0.23	0.60	0.12	0.18

Intersection Summary

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

FTP2 2031 Without Improvements
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↓
Traffic Volume (vph)	72	26	691	129	46	250
Future Volume (vph)	72	26	691	129	46	250
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		0.98		1.00	1.00
Flpb, ped/bikes	1.00		1.00		0.98	1.00
Frt	0.96		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1696		1800		1688	1883
Flt Permitted	0.96		1.00		0.28	1.00
Satd. Flow (perm)	1696		1800		495	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	72	26	691	129	46	250
RTOR Reduction (vph)	16	0	5	0	0	0
Lane Group Flow (vph)	82	0	815	0	46	250
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)	12.3		65.7		65.7	65.7
Effective Green, g (s)	12.3		65.7		65.7	65.7
Actuated g/C Ratio	0.14		0.73		0.73	0.73
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)	231		1314		361	1374
v/s Ratio Prot	c0.05		c0.45			0.13
v/s Ratio Perm					0.09	
v/c Ratio	0.35		0.62		0.13	0.18
Uniform Delay, d1	35.2		6.0		3.6	3.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.9		2.2		0.7	0.3
Delay (s)	36.2		8.2		4.3	4.1
Level of Service	D		A		A	A
Approach Delay (s)	36.2		8.2			4.1
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			9.5		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.58			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			70.9%		ICU Level of Service	C
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
48: Humber Station Rd & Street E

FTP2 2031 Without Improvements
Afternoon Peak Hour

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		0.916			0.998			0.850		0.998		
Flt Protected		0.995			0.953		0.950		0.950			
Satd. Flow (prot)	0	1717	0	0	1791	0	1789	1883	1601	1789	1880	0
Flt Permitted		0.952			0.690		0.654		0.496			
Satd. Flow (perm)	0	1642	0	0	1297	0	1232	1883	1601	934	1880	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		35			2				142			1
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

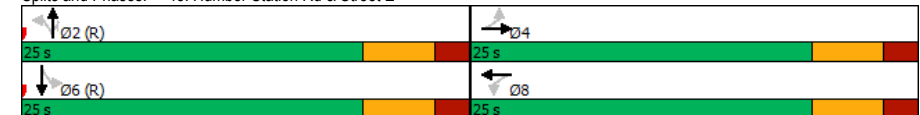
FTP2 2031 Without Improvements
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	6	15	126	1	62	436	142	3	160
Future Volume (vph)	6	15	126	1	62	436	142	3	160
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2		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	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)		10.2		10.2	31.3	31.3	31.3	31.3	31.3
Actuated g/C Ratio		0.20		0.20	0.63	0.63	0.63	0.63	0.63
v/c Ratio		0.16		0.48	0.08	0.37	0.13	0.01	0.14
Control Delay		9.1		22.5	6.9	8.3	2.2	6.7	6.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		9.1		22.5	6.9	8.3	2.2	6.7	6.8
LOS		A		C	A	A	A	A	A
Approach Delay		9.1		22.5		6.8			6.8
Approach LOS		A		C		A			A

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: Actuated-Coordinated
 Maximum v/c Ratio: 0.48
 Intersection Signal Delay: 9.0
 Intersection Capacity Utilization 55.9%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
48: Humber Station Rd & Street E

FTP2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	129	62	436	142	3	162
v/c Ratio	0.16	0.48	0.08	0.37	0.13	0.01	0.14
Control Delay	9.1	22.5	6.9	8.3	2.2	6.7	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.1	22.5	6.9	8.3	2.2	6.7	6.8
Queue Length 50th (m)	1.6	10.4	2.3	20.2	0.0	0.1	6.3
Queue Length 95th (m)	7.5	20.6	8.1	45.7	6.7	1.1	16.6
Internal Link Dist (m)	105.8	185.7		130.4			336.1
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	645	494	771	1179	1055	585	1178
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	0.09	0.26	0.08	0.37	0.13	0.01	0.14

Intersection Summary

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

FTP2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	6	15	35	126	1	2	62	436	142	3	160	2
Future Volume (vph)	6	15	35	126	1	2	62	436	142	3	160	2
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	
Fr't		0.92			1.00		1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.99			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1715			1792		1789	1883	1601	1789	1880	
Flt Permitted		0.95			0.69		0.65	1.00	1.00	0.50	1.00	
Satd. Flow (perm)		1642			1297		1233	1883	1601	935	1880	
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	15	35	126	1	2	62	436	142	3	160	2
RTOR Reduction (vph)	0	29	0	0	2	0	0	0	60	0	0	0
Lane Group Flow (vph)	0	27	0	0	127	0	62	436	82	3	162	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)		9.1			9.1		28.9	28.9	28.9	28.9	28.9	
Effective Green, g (s)		9.1			9.1		28.9	28.9	28.9	28.9	28.9	
Actuated g/C Ratio		0.18			0.18		0.58	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	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		298			236		712	1088	925	540	1086	
v/s Ratio Prot								c0.23			0.09	
v/s Ratio Perm		0.02			c0.10		0.05		0.05	0.00		
v/c Ratio		0.09			0.54		0.09	0.40	0.09	0.01	0.15	
Uniform Delay, d1		17.0			18.6		4.7	5.8	4.7	4.5	4.9	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			2.4		0.2	1.1	0.2	0.0	0.3	
Delay (s)		17.1			20.9		4.9	6.9	4.9	4.5	5.2	
Level of Service		B			C		A	A	A	A	A	
Approach Delay (s)		17.1			20.9			6.3			5.1	
Approach LOS		B			C			A			A	

Intersection Summary

HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

58: Humber Station Rd & Street Y

FTP2 2031 Without Improvements

Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	0.99		0.90		0.92	0.92	0.98		0.98	1.00	
Frt		0.990				0.850		0.959			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1847	0	1789	1883	1601	1789	1766	0	1789	1873	0
Flt Permitted	0.478			0.674			0.607			0.310		
Satd. Flow (perm)	856	1847	0	1144	1883	1470	1047	1766	0	575	1873	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				51		44			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

FTP2 2031 Without Improvements

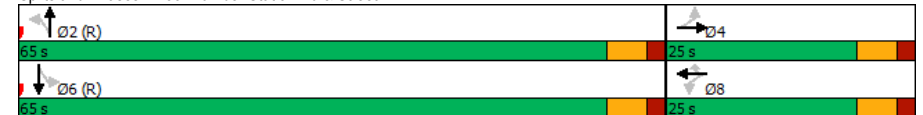
Afternoon Peak Hour

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group									
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	2	120	79	202	51	24	535	98	239
Future Volume (vph)	2	120	79	202	51	24	535	98	239
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)	14.6	14.6	14.6	14.6	14.6	63.4	63.4	63.4	63.4
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.16	0.70	0.70	0.70	0.70
v/c Ratio	0.01	0.43	0.43	0.66	0.18	0.03	0.59	0.24	0.18
Control Delay	29.5	36.3	40.1	45.6	10.6	5.1	9.2	7.4	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	36.3	40.1	45.6	10.6	5.1	9.2	7.4	5.4
LOS	C	D	D	D	B	A	A	A	A
Approach Delay		36.2		38.9			9.1		6.0
Approach LOS		D		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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 17.0
 Intersection Capacity Utilization 86.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

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



Queues
58: Humber Station Rd & Street Y

FTP2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	2	129	79	202	51	24	737	98	244
v/c Ratio	0.01	0.43	0.43	0.66	0.18	0.03	0.59	0.24	0.18
Control Delay	29.5	36.3	40.1	45.6	10.6	5.1	9.2	7.4	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.5	36.3	40.1	45.6	10.6	5.1	9.2	7.4	5.4
Queue Length 50th (m)	0.3	20.4	12.9	34.4	0.0	1.1	53.5	5.4	12.7
Queue Length 95th (m)	2.2	35.3	25.4	54.0	9.2	4.0	98.5	14.5	24.8
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)	180	393	241	397	350	737	1257	404	1320
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	0.01	0.33	0.33	0.51	0.15	0.03	0.59	0.24	0.18

Intersection Summary

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

FTP2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	2	120	9	79	202	51	24	535	202	98	239	5
Future Volume (vph)	2	120	9	79	202	51	24	535	202	98	239	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		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	
Frbp, ped/bikes	1.00	0.99		1.00	1.00	0.92	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	0.95	1.00		0.90	1.00	1.00	0.92	1.00		0.98	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1702	1846		1612	1883	1470	1638	1766		1759	1872	
Fit Permitted	0.48	1.00		0.67	1.00	1.00	0.61	1.00		0.31	1.00	
Satd. Flow (perm)	857	1846		1144	1883	1470	1047	1766		573	1872	
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	120	9	79	202	51	24	535	202	98	239	5
RTOR Reduction (vph)	0	3	0	0	0	43	0	13	0	0	1	0
Lane Group Flow (vph)	2	126	0	79	202	8	24	724	0	98	243	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)	14.6	14.6		14.6	14.6	14.6	63.4	63.4		63.4	63.4	
Effective Green, g (s)	14.6	14.6		14.6	14.6	14.6	63.4	63.4		63.4	63.4	
Actuated g/C Ratio	0.16	0.16		0.16	0.16	0.16	0.70	0.70		0.70	0.70	
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)	139	299		185	305	238	737	1244		403	1318	
v/s Ratio Prot		0.07			c0.11			c0.41			0.13	
v/s Ratio Perm	0.00			0.07		0.01	0.02			0.17		
v/c Ratio	0.01	0.42		0.43	0.66	0.03	0.03	0.58		0.24	0.18	
Uniform Delay, d1	31.7	33.9		33.9	35.4	31.8	4.0	6.7		4.7	4.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.0	1.0		1.6	5.3	0.1	0.1	2.0		1.4	0.3	
Delay (s)	31.7	34.9		35.5	40.7	31.8	4.1	8.7		6.2	4.8	
Level of Service	C	C		D	D	C	A	A		A	A	
Approach Delay (s)		34.8			38.1			8.5			5.2	
Approach LOS		C			D			A			A	

Intersection Summary

HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
64: Street JJ & Street Y

FTP2011 Without Improvements
Afternoon Peak Hour



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	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		0.992			0.967			0.975				
Flt Protected					0.979						0.996	
Satd. Flow (prot)	0	1868	0	0	1783	0	0	1836	0	0	1876	0
Flt Permitted					0.979						0.996	
Satd. Flow (perm)	0	1868	0	0	1783	0	0	1836	0	0	1876	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

FTP2011 Without Improvements
Afternoon Peak Hour



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	17	1	47	35	27	1	213	48	16	207	0
Future Volume (vph)	0	17	1	47	35	27	1	213	48	16	207	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	17	1	47	35	27	1	213	48	16	207	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	18	109	262	223
Volume Left (vph)	0	47	1	16
Volume Right (vph)	1	27	48	0
Hadj (s)	0.00	-0.03	-0.08	0.05
Departure Headway (s)	5.2	5.0	4.4	4.6
Degree Utilization, x	0.03	0.15	0.32	0.28
Capacity (veh/h)	614	652	785	752
Control Delay (s)	8.3	8.9	9.5	9.4
Approach Delay (s)	8.3	8.9	9.5	9.4
Approach LOS	A	A	A	A

Intersection Summary

Delay	9.3
Level of Service	A
Intersection Capacity Utilization	42.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

FTP2021 Without Improvements
Afternoon Peak Hour

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		0.986			0.978			0.993				
Flt Protected					0.992			0.996			0.991	
Satd. Flow (prot)	0	1857	0	0	1827	0	0	1863	0	0	1866	0
Flt Permitted					0.992			0.996			0.991	
Satd. Flow (perm)	0	1857	0	0	1827	0	0	1863	0	0	1866	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

FTP2021 Without Improvements
Afternoon Peak Hour

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	52	6	22	94	23	8	79	5	13	57	0
Future Volume (vph)	0	52	6	22	94	23	8	79	5	13	57	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	52	6	22	94	23	8	79	5	13	57	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	58	139	92	70								
Volume Left (vph)	0	22	8	13								
Volume Right (vph)	6	23	5	0								
Hadj (s)	-0.03	-0.03	0.02	0.07								
Departure Headway (s)	4.4	4.3	4.5	4.5								
Degree Utilization, x	0.07	0.17	0.11	0.09								
Capacity (veh/h)	778	793	766	747								
Control Delay (s)	7.7	8.2	8.0	8.0								
Approach Delay (s)	7.7	8.2	8.0	8.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.0
Level of Service	A
Intersection Capacity Utilization	32.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FTP2 2031 Without Improvements
Afternoon Peak Hour

	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	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		0.865						0.987				
Flt Protected					0.954							
Satd. Flow (prot)	0	1629	0	0	1797	0	0	1859	0	0	1883	0
Flt Permitted					0.954							
Satd. Flow (perm)	0	1629	0	0	1797	0	0	1859	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

FTP2 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	1	29	1	0	1	276	30	0	267	0
Future Volume (Veh/h)	0	0	1	29	1	0	1	276	30	0	267	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	0	1	29	1	0	1	276	30	0	267	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)								262				
pX, platoon unblocked												
vC, conflicting volume	610	675	367	661	660	341	317			356		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	610	675	367	661	660	341	317			356		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	100	100			100		
cM capacity (veh/h)	363	344	621	322	351	671	1190			1151		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	1	30	307	267								
Volume Left	0	29	1	0								
Volume Right	1	0	30	0								
cSH	621	322	1190	1151								
Volume to Capacity	0.00	0.09	0.00	0.00								
Queue Length 95th (m)	0.0	2.4	0.0	0.0								
Control Delay (s)	10.8	17.3	0.0	0.0								
Lane LOS	B	C	A									
Approach Delay (s)	10.8	17.3	0.0	0.0								
Approach LOS	B	C										
Intersection Summary												
Average Delay				0.9								
Intersection Capacity Utilization			35.8%		ICU Level of Service				A			
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FTP2 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.865										
Flt Protected								0.997				
Satd. Flow (prot)	0	1629	0	0	1883	0	0	1878	0	0	1883	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	1629	0	0	1883	0	0	1878	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

FTP2 2031 Without Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	0	6	0	1	0	8	108	0	0	78	0
Future Volume (Veh/h)	0	0	6	0	1	0	8	108	0	0	78	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	0	6	0	1	0	8	108	0	0	78	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)												
pX, platoon unblocked												
vC, conflicting volume	302	302	178	308	302	208	128			158		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	302	302	178	308	302	208	128			158		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	99	100	100	100	99			100		
cM capacity (veh/h)	554	556	792	546	556	763	1395			1361		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	6	1	116	78								
Volume Left	0	0	8	0								
Volume Right	6	0	0	0								
cSH	792	556	1395	1361								
Volume to Capacity	0.01	0.00	0.01	0.00								
Queue Length 95th (m)	0.2	0.0	0.1	0.0								
Control Delay (s)	9.6	11.5	0.6	0.0								
Lane LOS	A	B	A									
Approach Delay (s)	9.6	11.5	0.6	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay				0.7								
Intersection Capacity Utilization			31.4%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FTP2 2031 Without Improvements
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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
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

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

FTP2 2031 Without Improvements
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	0	0	0	748	427	1
Future Volume (Veh/h)	0	0	0	748	427	1
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	0	0	748	427	1
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)				347	322	
pX, platoon unblocked	0.80					
vC, conflicting volume	1276	528	478			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1221	528	478			
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	100	100			
cM capacity (veh/h)	146	505	1038			
Direction, Lane #						
	EB 1	NB 1	SB 1			
Volume Total	0	748	428			
Volume Left	0	0	0			
Volume Right	0	0	1			
cSH	1700	1038	1700			
Volume to Capacity	0.00	0.00	0.25			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					

Intersection Summary

Average Delay		0.0				
Intersection Capacity Utilization		42.7%		ICU Level of Service		A
Analysis Period (min)		15				

Lanes and Geometrics
1: The Gore Rd & King St

FB_Full Build-out 2041
Morning Peak Hour

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	0.93		0.86	0.93		0.86	0.96		0.91	0.93		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1713	3380	1570	1697	3380	1420	1765	3510	1555	1713	3614	1617
Flt Permitted	0.499			0.540			0.296			0.694		
Satd. Flow (perm)	839	3380	1346	892	3380	1218	531	3510	1422	1169	3614	1479
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			161		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
1: The Gore Rd & King St

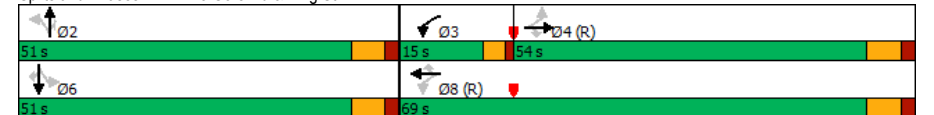
FB_Full Build-out 2041
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑
Traffic Volume (vph)	52	300	171	55	435	27	11	93	62	100	461	125
Future Volume (vph)	52	300	171	55	435	27	11	93	62	100	461	125
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4		3	8		2		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)	54.0	54.0	54.0	15.0	69.0	69.0	51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	45.0%	45.0%	45.0%	12.5%	57.5%	57.5%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%
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)	76.0	76.0	76.0	87.3	84.7	84.7	22.1	22.1	22.1	22.1	22.1	22.1
Actuated g/C Ratio	0.63	0.63	0.63	0.73	0.71	0.71	0.18	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.10	0.14	0.19	0.08	0.18	0.03	0.11	0.14	0.20	0.47	0.69	0.34
Control Delay	11.3	10.1	2.6	5.6	6.5	1.9	41.6	40.5	9.1	50.4	51.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	10.1	2.6	5.6	6.5	1.9	41.6	40.5	9.1	50.4	51.3	9.2
LOS	B	B	A	A	A	A	D	D	A	D	D	A
Approach Delay		7.8			6.2		28.8				43.5	
Approach LOS		A			A		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: 0.69
 Intersection Signal Delay: 22.1
 Intersection Capacity Utilization 71.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
1: The Gore Rd & King St

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	52	300	171	55	435	27	11	93	62	100	461	125
v/c Ratio	0.10	0.14	0.19	0.08	0.18	0.03	0.11	0.14	0.20	0.47	0.69	0.34
Control Delay	11.3	10.1	2.6	5.6	6.5	1.9	41.6	40.5	9.1	50.4	51.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	10.1	2.6	5.6	6.5	1.9	41.6	40.5	9.1	50.4	51.3	9.2
Queue Length 50th (m)	4.8	14.9	0.9	3.3	16.6	0.0	2.3	10.2	0.0	22.2	56.3	0.0
Queue Length 95th (m)	12.3	25.1	11.0	8.3	26.9	2.7	7.6	16.9	10.0	38.0	70.3	15.6
Internal Link Dist (m)	339.2			183.4			604.6			554.8		
Turn Bay Length (m)				139.9			25.0			199.9		
Base Capacity (vph)	531	2141	911	722	2386	869	196	1298	569	432	1337	625
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	0.10	0.14	0.19	0.08	0.18	0.03	0.06	0.07	0.11	0.23	0.34	0.20

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	52	300	171	55	435	27	11	93	62	100	461	125
Future Volume (vph)	52	300	171	55	435	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	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	0.93	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)	1596	3380	1346	1631	3380	1218	1708	3510	1422	1601	3614	1479
Flt Permitted	0.50	1.00	1.00	0.54	1.00	1.00	0.30	1.00	1.00	0.69	1.00	1.00
Satd. Flow (perm)	839	3380	1346	927	3380	1218	532	3510	1422	1169	3614	1479
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	55	435	27	11	93	62	100	461	125
RTOR Reduction (vph)	0	0	60	0	0	8	0	0	51	0	0	102
Lane Group Flow (vph)	52	300	111	55	435	19	11	93	11	100	461	23
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	3%	8%	4%	4%	8%	15%	0%	4%	5%	3%	1%	1%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4		3		8		2		2		6	
Permitted Phases	4		8		8		2		2		6	
Actuated Green, G (s)	75.2	75.2	75.2	84.7	84.7	84.7	22.1	22.1	22.1	22.1	22.1	22.1
Effective Green, g (s)	75.2	75.2	75.2	84.7	84.7	84.7	22.1	22.1	22.1	22.1	22.1	22.1
Actuated g/C Ratio	0.63	0.63	0.63	0.71	0.71	0.71	0.18	0.18	0.18	0.18	0.18	0.18
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)	525	2118	843	686	2385	859	97	646	261	215	665	272
v/s Ratio Prot	0.09		0.00		c0.13		0.03		c0.13		c0.13	
v/s Ratio Perm	0.06		0.08		0.05		0.02		0.02		0.02	
v/c Ratio	0.10	0.14	0.13	0.08	0.18	0.02	0.11	0.14	0.04	0.47	0.69	0.08
Uniform Delay, d1	8.9	9.2	9.1	5.4	6.0	5.3	40.8	41.0	40.3	43.7	45.8	40.6
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	0.4	0.1	0.3	0.1	0.2	0.0	0.5	0.1	0.1	1.6	3.1	0.1
Delay (s)	9.3	9.3	9.4	5.5	6.1	5.3	41.3	41.1	40.3	45.3	48.9	40.7
Level of Service	A	A	A	A	A	A	D	D	D	D	D	D
Approach Delay (s)	9.4				6.0				40.8			
Approach LOS	A				A				D			

Intersection Summary

HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FB_Full Build-out 2041
Morning Peak Hour

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	0.97		0.93	0.95		0.88	0.91		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	3476	1570	1590	3444	1585	1535	3579	949	1665	3579	1585
Flt Permitted	0.467			0.475			0.612			0.664		
Satd. Flow (perm)	824	3476	1455	769	3444	1469	937	3579	833	1064	3579	1469
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			133			79			146			146
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

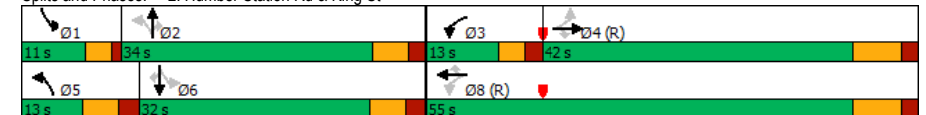
FB_Full Build-out 2041
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔	↔	↔↔	↔
Traffic Volume (vph)	57	384	103	73	503	71	17	138	18	17	101	22
Future Volume (vph)	57	384	103	73	503	71	17	138	18	17	101	22
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)	42.0	42.0	42.0	13.0	55.0	55.0	13.0	34.0	34.0	11.0	32.0	32.0
Total Split (%)	42.0%	42.0%	42.0%	13.0%	55.0%	55.0%	13.0%	34.0%	34.0%	11.0%	32.0%	32.0%
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)	52.5	52.5	52.5	65.2	62.8	62.8	22.1	19.4	19.4	23.2	18.2	18.2
Actuated g/C Ratio	0.52	0.52	0.52	0.65	0.63	0.63	0.22	0.19	0.19	0.23	0.18	0.18
v/c Ratio	0.13	0.21	0.12	0.13	0.23	0.07	0.07	0.20	0.06	0.06	0.15	0.06
Control Delay	20.1	16.7	2.5	10.0	10.4	3.1	24.2	32.9	0.4	22.6	33.5	0.3
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	20.1	16.7	2.5	10.0	10.4	3.1	24.2	32.9	0.4	22.6	33.5	0.3
LOS	C	B	A	B	B	A	C	C	A	C	C	A
Approach Delay		14.4			9.6			28.7				27.0
Approach LOS		B			A			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: 0.23
 Intersection Signal Delay: 15.1
 Intersection Capacity Utilization 60.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
2: Humber Station Rd & King St

FB_Full Build-out 2041
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	384	103	73	503	71	17	138	18	17	101	22
v/c Ratio	0.13	0.21	0.12	0.13	0.23	0.07	0.07	0.20	0.06	0.06	0.15	0.06
Control Delay	20.1	16.7	2.5	10.0	10.4	3.1	24.2	32.9	0.4	22.6	33.5	0.3
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	20.1	16.7	2.5	10.0	10.4	3.1	24.2	32.9	0.4	22.6	33.5	0.3
Queue Length 50th (m)	4.5	16.8	0.0	3.3	14.9	0.0	3.0	13.1	0.0	2.9	9.5	0.0
Queue Length 95th (m)	18.5	42.6	6.9	14.6	42.2	6.2	6.7	19.0	0.0	6.4	15.3	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)	434	1831	829	571	2162	951	248	1002	338	290	923	487
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	0.13	0.21	0.12	0.13	0.23	0.07	0.07	0.14	0.05	0.06	0.11	0.05

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour

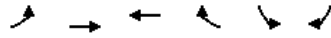
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	57	384	103	73	503	71	17	138	18	17	101	22
Future Volume (vph)	57	384	103	73	503	71	17	138	18	17	101	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	0.97	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)	1677	3476	1455	1567	3444	1469	1488	3579	833	1572	3579	1469
Flt Permitted	0.47	1.00	1.00	0.47	1.00	1.00	0.61	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	825	3476	1455	783	3444	1469	958	3579	833	1100	3579	1469
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)	57	384	103	73	503	71	17	138	18	17	101	22
RTOR Reduction (vph)	0	0	54	0	0	29	0	14	0	0	18	0
Lane Group Flow (vph)	57	384	49	73	503	42	17	138	4	17	101	4
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	5%	4%	11%	6%	3%	15%	2%	72%	6%	2%	3%
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)	47.8	47.8	47.8	59.1	59.1	59.1	23.6	20.7	20.7	21.0	18.2	18.2
Effective Green, g (s)	47.8	47.8	47.8	59.1	59.1	59.1	23.6	20.7	20.7	21.0	18.2	18.2
Actuated g/C Ratio	0.48	0.48	0.48	0.59	0.59	0.59	0.24	0.21	0.21	0.21	0.18	0.18
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)	394	1661	695	512	2035	868	241	740	172	244	651	267
v/s Ratio Prot		0.11		0.01	c0.15		c0.00	c0.04		0.00	0.03	
v/s Ratio Perm	0.07		0.03	0.08		0.03	0.01		0.00	0.01		0.00
v/c Ratio	0.14	0.23	0.07	0.14	0.25	0.05	0.07	0.19	0.02	0.07	0.16	0.01
Uniform Delay, d1	14.6	15.3	14.1	8.9	9.8	8.6	29.5	32.7	31.6	31.5	34.4	33.5
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	0.8	0.3	0.2	0.1	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Delay (s)	15.4	15.6	14.3	9.0	10.1	8.7	29.7	32.8	31.6	31.7	34.5	33.6
Level of Service	B	B	B	A	B	A	C	C	C	C	C	C
Approach Delay (s)		15.4			9.8		32.4				34.0	
Approach LOS		B			A		C				C	

Intersection Summary

HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FB_Full Build-out 2041
Morning Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	3650	3650	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	3650	3650	1921	1921	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBT	WBT	Ø6
Lane Configurations	↑↑	↑↑	
Traffic Volume (vph)	488	533	
Future Volume (vph)	488	533	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	33%
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	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.18	0.20	
Control Delay	5.5	6.6	
Queue Delay	0.0	0.0	
Total Delay	5.5	6.6	
LOS	A	A	
Approach Delay	5.5	6.6	
Approach LOS	A	A	

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: 0.20
 Intersection Signal Delay: 6.1
 Intersection Capacity Utilization 41.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FB_Full Build-out 2041
Morning Peak Hour

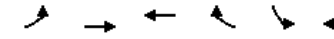


Lane Group	EBT	WBT
Lane Group Flow (vph)	488	533
v/c Ratio	0.18	0.20
Control Delay	5.5	6.6
Queue Delay	0.0	0.0
Total Delay	5.5	6.6
Queue Length 50th (m)	7.5	18.4
Queue Length 95th (m)	27.2	44.0
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	2640	2640
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.18	0.20

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour



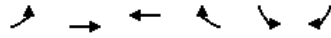
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↗
Traffic Volume (vph)	0	488	533	0	0	0
Future Volume (vph)	0	488	533	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		0.95	0.95			
Frpb, ped/bikes		1.00	1.00			
Frpl, ped/bikes		1.00	1.00			
Frnt		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		3650	3650			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		3650	3650			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	488	533	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	488	533	0	0	0
Confl. Peds. (#/hr)		50		50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		2640	2640			
v/s Ratio Prot		0.13	c0.15			
v/s Ratio Perm						
v/c Ratio		0.18	0.20			
Uniform Delay, d1		4.0	4.0			
Progression Factor		1.00	1.20			
Incremental Delay, d2		0.2	0.2			
Delay (s)		4.1	5.0			
Level of Service		A	A			
Approach Delay (s)		4.1	5.0		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	4.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

FB_Full Build-out 2041
Morning Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	3650	3650	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	3650	3650	1921	1921	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBT	WBT	Ø6
Lane Configurations	↑↑	↑↑	
Traffic Volume (vph)	488	533	
Future Volume (vph)	488	533	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	33%
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

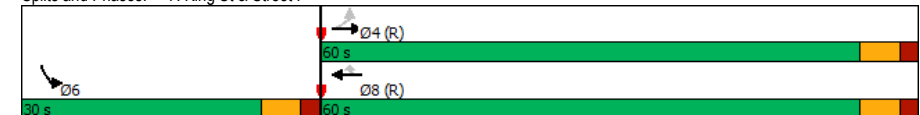
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.18	0.20	
Control Delay	12.5	5.5	
Queue Delay	0.0	0.0	
Total Delay	12.5	5.5	
LOS	B	A	
Approach Delay	12.5	5.5	
Approach LOS	B	A	

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: 0.20
 Intersection Signal Delay: 8.9
 Intersection Capacity Utilization 41.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FB_Full Build-out 2041
Morning Peak Hour

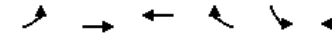


Lane Group	EBT	WBT
Lane Group Flow (vph)	488	533
v/c Ratio	0.18	0.20
Control Delay	12.5	5.5
Queue Delay	0.0	0.0
Total Delay	12.5	5.5
Queue Length 50th (m)	7.5	8.2
Queue Length 95th (m)	56.6	29.7
Internal Link Dist (m)	276.5	305.7
Turn Bay Length (m)		
Base Capacity (vph)	2640	2640
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.18	0.20

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	0	488	533	0	0	0
Future Volume (vph)	0	488	533	0	0	0
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			
Lane Util. Factor		0.95	0.95			
Frpb, ped/bikes		1.00	1.00			
Frpl, ped/bikes		1.00	1.00			
Frnt		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		3650	3650			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		3650	3650			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	488	533	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	488	533	0	0	0
Confl. Peds. (#/hr)		50		50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		2640	2640			
v/s Ratio Prot		0.13	c0.15			
v/s Ratio Perm						
v/c Ratio		0.18	0.20			
Uniform Delay, d1		4.0	4.0			
Progression Factor		2.32	1.00			
Incremental Delay, d2		0.2	0.2			
Delay (s)		9.4	4.2			
Level of Service		A	A			
Approach Delay (s)		9.4	4.2		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	6.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.17		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
8: The Gore Rd & Street Y

FB_Full Build-out 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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	0.94		1.00	0.85		
Frt			0.999	0.850		
Flt Protected	0.950					
Satd. Flow (prot)	1825	0	1786	1551	1858	1921
Flt Permitted	0.950					
Satd. Flow (perm)	1713	0	1786	1319	1858	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)			1	4		
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

FB_Full Build-out 2041
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	NBR	SBT
Lane Configurations	↙	↖	↗	↓
Traffic Volume (vph)	1	202	5	788
Future Volume (vph)	1	202	5	788
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)	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

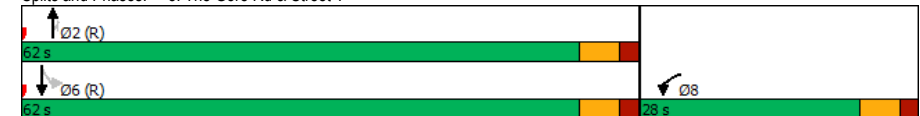
Lead-Lag Optimize?

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	0.00	0.13	0.00	0.48
Control Delay	27.0	4.5	4.2	10.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.0	4.5	4.2	10.5
LOS	C	A	A	B
Approach Delay	27.0	4.5		10.5
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: 0.48
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 67.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
8: The Gore Rd & Street Y












FB_Full Build-out 2041
Morning Peak Hour

				
Lane Group	WBL	NBT	NBR	SBT
Lane Group Flow (vph)	1	203	4	788
v/c Ratio	0.00	0.13	0.00	0.48
Control Delay	27.0	4.5	4.2	10.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	27.0	4.5	4.2	10.5
Queue Length 50th (m)	0.2	0.0	0.0	0.0
Queue Length 95th (m)	1.4	24.7	1.2	107.3
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)			25.0	
Base Capacity (vph)	446	1516	1120	1631
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	0.00	0.13	0.00	0.48

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour

						
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		6.0
Lane Util. Factor	1.00		0.95	0.95		1.00
Frpb, ped/bikes	1.00		1.00	0.85		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)	1825		1787	1319		1921
Flt Permitted	0.95		1.00	1.00		1.00
Satd. Flow (perm)	1825		1787	1319		1921
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	0	1	0	0
Lane Group Flow (vph)	1	0	203	3	0	788
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	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)	178		1374	1014		1477
v/s Ratio Prot	c0.00		0.11			c0.41
v/s Ratio Perm				0.00		
v/c Ratio	0.01		0.15	0.00		0.53
Uniform Delay, d1	36.7		2.7	2.4		4.1
Progression Factor	1.00		1.00	1.00		1.55
Incremental Delay, d2	0.0		0.2	0.0		1.2
Delay (s)	36.7		2.9	2.4		7.6
Level of Service	D		A	A		A
Approach Delay (s)	36.7		2.9			7.6
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	6.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
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
9: The Gore Rd & Street DDD

FB_Full Build-out 2041
Morning Peak Hour

	←		↑		→	
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						
Fr						
Flt Protected						
Satd. Flow (prot)	1921	0	1883	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1883	0	1858	1921
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

FB_Full Build-out 2041
Morning Peak Hour

	←		↑		→	
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↕		↔	↕
Traffic Volume (veh/h)	0	0	202	0	0	788
Future Volume (Veh/h)	0	0	202	0	0	788
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	0	202	0	0	788
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	0.79					
vC, conflicting volume	1090	302			252	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	980	302			252	
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	100			100	
cM capacity (veh/h)	202	681			1268	
Direction, Lane #						
	WB 1	NB 1	SB 1	SB 2		
Volume Total	0	202	0	788		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.12	0.00	0.46		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			59.6%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FB_Full Build-out 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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)	1462	0	1883	0	1765	1921
Flt Permitted					0.631	
Satd. Flow (perm)	1462	0	1883	0	1055	1921
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

FB_Full Build-out 2041
Morning Peak Hour

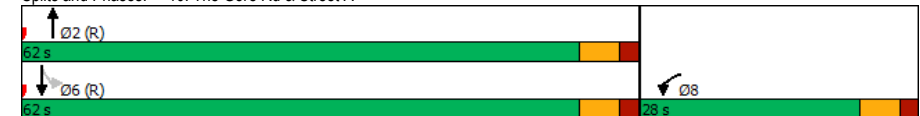
	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	0	202	27	788
Future Volume (vph)	0	202	27	788
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases			6	
Detector Phase	8	2	6	6
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	28.0	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	0.48
Control Delay	0.0	4.1	5.2	7.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.1	5.2	7.2
LOS	A	A	A	A
Approach Delay		4.1		7.1
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: 0.48
 Intersection Signal Delay: 6.5
 Intersection Capacity Utilization 67.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FB_Full Build-out 2041
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	202	27	788
v/c Ratio	0.01	0.13	0.03	0.48
Control Delay	0.0	4.1	5.2	7.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.0	4.1	5.2	7.2
Queue Length 50th (m)	0.0	0.0	0.0	0.0
Queue Length 95th (m)	0.0	23.4	4.8	121.1
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	800	1598	895	1631
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	0.48

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↖		↗	↘
Traffic Volume (vph)	0	7	202	0	27	788
Future Volume (vph)	0	7	202	0	27	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)	1462		1883		1588	1921
Flt Permitted	1.00		1.00		0.63	1.00
Satd. Flow (perm)	1462		1883		1055	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	7	202	0	27	788
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	1	0	202	0	27	788
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
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)	142		1447		811	1477
v/s Ratio Prot	c0.00		0.11			c0.41
v/s Ratio Perm					0.03	
v/c Ratio	0.00		0.14		0.03	0.53
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	1.4
Delay (s)	36.7		2.7		2.5	5.5
Level of Service	D		A		A	A
Approach Delay (s)	36.7		2.7			5.4
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
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

FB_Full Build-out 2041
Morning Peak Hour



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	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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour



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	48	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	48	0	0	11	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	48	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.05	0.01	0.00	0.00								
Capacity (veh/h)	913	906	886	886								
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	7.1		
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

FB_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Friction												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	48	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	48	0	0	11	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	48	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.05	0.01	0.00	0.00								
Capacity (veh/h)	913	906	886	886								
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				7.1								
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

FB_Full Build-out 2041
Morning Peak Hour

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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour

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	48	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	48	0	0	11	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	48	0	0	11	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	48	11	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.05	0.01	0.00	0.00								
Capacity (veh/h)	913	906	886	886								
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				7.1								
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

FB_Full Build-out 2041
Morning Peak Hour

	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		0.994			0.971			0.996				
Flt Protected								0.996			0.994	
Satd. Flow (prot)	0	1910	0	0	1865	0	0	1869	0	0	1910	0
Flt Permitted								0.996			0.994	
Satd. Flow (perm)	0	1910	0	0	1865	0	0	1869	0	0	1910	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

FB_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	46	2	0	11	3	3	30	1	11	87	0
Future Volume (vph)	0	46	2	0	11	3	3	30	1	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	46	2	0	11	3	3	30	1	11	87	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	14	34	98								
Volume Left (vph)	0	0	3	11								
Volume Right (vph)	2	3	1	0								
Hadj (s)	-0.02	-0.13	0.03	0.02								
Departure Headway (s)	4.2	4.1	4.2	4.1								
Degree Utilization, x	0.06	0.02	0.04	0.11								
Capacity (veh/h)	832	842	837	862								
Control Delay (s)	7.4	7.2	7.3	7.6								
Approach Delay (s)	7.4	7.2	7.3	7.6								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.5								
Level of Service				A								
Intersection Capacity Utilization				30.3%			ICU Level of Service				A	
Analysis Period (min)				15								

Lanes and Geometrics
48: Humber Station Rd & Street E

FB_Full Build-out 2041
Morning Peak Hour

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	1921	0	0	1825	0	1883	1883	1633	1921	1921	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1921	0	0	1351	0	1883	1883	1411	1921	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)								311				
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

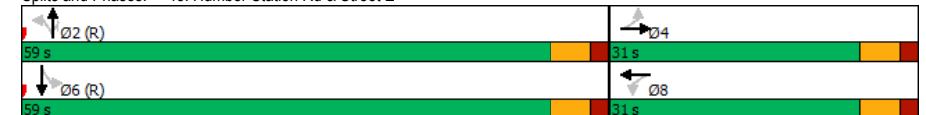
FB_Full Build-out 2041
Morning Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↑	↔	↔	
Traffic Volume (vph)	46	0	31	311	89	
Future Volume (vph)	46	0	31	311	89	
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)	31.0	31.0	59.0	59.0	59.0	31.0
Total Split (%)	34.4%	34.4%	65.6%	65.6%	65.6%	34%
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-Min	C-Min	C-Min	None
Act Effct Green (s)		8.5	76.7	76.7	76.7	
Actuated g/C Ratio		0.09	0.85	0.85	0.85	
v/c Ratio		0.36	0.02	0.25	0.05	
Control Delay		45.1	2.0	1.9	2.6	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		45.1	2.0	1.9	2.6	
LOS		D	A	A	A	
Approach Delay		45.1	1.9		2.6	
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: 0.36
 Intersection Signal Delay: 6.2
 Intersection Capacity Utilization 39.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	46	31	311	89
v/c Ratio	0.36	0.02	0.25	0.05
Control Delay	45.1	2.0	1.9	2.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	45.1	2.0	1.9	2.6
Queue Length 50th (m)	7.9	1.3	0.1	3.0
Queue Length 95th (m)	18.0	2.8	0.0	7.3
Internal Link Dist (m)	92.4	129.1		337.3
Turn Bay Length (m)				
Base Capacity (vph)	375	1605	1249	1638
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	0.12	0.02	0.25	0.05

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+		+	+	+
Traffic Volume (vph)	0	0	0	46	0	0	0	31	311	0	89	0
Future Volume (vph)	0	0	0	46	0	0	0	31	311	0	89	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	
Frbp, 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	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1695			1883	1411		1921	
Fit Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1351			1883	1411		1921	
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	46	0	0	0	31	311	0	89	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	63	0	0	0
Lane Group Flow (vph)	0	0	0	0	46	0	0	31	248	0	89	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	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)					6.1			71.9	71.9		71.9	
Effective Green, g (s)					6.1			71.9	71.9		71.9	
Actuated g/C Ratio					0.07			0.80	0.80		0.80	
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)					91			1504	1127		1534	
v/s Ratio Prot								0.02			0.05	
v/s Ratio Perm					c0.03				c0.18			
v/c Ratio					0.51			0.02	0.22		0.06	
Uniform Delay, d1					40.5			1.9	2.2		1.9	
Progression Factor					1.00			0.72	3.20		1.00	
Incremental Delay, d2					4.4			0.0	0.4		0.1	
Delay (s)					44.9			1.4	7.5		2.0	
Level of Service					D			A	A		A	
Approach Delay (s)		0.0			44.9			7.0			2.0	
Approach LOS		A			D			A			A	

Intersection Summary

HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

FB_Full Build-out 2041

58: Humber Station Rd & Street Y

Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
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	0.93	0.92		0.94		0.92	0.90	0.99		0.95	1.00	
Frt		0.850				0.850		0.975			0.998	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1500	0	1825	1921	1633	1789	3454	0	1825	3637	0
Flt Permitted	0.757			0.515			0.694			0.596		
Satd. Flow (perm)	1351	1500	0	928	1921	1500	1171	3454	0	1088	3637	0
Right Turn on Red			Yes			Yes		Yes			Yes	
Satd. Flow (RTOR)		497				378		29			1	
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

FB_Full Build-out 2041

58: Humber Station Rd & Street Y

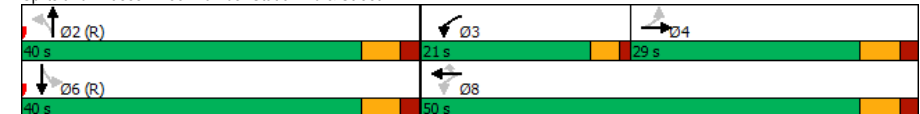
Morning Peak Hour

	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	12	0	120	120	3	210	41	92
Future Volume (vph)	12	0	120	120	3	210	41	92
Turn Type	Perm	NA	pm+pt	Perm	Perm	NA	Perm	NA
Protected Phases		4	3			2		6
Permitted Phases	4		8	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	5.0	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	11.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	29.0	29.0	21.0	50.0	40.0	40.0	40.0	40.0
Total Split (%)	32.2%	32.2%	23.3%	55.6%	44.4%	44.4%	44.4%	44.4%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0
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)	6.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead					
Lead-Lag Optimize?	Yes	Yes	Yes					
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	11.0	11.0	22.8	20.8	57.2	57.2	57.2	57.2
Actuated g/C Ratio	0.12	0.12	0.25	0.23	0.64	0.64	0.64	0.64
v/c Ratio	0.07	0.02	0.36	0.19	0.00	0.11	0.06	0.04
Control Delay	31.2	0.1	26.1	0.7	15.3	10.7	15.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	0.1	26.1	0.7	15.3	10.7	15.9	13.6
LOS	C	A	C	A	B	B	B	B
Approach Delay		15.7				10.8		14.3
Approach LOS		B				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: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.36
 Intersection Signal Delay: 12.6
 Intersection Capacity Utilization 50.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

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



Queues
58: Humber Station Rd & Street Y

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	12	120	120	3	251	41	93
v/c Ratio	0.07	0.02	0.36	0.19	0.00	0.11	0.06	0.04
Control Delay	31.2	0.1	26.1	0.7	15.3	10.7	15.9	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.2	0.1	26.1	0.7	15.3	10.7	15.9	13.6
Queue Length 50th (m)	2.1	0.0	17.3	0.0	0.2	6.9	3.4	3.8
Queue Length 95th (m)	6.3	0.0	24.2	0.0	1.7	17.7	13.2	12.0
Internal Link Dist (m)		57.8			170.3		129.1	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	345	753	439	926	744	2207	692	2313
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	0.03	0.02	0.27	0.13	0.00	0.11	0.06	0.04

Intersection Summary

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

FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔		↔	↔	↔
Traffic Volume (vph)	12	0	12	120	0	120	3	210	41	41	92	1
Future Volume (vph)	12	0	12	120	0	120	3	210	41	41	92	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	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	0.95	1.00		1.00	0.95	
Frbp, ped/bikes	1.00	0.92		1.00	0.92	1.00	0.99	1.00		1.00	1.00	
Flpb, ped/bikes	0.93	1.00		0.97	1.00	0.90	1.00	0.95		0.95	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.98	1.00		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00	0.95		0.95	1.00	
Satd. Flow (prot)	1695	1500		1769	1500	1603	3455	1734		3639	3639	
Fit Permitted	0.76	1.00		0.52	1.00	0.69	1.00	0.60		1.00	1.00	
Satd. Flow (perm)	1351	1500		960	1500	1170	3455	1088		3639	3639	
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)	12	0	12	120	0	120	3	210	41	41	92	1
RTOR Reduction (vph)	0	11	0	0	0	89	0	11	0	0	0	0
Lane Group Flow (vph)	12	1	0	120	0	31	3	240	0	41	93	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt		Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8		2			6		6
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	8.8	8.8		23.1		23.1	54.9	54.9		54.9	54.9	
Effective Green, g (s)	8.8	8.8		23.1		23.1	54.9	54.9		54.9	54.9	
Actuated g/C Ratio	0.10	0.10		0.26		0.26	0.61	0.61		0.61	0.61	
Clearance Time (s)	6.0	6.0		4.0		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	
Lane Grp Cap (vph)	132	146		338		385	713	2107		663	2219	
v/s Ratio Prot		0.00		c0.04				c0.07			0.03	
v/s Ratio Perm	0.01			c0.05		0.02	0.00			0.04		
v/c Ratio	0.09	0.01		0.36		0.08	0.00	0.11		0.06	0.04	
Uniform Delay, d1	37.0	36.7		26.8		25.4	6.9	7.4		7.1	7.0	
Progression Factor	1.00	1.00		1.00		1.00	1.28	1.27		1.43	1.40	
Incremental Delay, d2	0.3	0.0		0.6		0.1	0.0	0.1		0.2	0.0	
Delay (s)	37.3	36.7		27.4		25.5	8.8	9.5		10.3	9.9	
Level of Service	D	D		C		C	A	A		B	A	
Approach Delay (s)		37.0			26.4			9.4			10.0	
Approach LOS		D			C			A			A	

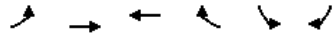
Intersection Summary

HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.19		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FB_Full Build-out 2041
Morning Peak Hour

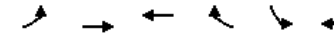


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	0	1921	1921	0	1921	0
Flt Permitted						
Satd. Flow (perm)	0	1921	1921	0	1921	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

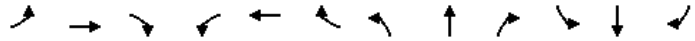
FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	24	4	0	0	0
Future Volume (vph)	0	24	4	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	24	4	0	0	0
Direction, Lane #						
	EB 1	WB 1	SB 1			
Volume Total (vph)	24	4	0			
Volume Left (vph)	0	0	0			
Volume Right (vph)	0	0	0			
Hadj (s)	0.00	0.00	0.00			
Departure Headway (s)	3.9	3.9	4.0			
Degree Utilization, x	0.03	0.00	0.00			
Capacity (veh/h)	915	912	900			
Control Delay (s)	7.0	6.9	7.0			
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

FB_Full Build-out 2041
Morning Peak Hour



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	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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour



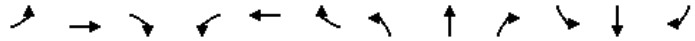
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	24	0	0	4	0	0	0	0	0	0	0
Future Volume (vph)	0	24	0	0	4	0	0	0	0	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	24	0	0	4	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	24	4	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.03	0.00	0.00	0.00								
Capacity (veh/h)	915	912	900	900								
Control Delay (s)	7.0	6.9	7.0	7.0								
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

FB_Full Build-out 2041
Morning Peak Hour



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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour



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	24	0	0	4	0	0	0	0	0	0	0
Future Volume (vph)	0	24	0	0	4	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	24	0	0	4	0	0	0	0	0	0	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	24	4	0	0
Volume Left (vph)	0	0	0	0
Volume Right (vph)	0	0	0	0
Hadj (s)	0.00	0.00	0.00	0.00
Departure Headway (s)	3.9	3.9	4.0	4.0
Degree Utilization, x	0.03	0.00	0.00	0.00
Capacity (veh/h)	915	912	900	900
Control Delay (s)	7.0	6.9	7.0	7.0
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
84: Street JJ & Street EE

FB_Full Build-out 2041
Morning Peak Hour



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	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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	14	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	14	0	0	2	0	0	0	0	0	0	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	14	0	0	2	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	51	100	100	107	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51	100	100	107	100	50	50			50		
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	98	100	100	100	100	100			100		
cM capacity (veh/h)	852	727	881	741	727	980	1490			1502		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	2	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	727	727	1700	1700
Volume to Capacity	0.02	0.00	0.00	0.00
Queue Length 95th (m)	0.5	0.1	0.0	0.0
Control Delay (s)	10.0	10.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	10.0	10.0	0.0	0.0
Approach LOS	B	A		

Intersection Summary

Average Delay	10.0
Intersection Capacity Utilization	29.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
85: Street I & Street EE

FB_Full Build-out 2041
Morning Peak Hour

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	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	1921	0	0	1921	0	0	1883	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1883	0	0	1921	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

FB_Full Build-out 2041
Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	0	14	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	14	0	0	2	0	0	0	0	0	0	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	14	0	0	2	0	0	0	0	0	0	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	101	100	100	107	100	100	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101	100	100	107	100	100	50			50		
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	98	100	100	100	100	100			100		
cM capacity (veh/h)	757	727	881	741	727	881	1490			1502		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	2	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	727	727	1700	1700								
Volume to Capacity	0.02	0.00	0.00	0.00								
Queue Length 95th (m)	0.5	0.1	0.0	0.0								
Control Delay (s)	10.0	10.0	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	10.0	10.0	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay				10.0								
Intersection Capacity Utilization			29.6%		ICU Level of Service					A		
Analysis Period (min)				15								

Lanes and Geometrics
88: Humber Station Rd & Street EE

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
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					0.998	
Flt Protected	0.950					
Satd. Flow (prot)	1825	0	0	3579	3636	0
Flt Permitted	0.950					
Satd. Flow (perm)	1825	0	0	3579	3636	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

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑↑	↑↑
Traffic Volume (vph)	14	268	140
Future Volume (vph)	14	268	140
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)	33.0	57.0	57.0
Total Split (%)	36.7%	63.3%	63.3%
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)	11.0	74.0	74.0
Actuated g/C Ratio	0.12	0.82	0.82
v/c Ratio	0.06	0.09	0.05
Control Delay	31.1	3.7	4.0
Queue Delay	0.0	0.0	0.0
Total Delay	31.1	3.7	4.0
LOS	C	A	A
Approach Delay	31.1	3.7	4.0
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.09
 Intersection Signal Delay: 4.7
 Intersection Capacity Utilization 30.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
88: Humber Station Rd & Street EE

FB_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	14	268	142
v/c Ratio	0.06	0.09	0.05
Control Delay	31.1	3.7	4.0
Queue Delay	0.0	0.0	0.0
Total Delay	31.1	3.7	4.0
Queue Length 50th (m)	2.4	4.0	1.7
Queue Length 95th (m)	7.0	12.7	8.0
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	547	2942	2989
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.03	0.09	0.05
Intersection Summary			

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

FB_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↓	
Traffic Volume (vph)	14	0	0	268	140	2
Future Volume (vph)	14	0	0	268	140	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	
Frbp, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1825			3579	3635	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1825			3579	3635	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	0	0	268	140	2
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	14	0	0	268	142	0
Confl. Peds. (#/hr)			50			50
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%
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)	178			2751	2794	
v/s Ratio Prot	c0.01			c0.07	0.04	
v/s Ratio Perm						
v/c Ratio	0.08			0.10	0.05	
Uniform Delay, d1	36.9			2.6	2.5	
Progression Factor	1.00			1.00	1.08	
Incremental Delay, d2	0.2			0.1	0.0	
Delay (s)	37.1			2.7	2.7	
Level of Service	D			A	A	
Approach Delay (s)	37.1			2.7	2.7	
Approach LOS	D			A	A	
Intersection Summary						
HCM 2000 Control Delay			3.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.10			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			30.0%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
1: The Gore Rd & King St

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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			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	0.99		0.94	0.90		0.97	0.97
Frt	0.946			0.991			0.940			0.968		
Flt Protected	0.950	0.950			0.950			0.950			0.950	
Satd. Flow (prot)	1562	1604	0	1681	1756	0	1535	1613	0	1681	1803	0
Flt Permitted	0.464	0.316			0.134			0.649			0.649	
Satd. Flow (perm)	719	1604	0	540	1756	0	216	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

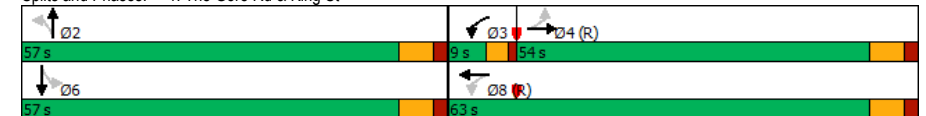
FB_Full Build-out_No Improvements 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	52	300	55	435	11	93	100	461
Future Volume (vph)	52	300	55	435	11	93	100	461
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA
Protected Phases	4		3	8	2		2	6
Permitted Phases	4		8	2		6		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)	54.6	54.6	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	0.14	0.26	0.27	0.88
Control Delay	24.9	30.5	15.7	21.7	27.7	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	24.9	30.5	15.7	21.7	27.7	20.4	27.3	50.4
LOS	C	C	B	C	C	C	C	D
Approach Delay	29.9		21.1		20.9		47.1	
Approach LOS	C		C		C		D	

Intersection Summary

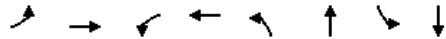
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 32.9
 Intersection Capacity Utilization 99.9%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
1: The Gore Rd & King St

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	52	471	55	462	11	155	100	586
v/c Ratio	0.16	0.63	0.15	0.50	0.14	0.26	0.27	0.88
Control Delay	24.9	30.5	15.7	21.7	27.7	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	24.9	30.5	15.7	21.7	27.7	20.4	27.3	50.4
Queue Length 50th (m)	7.8	87.1	6.2	71.3	1.8	19.8	16.8	127.9
Queue Length 95th (m)	18.0	132.9	14.2	111.5	6.2	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)	329	750	358	927	90	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	0.12	0.22	0.23	0.77

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
1: The Gore Rd & King St

Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	300	171	55	435	27	11	93	62	100	461	125
Future Volume (vph)	52	300	171	55	435	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	
Frbp, ped/bikes	1.00	0.95		1.00	0.99		1.00	0.94		1.00	0.97	
Frbp, 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)	1467	1603		1664	1756		1535	1613		1514	1803	
Flt Permitted	0.46	1.00		0.32	1.00		0.13	1.00		0.65	1.00	
Satd. Flow (perm)	717	1603		553	1756		217	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	55	435	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	55	460	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%	15%	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		78	584		375	653	
v/s Ratio Prot		c0.28		0.01	c0.26			0.08			c0.32	
v/s Ratio Perm	0.07			0.08			0.05			0.10		
v/c Ratio	0.16	0.63		0.16	0.50		0.14	0.23		0.27	0.88	
Uniform Delay, d1	19.6	25.4		15.8	18.2		25.7	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		0.8	0.2		0.4	13.5	
Delay (s)	20.7	29.6		16.0	20.1		26.5	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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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			0.979	
Flt Protected		0.995			0.994			0.995			0.994	
Satd. Flow (prot)	0	1695	0	0	1779	0	0	1652	0	0	1614	0
Flt Permitted		0.883			0.884			0.960			0.951	
Satd. Flow (perm)	0	1498	0	0	1573	0	0	1580	0	0	1529	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			8			6			9	
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

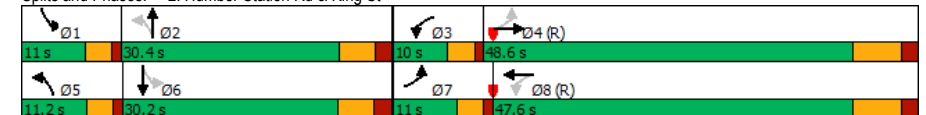
FB_Full Build-out_No Improvements 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	57	384	73	503	17	138	17	101
Future Volume (vph)	57	384	73	503	17	138	17	101
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)		67.9		67.9		18.7		18.5
Actuated g/C Ratio		0.68		0.68		0.19		0.18
v/c Ratio		0.53		0.60		0.58		0.48
Control Delay		11.0		12.6		43.0		38.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		11.0		12.6		43.0		38.9
LOS		B		B		D		D
Approach Delay		11.0		12.6		43.0		38.9
Approach LOS		B		B		D		D

Intersection Summary

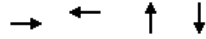
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.60
 Intersection Signal Delay: 18.0
 Intersection Capacity Utilization 77.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

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



Queues
2: Humber Station Rd & King St

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

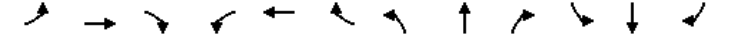


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	544	647	173	140
v/c Ratio	0.53	0.60	0.58	0.48
Control Delay	11.0	12.6	43.0	38.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.0	12.6	43.0	38.9
Queue Length 50th (m)	41.9	54.8	32.2	24.7
Queue Length 95th (m)	88.2	114.0	49.4	40.1
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1022	1071	390	373
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	0.38

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
2: Humber Station Rd & King St

Morning Peak Hour



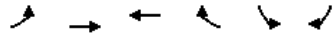
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	57	384	103	73	503	71	17	138	18	17	101	22
Future Volume (vph)	57	384	103	73	503	71	17	138	18	17	101	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	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			1640			1600	
Flt Permitted		0.88			0.88			0.96			0.95	
Satd. Flow (perm)		1499			1575			1581			1531	
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)	57	384	103	73	503	71	17	138	18	17	101	22
RTOR Reduction (vph)	0	5	0	0	3	0	0	5	0	0	7	0
Lane Group Flow (vph)	0	539	0	0	644	0	0	168	0	0	133	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)		67.9			67.9			18.7			18.5	
Effective Green, g (s)		67.9			67.9			18.7			18.5	
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)		1017			1069			295			283	
v/s Ratio Prot												
v/s Ratio Perm		0.36			0.41			0.11			0.09	
v/c Ratio		0.53			0.60			0.57			0.47	
Uniform Delay, d1		8.0			8.7			37.0			36.4	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.5			1.0			2.5			1.2	
Delay (s)		8.6			9.7			39.5			37.6	
Level of Service		A			A			D			D	
Approach Delay (s)		8.6			9.7			39.5			37.6	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	15.3	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	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



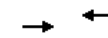
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

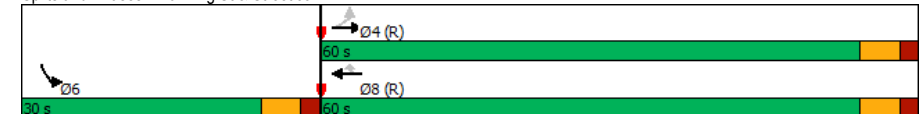


Lane Group	EBT	WBT	Ø6
Lane Configurations	↑	↑	
Traffic Volume (vph)	488	533	
Future Volume (vph)	488	533	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	33%
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	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.36	0.39	
Control Delay	7.2	8.8	
Queue Delay	0.0	0.0	
Total Delay	7.2	8.8	
LOS	A	A	
Approach Delay	7.2	8.8	
Approach LOS	A	A	

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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 8.0
 Intersection Capacity Utilization 55.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

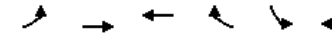


Lane Group	EBT	WBT
Lane Group Flow (vph)	488	533
v/c Ratio	0.36	0.39
Control Delay	7.2	8.8
Queue Delay	0.0	0.0
Total Delay	7.2	8.8
Queue Length 50th (m)	16.7	42.4
Queue Length 95th (m)	64.9	107.7
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1361	1361
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.36	0.39

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
6: King St & Street JJ

Morning Peak Hour

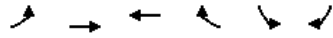


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	488	533	0	0	0
Future Volume (vph)	0	488	533	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Flpb, ped/bikes		1.00	1.00			
Fr t		1.00	1.00			
Fl t Protected		1.00	1.00			
Satd. Flow (prot)		1883	1883			
Fl 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	488	533	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	488	533	0	0	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)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		1362	1362			
v/s Ratio Prot		0.26	0.28			
v/s Ratio Perm						
v/c Ratio		0.36	0.39			
Uniform Delay, d1		4.6	4.8			
Progression Factor		1.00	1.19			
Incremental Delay, d2		0.7	0.8			
Delay (s)		5.4	6.5			
Level of Service		A	A			
Approach Delay (s)		5.4	6.5		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			6.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			55.1%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBT	WBT	Ø6
Lane Configurations	↑	↑	
Traffic Volume (vph)	488	533	
Future Volume (vph)	488	533	
Turn Type	NA	NA	
Protected Phases	4	8	6
Permitted Phases			
Detector Phase	4	8	
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0
Total Split (s)	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	33%
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	Min
Act Effct Green (s)	65.1	65.1	
Actuated g/C Ratio	0.72	0.72	
v/c Ratio	0.36	0.39	
Control Delay	15.6	7.6	
Queue Delay	0.0	0.0	
Total Delay	15.6	7.6	
LOS	B	A	
Approach Delay	15.6	7.6	
Approach LOS	B	A	

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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.39
 Intersection Signal Delay: 11.4
 Intersection Capacity Utilization 55.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

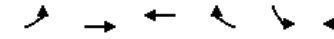


Lane Group	EBT	WBT
Lane Group Flow (vph)	488	533
v/c Ratio	0.36	0.39
Control Delay	15.6	7.6
Queue Delay	0.0	0.0
Total Delay	15.6	7.6
Queue Length 50th (m)	16.7	18.9
Queue Length 95th (m)	127.6	72.8
Internal Link Dist (m)	276.5	305.7
Turn Bay Length (m)		
Base Capacity (vph)	1361	1361
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.36	0.39

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
7: King St & Street I

Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↑	↔	↔	↔
Traffic Volume (vph)	0	488	533	0	0	0
Future Volume (vph)	0	488	533	0	0	0
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			
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	488	533	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	488	533	0	0	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)		65.1	65.1			
Effective Green, g (s)		65.1	65.1			
Actuated g/C Ratio		0.72	0.72			
Clearance Time (s)		6.0	6.0			
Vehicle Extension (s)		3.0	3.0			
Lane Grp Cap (vph)		1362	1362			
v/s Ratio Prot		0.26	0.28			
v/s Ratio Perm						
v/c Ratio		0.36	0.39			
Uniform Delay, d1		4.6	4.8			
Progression Factor		2.30	1.00			
Incremental Delay, d2		0.7	0.8			
Delay (s)		11.4	5.7			
Level of Service		B	A			
Approach Delay (s)		11.4	5.7		0.0	
Approach LOS		B	A		A	
Intersection Summary						
HCM 2000 Control Delay			8.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			55.1%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

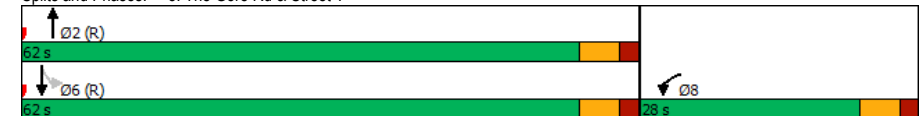
Lane Group	WBL	NBT	SBT
Lane Configurations	↔	↑	↑
Traffic Volume (vph)	1	202	788
Future Volume (vph)	1	202	788
Turn Type	Prot	NA	NA
Protected Phases	8	2	6
Permitted Phases			
Detector Phase	8	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	28.0	25.0	25.0
Total Split (s)	28.0	62.0	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 Capacity Utilization 67.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
8: The Gore Rd & Street Y

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↑	↓
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 FB_Full Build-out_No Improvements 2041
8: The Gore Rd & Street Y Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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
9: The Gore Rd & Street DDD

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	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

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	202	0	0	788
Future Volume (Veh/h)	0	0	202	0	0	788
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	0	202	0	0	788
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	0.79					
vC, conflicting volume	1090	302			252	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	978	302			252	
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	100			100	
cM capacity (veh/h)	200	676			1257	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	0	202	788			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.12	0.46			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			59.6%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↙
Traffic Volume (vph)	0	202	27	788
Future Volume (vph)	0	202	27	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

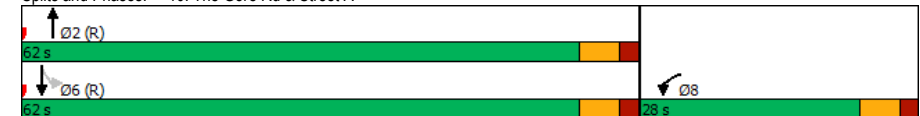
Lead-Lag Optimize?

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 Capacity Utilization 67.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	7	202	27	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	4.8	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 FB_Full Build-out_No Improvements 2041
10: The Gore Rd & Street A Morning Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↓
Traffic Volume (vph)	0	7	202	0	27	788
Future Volume (vph)	0	7	202	0	27	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	27	788
RTOR Reduction (vph)	6	0	0	0	0	0
Lane Group Flow (vph)	1	0	202	0	27	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

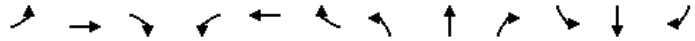
Intersection Summary

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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



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	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												
Fr												
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 FB_Full Build-out_No Improvements 2041
12: Street VV & Street A

Morning Peak Hour



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	48	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	48	0	0	11	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	48	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	11	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	0.05	0.01	0.00	0.00								
Capacity (veh/h)	906	898	886	886								
Control Delay (s)	7.2	7.0	7.0	7.0								
Approach Delay (s)	7.2	7.0	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.1
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	48	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	48	0	0	11	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	48	0	0	11	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	11	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	0.05	0.01	0.00	0.00								
Capacity (veh/h)	906	898	886	886								
Control Delay (s)	7.2	7.0	7.0	7.0								
Approach Delay (s)	7.2	7.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.1								
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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	48	0	0	11	0	0	0	0	0	0	0
Future Volume (vph)	0	48	0	0	11	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	48	0	0	11	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	48	11	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	0.05	0.01	0.00	0.00								
Capacity (veh/h)	906	898	886	886								
Control Delay (s)	7.2	7.0	7.0	7.0								
Approach Delay (s)	7.2	7.0	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay					7.1							
Level of Service					A							
Intersection Capacity Utilization					29.6%			ICU Level of Service			A	
Analysis Period (min)					15							

Lanes and Geometrics

FB_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Morning Peak Hour



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		0.994			0.971			0.996				
Flt Protected								0.996			0.994	
Satd. Flow (prot)	0	1872	0	0	1829	0	0	1868	0	0	1872	0
Flt Permitted								0.996			0.994	
Satd. Flow (perm)	0	1872	0	0	1829	0	0	1868	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 FB_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Morning Peak Hour



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	46	2	0	11	3	3	30	1	11	87	0
Future Volume (vph)	0	46	2	0	11	3	3	30	1	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	46	2	0	11	3	3	30	1	11	87	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	48	14	34	98								
Volume Left (vph)	0	0	3	11								
Volume Right (vph)	2	3	1	0								
Hadj (s)	0.01	-0.09	0.03	0.06								
Departure Headway (s)	4.2	4.1	4.2	4.1								
Degree Utilization, x	0.06	0.02	0.04	0.11								
Capacity (veh/h)	825	835	836	855								
Control Delay (s)	7.5	7.2	7.3	7.6								
Approach Delay (s)	7.5	7.2	7.3	7.6								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.5
Level of Service	A
Intersection Capacity Utilization	30.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
48: Humber Station Rd & Street E

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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									0.850			
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)									311			
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

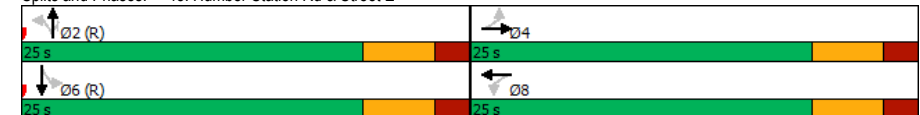
FB_Full Build-out_No Improvements 2041
Morning Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↔	↔	↔	
Traffic Volume (vph)	46	0	31	311	89	
Future Volume (vph)	46	0	31	311	89	
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		0.09	0.04	0.39	0.12	
Control Delay		10.5	10.1	3.3	10.7	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		10.5	10.1	3.3	10.7	
LOS		B	B	A	B	
Approach Delay		10.5	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: 0.39
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 24.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	46	31	311	89
v/c Ratio	0.09	0.04	0.39	0.12
Control Delay	10.5	10.1	3.3	10.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.5	10.1	3.3	10.7
Queue Length 50th (m)	2.6	1.7	0.0	5.1
Queue Length 95th (m)	7.7	5.7	11.8	12.2
Internal Link Dist (m)	185.7	130.4		336.1
Turn Bay Length (m)				
Base Capacity (vph)	541	715	801	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	0.09	0.04	0.39	0.12

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
48: Humber Station Rd & Street E Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	0	46	0	0	0	31	311	0	89	0
Future Volume (vph)	0	0	0	46	0	0	0	31	311	0	89	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	
Fr't					1.00			1.00	0.85		1.00	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1789			1883	1601		1883	
Fit 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	46	0	0	0	31	311	0	89	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	193	0	0	0
Lane Group Flow (vph)	0	0	0	0	46	0	0	31	118	0	89	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					0.09			0.04	0.19		0.12	
Uniform Delay, d1					9.9			9.8	10.4		10.1	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					0.3			0.1	0.7		0.4	
Delay (s)					10.2			9.9	11.1		10.4	
Level of Service					B			A	B		B	
Approach Delay (s)		0.0			10.2			11.0			10.4	
Approach LOS		A			B			B			B	

Intersection Summary

HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	24.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

FB_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

Morning Peak Hour

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	0.90		0.99		0.95	1.00
Frt	0.850			0.850			0.975			0.998		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1383	0	1789	1883	1601	1789	1812	0	1789	1877	0
Flt Permitted	0.757			0.750			0.697			0.603		
Satd. Flow (perm)	1324	1383	0	1248	1883	1470	1176	1812	0	1081	1877	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		645				464		15				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

FB_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

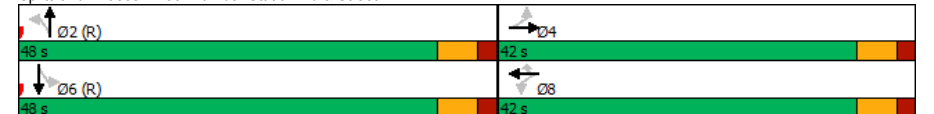
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	0	120	120	3	210	41	92
Future Volume (vph)	12	0	120	120	3	210	41	92
Turn Type	Perm	NA	Perm	Perm	Perm	NA	Perm	NA
Protected Phases	4		8		2		6	
Permitted Phases	4		8	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	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
Total Split (s)	42.0	42.0	42.0	42.0	48.0	48.0	48.0	48.0
Total Split (%)	46.7%	46.7%	46.7%	46.7%	53.3%	53.3%	53.3%	53.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
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)	6.0	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	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	14.0	14.0	14.0	14.0	64.0	64.0	64.0	64.0
Actuated g/C Ratio	0.16	0.16	0.16	0.16	0.71	0.71	0.71	0.71
v/c Ratio	0.06	0.02	0.62	0.19	0.00	0.19	0.05	0.07
Control Delay	29.9	0.0	48.4	0.7	5.3	4.9	5.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	0.0	48.4	0.7	5.3	4.9	5.3	5.0
LOS	C	A	D	A	A	A	A	A
Approach Delay	15.0			4.9			5.1	
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: 0.62
 Intersection Signal Delay: 12.5 Intersection LOS: B
 Intersection Capacity Utilization 50.4% 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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	12	12	120	120	3	251	41	93
v/c Ratio	0.06	0.02	0.62	0.19	0.00	0.19	0.05	0.07
Control Delay	29.9	0.0	48.4	0.7	5.3	4.9	5.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	0.0	48.4	0.7	5.3	4.9	5.3	5.0
Queue Length 50th (m)	1.9	0.0	20.4	0.0	0.2	11.3	1.9	4.3
Queue Length 95th (m)	6.2	0.0	35.6	0.0	m0.9	24.2	6.1	11.0
Internal Link Dist (m)		57.8				170.3		130.4
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	529	940	499	866	836	1292	768	1334
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	0.02	0.01	0.24	0.14	0.00	0.19	0.05	0.07

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
58: Humber Station Rd & Street Y Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	12	0	12	120	0	120	3	210	41	41	92	1
Future Volume (vph)	12	0	12	120	0	120	3	210	41	41	92	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	6.0	
Lane Util. Factor	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.86		1.00		0.92	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.93	1.00		0.88		1.00	0.90	1.00		0.95	1.00	
Frt	1.00	0.85		1.00		0.85	1.00	0.98		1.00	1.00	
Fit Protected	0.95	1.00		0.95		1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1662	1383		1581		1470	1603	1813		1700	1878	
Fit Permitted	0.76	1.00		0.75		1.00	0.70	1.00		0.60	1.00	
Satd. Flow (perm)	1325	1383		1248		1470	1176	1813		1080	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)	12	0	12	120	0	120	3	210	41	41	92	1
RTOR Reduction (vph)	0	10	0	0	0	101	0	4	0	0	0	0
Lane Group Flow (vph)	12	2	0	120	0	19	3	247	0	41	93	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)	14.0	14.0		14.0		14.0	64.0	64.0		64.0	64.0	
Effective Green, g (s)	14.0	14.0		14.0		14.0	64.0	64.0		64.0	64.0	
Actuated g/C Ratio	0.16	0.16		0.16		0.16	0.71	0.71		0.71	0.71	
Clearance Time (s)	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	
Lane Grp Cap (vph)	206	215		194		228	836	1289		768	1335	
v/s Ratio Prot		0.00						c0.14			0.05	
v/s Ratio Perm	0.01			c0.10		0.01	0.00			0.04		
v/c Ratio	0.06	0.01		0.62		0.08	0.00	0.19		0.05	0.07	
Uniform Delay, d1	32.4	32.1		35.5		32.5	3.8	4.3		3.9	4.0	
Progression Factor	1.00	1.00		1.00		1.00	1.00	0.95		1.00	1.00	
Incremental Delay, d2	0.1	0.0		5.8		0.2	0.0	0.3		0.1	0.1	
Delay (s)	32.5	32.1		41.3		32.7	3.8	4.5		4.0	4.1	
Level of Service	C	C		D		C	A	A		A	A	
Approach Delay (s)		32.3			37.0			4.4			4.0	
Approach LOS		C			D			A			A	

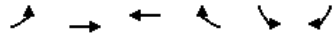
Intersection Summary

HCM 2000 Control Delay	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

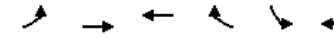


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
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 FB_Full Build-out_No Improvements 2041
62: Street Y & Street VV

Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	24	4	0	0	0
Future Volume (vph)	0	24	4	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	24	4	0	0	0
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	24	4	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	4.0	4.0			
Degree Utilization, x	0.03	0.00	0.00			
Capacity (veh/h)	907	904	900			
Control Delay (s)	7.0	7.0	7.0			
Approach Delay (s)	7.0	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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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	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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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	24	0	0	4	0	0	0	0	0	0	0
Future Volume (vph)	0	24	0	0	4	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	24	0	0	4	0	0	0	0	0	0	0
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	24	4	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	0.00	0.00	0.00								
Capacity (veh/h)	907	904	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		6.7%	ICU Level of Service		A							
Analysis Period (min)		15										

Lanes and Geometrics
65: Street I & Street Y

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

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	24	0	0	4	0	0	0	0	0	0	0
Future Volume (vph)	0	24	0	0	4	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	24	0	0	4	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	24	4	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	0.00	0.00	0.00								
Capacity (veh/h)	907	904	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
84: Street JJ & Street EE

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



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	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												
Fr												
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)		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 FB_Full Build-out_No Improvements 2041
84: Street JJ & Street EE

Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	14	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	14	0	0	2	0	0	0	0	0	0	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	14	0	0	2	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	51	100	100	107	100	50	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	51	100	100	107	100	50	50			50		
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	98	100	100	100	100	100			100		
cM capacity (veh/h)	848	724	875	737	724	975	1490			1490		
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	2	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	724	724	1700	1700								
Volume to Capacity	0.02	0.00	0.00	0.00								
Queue Length 95th (m)	0.5	0.1	0.0	0.0								
Control Delay (s)	10.1	10.0	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	10.1	10.0	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay				10.1								
Intersection Capacity Utilization			29.6%		ICU Level of Service					A		
Analysis Period (min)				15								

Lanes and Geometrics
85: Street I & Street EE

FB_Full Build-out_No Improvements 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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)		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 FB_Full Build-out_No Improvements 2041
85: Street I & Street EE

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	14	0	0	2	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	14	0	0	2	0	0	0	0	0	0	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	14	0	0	2	0	0	0	0	0	0	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	101	100	100	107	100	100	50				50	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101	100	100	107	100	100	50				50	
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	98	100	100	100	100	100				100	
cM capacity (veh/h)	753	724	875	737	724	875	1490				1490	
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	14	2	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	724	724	1700	1700								
Volume to Capacity	0.02	0.00	0.00	0.00								
Queue Length 95th (m)	0.5	0.1	0.0	0.0								
Control Delay (s)	10.1	10.0	0.0	0.0								
Lane LOS	B	A										
Approach Delay (s)	10.1	10.0	0.0	0.0								
Approach LOS	B	A										
Intersection Summary												
Average Delay				10.1								
Intersection Capacity Utilization			29.6%		ICU Level of Service						A	
Analysis Period (min)				15								

Lanes and Geometrics
88: Humber Station Rd & Street EE

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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					0.998	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1876	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1876	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					1	
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

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑	↑
Traffic Volume (vph)	14	268	140
Future Volume (vph)	14	268	140
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)	29.0	61.0	61.0
Total Split (%)	32.2%	67.8%	67.8%
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)	11.0	74.0	74.0
Actuated g/C Ratio	0.12	0.82	0.82
v/c Ratio	0.06	0.17	0.09
Control Delay	31.1	4.2	4.3
Queue Delay	0.0	0.0	0.0
Total Delay	31.1	4.2	4.3
LOS	C	A	A
Approach Delay	31.1	4.2	4.3
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.17
 Intersection Signal Delay: 5.2
 Intersection Capacity Utilization 30.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
88: Humber Station Rd & Street EE

FB_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	14	268	142
v/c Ratio	0.06	0.17	0.09
Control Delay	31.1	4.2	4.3
Queue Delay	0.0	0.0	0.0
Total Delay	31.1	4.2	4.3
Queue Length 50th (m)	2.4	8.3	3.0
Queue Length 95th (m)	7.0	27.4	19.7
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	457	1548	1542
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.03	0.17	0.09
Intersection Summary			

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
88: Humber Station Rd & Street EE

Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			U	U	
Traffic Volume (vph)	14	0	0	268	140	2
Future Volume (vph)	14	0	0	268	140	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	
Frbp, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			1883	1876	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			1883	1876	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	0	0	268	140	2
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	14	0	0	268	142	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	1442	
v/s Ratio Prot	c0.01			c0.14	0.08	
v/s Ratio Perm						
v/c Ratio	0.08			0.19	0.10	
Uniform Delay, d1	36.9			2.8	2.6	
Progression Factor	1.00			1.00	1.07	
Incremental Delay, d2	0.2			0.3	0.1	
Delay (s)	37.1			3.1	2.9	
Level of Service	D			A	A	
Approach Delay (s)	37.1			3.1	2.9	
Approach LOS	D			A	A	
Intersection Summary						
HCM 2000 Control Delay			4.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.17			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			30.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics
1: The Gore Rd & King St

FB_Full Build-out 2041
Afternoon Peak Hour

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)	1730	3476	1555	1713	3476	1617	1765	3614	1601	1765	3579	1570
Flt Permitted	0.431			0.495			0.644			0.287		
Satd. Flow (perm)	748	3476	1334	833	3476	1386	1126	3614	1464	515	3579	1436
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			69		105		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

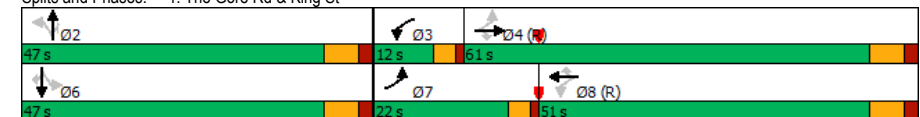
FB_Full Build-out 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	444	20	52	515	101	57	465	41	38	171	58
Future Volume (vph)	148	444	20	52	515	101	57	465	41	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)	22.0	61.0	61.0	12.0	51.0	51.0	47.0	47.0	47.0	47.0	47.0	47.0
Total Split (%)	18.3%	50.8%	50.8%	10.0%	42.5%	42.5%	39.2%	39.2%	39.2%	39.2%	39.2%	39.2%
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)	86.4	76.4	76.4	81.5	72.4	72.4	21.7	21.7	21.7	21.7	21.7	21.7
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	0.24	0.20	0.02	0.08	0.25	0.12	0.28	0.71	0.12	0.41	0.26	0.17
Control Delay	6.2	10.3	0.1	5.7	12.1	2.6	45.0	52.3	0.7	52.1	40.2	1.3
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	6.2	10.3	0.1	5.7	12.1	2.6	45.0	52.3	0.7	52.1	40.2	1.3
LOS	A	B	A	A	B	A	D	D	A	D	D	A
Approach Delay		9.0			10.2			47.8			33.4	
Approach LOS		A			B			D			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 90 (75%), 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: 22.8
 Intersection Capacity Utilization 82.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
1: The Gore Rd & King St

FB_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Group Flow (vph)	148	444	20	52	515	101	57	465	41	38	171	58	
v/c Ratio	0.24	0.20	0.02	0.08	0.25	0.12	0.28	0.71	0.12	0.41	0.26	0.17	
Control Delay	6.2	10.3	0.1	5.7	12.1	2.6	45.0	52.3	0.7	52.1	40.2	1.3	
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	6.2	10.3	0.1	5.7	12.1	2.6	45.0	52.3	0.7	52.1	40.2	1.3	
Queue Length 50th (m)	9.1	22.5	0.0	3.0	28.2	0.0	12.3	57.4	0.0	8.4	19.4	0.2	
Queue Length 95th (m)	18.4	36.0	0.0	7.7	45.1	7.7	24.1	71.5	0.0	13.1	20.9	1.0	
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)	693	2213	874	634	2097	877	379	1216	562	173	1204	553	
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	0.21	0.20	0.02	0.08	0.25	0.12	0.15	0.38	0.07	0.22	0.14	0.10	

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	444	20	52	515	101	57	465	41	38	171	58
Future Volume (vph)	148	444	20	52	515	101	57	465	41	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)	1692	3476	1334	1659	3476	1386	1661	3614	1464	1708	3579	1436
Flt Permitted	0.43	1.00	1.00	0.49	1.00	1.00	0.64	1.00	1.00	0.29	1.00	1.00
Satd. Flow (perm)	767	3476	1334	864	3476	1386	1125	3614	1464	516	3579	1436
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	444	20	52	515	101	57	465	41	38	171	58
RTOR Reduction (vph)	0	0	7	0	0	40	0	34	0	0	48	0
Lane Group Flow (vph)	148	444	13	52	515	61	57	465	7	38	171	10
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	5%	5%	3%	5%	1%	0%	1%	2%	0%	2%	4%
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)	84.4	75.7	75.7	77.8	72.4	72.4	21.7	21.7	21.7	21.7	21.7	21.7
Effective Green, g (s)	84.4	75.7	75.7	77.8	72.4	72.4	21.7	21.7	21.7	21.7	21.7	21.7
Actuated g/C Ratio	0.70	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)	606	2192	841	595	2097	836	203	653	264	93	647	259
v/s Ratio Prot	c0.02	0.13		0.00	0.15			c0.13			0.05	
v/s Ratio Perm	c0.15		0.01	0.05		0.04	0.05		0.01	0.07		0.01
v/c Ratio	0.24	0.20	0.02	0.09	0.25	0.07	0.28	0.71	0.03	0.41	0.26	0.04
Uniform Delay, d1	5.9	9.4	8.3	7.7	11.1	9.9	42.4	46.2	40.5	43.5	42.3	40.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.94	0.38
Incremental Delay, d2	0.2	0.2	0.0	0.1	0.3	0.2	0.8	3.7	0.0	2.9	0.2	0.1
Delay (s)	6.1	9.6	8.3	7.7	11.4	10.0	43.2	49.9	40.5	42.3	40.1	15.7
Level of Service	A	A	A	A	B	B	D	D	D	D	D	B
Approach Delay (s)	8.7			10.9				48.5			35.1	
Approach LOS	A			B				D			D	

Intersection Summary

HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.35		
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

FB_Full Build-out 2041

2: Humber Station Rd & King St

Afternoon Peak Hour

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	0.94		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)	1713	3544	1555	1379	3476	1541	1697	3579	1498	1713	3579	1601
Flt Permitted	0.401			0.454			0.504			0.678		
Satd. Flow (perm)	703	3544	1422	635	3476	1409	851	3579	1285	1093	3579	1464
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			65			120			131			131
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

FB_Full Build-out 2041

2: Humber Station Rd & King St

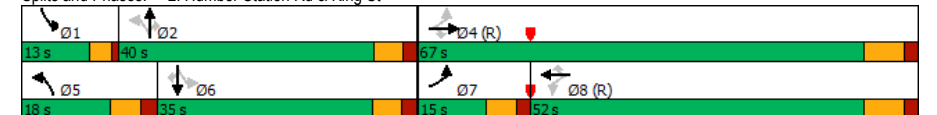
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	25	533	24	18	518	56	71	117	68	14	140	58
Future Volume (vph)	25	533	24	18	518	56	71	117	68	14	140	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)	15.0	67.0	67.0	52.0	52.0	52.0	18.0	40.0	40.0	13.0	35.0	35.0
Total Split (%)	12.5%	55.8%	55.8%	43.3%	43.3%	43.3%	15.0%	33.3%	33.3%	10.8%	29.2%	29.2%
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)	76.3	74.9	74.9	67.2	67.2	67.2	31.5	27.3	27.3	25.6	18.2	18.2
Actuated g/C Ratio	0.64	0.62	0.62	0.56	0.56	0.56	0.26	0.23	0.23	0.21	0.15	0.15
v/c Ratio	0.05	0.24	0.03	0.05	0.27	0.07	0.24	0.14	0.17	0.05	0.26	0.17
Control Delay	11.4	11.8	0.0	19.2	17.1	0.2	32.5	35.8	1.0	26.9	45.0	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	11.4	11.8	0.0	19.2	17.1	0.2	32.5	35.8	1.0	26.9	45.0	1.1
LOS	B	B	A	B	B	A	C	D	A	C	D	A
Approach Delay		11.3			15.6			25.6			31.8	
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: 0.27
 Intersection Signal Delay: 17.7
 Intersection Capacity Utilization 60.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

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



Queues
2: Humber Station Rd & King St

FB_Full Build-out 2041
Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	25	533	24	18	518	56	71	117	68	14	140	58
v/c Ratio	0.05	0.24	0.03	0.05	0.27	0.07	0.24	0.14	0.17	0.05	0.26	0.17
Control Delay	11.4	11.8	0.0	19.2	17.1	0.2	32.5	35.8	1.0	26.9	45.0	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	11.4	11.8	0.0	19.2	17.1	0.2	32.5	35.8	1.0	26.9	45.0	1.1
Queue Length 50th (m)	2.1	27.7	0.0	2.0	35.4	0.0	13.5	11.6	0.0	2.5	16.7	0.0
Queue Length 95th (m)	7.0	47.7	0.0	7.6	58.8	0.0	22.4	19.4	0.0	6.7	24.6	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)	522	2211	911	355	1947	842	307	1014	457	298	858	450
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	0.05	0.24	0.03	0.05	0.27	0.07	0.23	0.12	0.15	0.05	0.16	0.13

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour

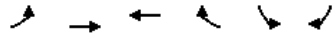
	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	25	533	24	18	518	56	71	117	68	14	140	58
Future Volume (vph)	25	533	24	18	518	56	71	117	68	14	140	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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)	1695	3544	1422	1329	3476	1409	1653	3579	1285	1593	3579	1464
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)	715	3544	1422	635	3476	1409	877	3579	1285	1137	3579	1464
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)	25	533	24	18	518	56	71	117	68	14	140	58
RTOR Reduction (vph)	0	0	10	0	0	27	0	0	53	0	0	49
Lane Group Flow (vph)	25	533	15	18	518	29	71	117	15	14	140	9
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	3%	3%	5%	28%	5%	6%	4%	2%	9%	3%	2%	2%
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)	72.5	72.5	72.5	62.5	62.5	62.5	34.1	27.3	27.3	22.2	19.4	19.4
Effective Green, g (s)	72.5	72.5	72.5	62.5	62.5	62.5	34.1	27.3	27.3	22.2	19.4	19.4
Actuated g/C Ratio	0.60	0.60	0.60	0.52	0.52	0.52	0.28	0.23	0.23	0.18	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)	464	2141	859	330	1810	733	302	814	292	220	578	236
v/s Ratio Prot	0.00	c0.15			c0.15		c0.02	0.03		0.00	0.04	
v/s Ratio Perm	0.03		0.01	0.03		0.02	c0.05		0.01	0.01		0.01
v/c Ratio	0.05	0.25	0.02	0.05	0.29	0.04	0.24	0.14	0.05	0.06	0.24	0.04
Uniform Delay, d1	9.9	11.1	9.5	14.2	16.2	14.1	32.3	37.0	36.2	40.2	43.9	42.4
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	0.0	0.3	0.0	0.3	0.4	0.1	0.4	0.1	0.1	0.1	0.2	0.1
Delay (s)	9.9	11.3	9.5	14.5	16.6	14.2	32.7	37.1	36.3	40.3	44.1	42.5
Level of Service	A	B	A	B	B	B	C	D	D	D	D	D
Approach Delay (s)		11.2			16.3			35.7			43.4	
Approach LOS		B			B			D			D	

Intersection Summary

HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.29		
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
6: King St & Street JJ

FB_Full Build-out 2041
Afternoon Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	3650	3650	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	3650	3650	1921	1921	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out 2041
Afternoon Peak Hour

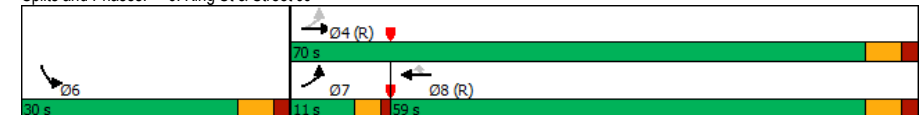


Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↕↕	↕↕		
Traffic Volume (vph)	537	690		
Future Volume (vph)	537	690		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.17	0.22		
Control Delay	4.0	3.1		
Queue Delay	0.0	0.0		
Total Delay	4.0	3.1		
LOS	A	A		
Approach Delay	4.0	3.1		
Approach LOS	A	A		

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: 0.22
 Intersection Signal Delay: 3.5
 Intersection Capacity Utilization 46.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FB_Full Build-out 2041
Afternoon Peak Hour

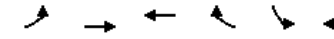


Lane Group	EBT	WBT
Lane Group Flow (vph)	537	690
v/c Ratio	0.17	0.22
Control Delay	4.0	3.1
Queue Delay	0.0	0.0
Total Delay	4.0	3.1
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	29.4	21.3
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	3124	3124
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.17	0.22

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour



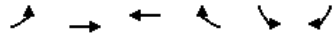
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	0	537	690	0	0	0
Future Volume (vph)	0	537	690	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.4	3.7	3.7	3.7	3.7	3.7
Total Lost time (s)		6.0	6.0			
Lane Util. Factor		0.95	0.95			
Frpb, ped/bikes		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Fr t		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		3650	3650			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		3650	3650			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	537	690	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	537	690	0	0	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		2861	2861			
v/s Ratio Prot		0.15	c0.19			
v/s Ratio Perm						
v/c Ratio		0.19	0.24			
Uniform Delay, d1		2.7	2.9			
Progression Factor		1.00	0.71			
Incremental Delay, d2		0.1	0.2			
Delay (s)		2.9	2.3			
Level of Service		A	A			
Approach Delay (s)		2.9	2.3		0.0	
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	0.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

FB_Full Build-out 2041
Afternoon Peak Hour



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						
Frt						
Flt Protected						
Satd. Flow (prot)	1858	3650	3650	1921	1921	0
Flt Permitted						
Satd. Flow (perm)	1858	3650	3650	1921	1921	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out 2041
Afternoon Peak Hour

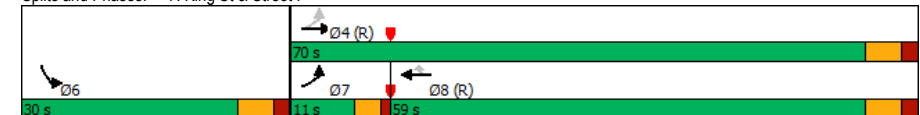


Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↑↑	↑↑		
Traffic Volume (vph)	537	690		
Future Volume (vph)	537	690		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.17	0.22		
Control Delay	3.0	4.2		
Queue Delay	0.0	0.0		
Total Delay	3.0	4.2		
LOS	A	A		
Approach Delay	3.0	4.2		
Approach LOS	A	A		

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: 0.22
 Intersection Signal Delay: 3.7
 Intersection Capacity Utilization 46.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FB_Full Build-out 2041
Afternoon Peak Hour

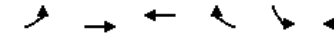


Lane Group	EBT	WBT
Lane Group Flow (vph)	537	690
v/c Ratio	0.17	0.22
Control Delay	3.0	4.2
Queue Delay	0.0	0.0
Total Delay	3.0	4.2
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	17.2	38.6
Internal Link Dist (m)	276.5	305.7
Turn Bay Length (m)		
Base Capacity (vph)	3124	3124
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.17	0.22

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↗
Traffic Volume (vph)	0	537	690	0	0	0
Future Volume (vph)	0	537	690	0	0	0
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			
Lane Util. Factor		0.95	0.95			
Frpb, ped/bikes		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Frnt		1.00	1.00			
Flt Protected		1.00	1.00			
Satd. Flow (prot)		3650	3650			
Flt Permitted		1.00	1.00			
Satd. Flow (perm)		3650	3650			
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	537	690	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	537	690	0	0	0
Confl. Peds. (#/hr)		50		50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		2861	2861			
v/s Ratio Prot		0.15	c0.19			
v/s Ratio Perm						
v/c Ratio		0.19	0.24			
Uniform Delay, d1		2.7	2.9			
Progression Factor		0.74	1.00			
Incremental Delay, d2		0.1	0.2			
Delay (s)		2.2	3.1			
Level of Service		A	A			
Approach Delay (s)		2.2	3.1		0.0	
Approach LOS		A	A		A	

Intersection Summary

HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
8: The Gore Rd & Street Y

FB_Full Build-out 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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		
Flt Protected	0.950			0.850		
Satd. Flow (prot)	1825	0	1825	1551	1858	1921
Flt Permitted	0.950					
Satd. Flow (perm)	1676	0	1825	1252	1858	1921
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

FB_Full Build-out 2041
Afternoon Peak Hour

	↙	↑	↗	↓
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)	28.0	92.0	92.0	92.0
Total Split (%)	23.3%	76.7%	76.7%	76.7%
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	0.51	0.00	0.18
Control Delay	42.6	17.5	9.0	3.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	42.6	17.5	9.0	3.3
LOS	D	B	A	A
Approach Delay	42.6	17.5		3.3
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: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.51
 Intersection Signal Delay: 13.8
 Intersection Capacity Utilization 69.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
8: The Gore Rd & Street Y

FB_Full Build-out 2041
Afternoon Peak Hour












				
Lane Group	WBL	NBT	NBR	SBT
Lane Group Flow (vph)	5	827	1	305
v/c Ratio	0.03	0.51	0.00	0.18
Control Delay	42.6	17.5	9.0	3.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	42.6	17.5	9.0	3.3
Queue Length 50th (m)	1.2	94.7	0.0	0.0
Queue Length 95th (m)	4.7	186.8	m0.3	32.6
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)		25.0		
Base Capacity (vph)	334	1618	1110	1703
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	0.51	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

FB_Full Build-out 2041
Afternoon Peak Hour

						
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)	1825		1825	1252		1921
Flt Permitted	0.95		1.00	1.00		1.00
Satd. Flow (perm)	1825		1825	1252		1921
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	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
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)	133		1508	1034		1588
v/s Ratio Prot	c0.00		c0.45			0.16
v/s Ratio Perm				0.00		
v/c Ratio	0.04		0.55	0.00		0.19
Uniform Delay, d1	51.7		3.3	1.8		2.1
Progression Factor	1.00		3.37	2.46		1.00
Incremental Delay, d2	0.1		1.4	0.0		0.3
Delay (s)	51.8		12.5	4.4		2.4
Level of Service	D		B	A		A
Approach Delay (s)	51.8		12.5			2.4
Approach LOS	D		B			A

Intersection Summary

HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
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
9: The Gore Rd & Street DDD

FB_Full Build-out 2041
Afternoon Peak Hour

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						
Flt Protected						
Satd. Flow (prot)	1921	0	1921	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1921	0	1921	0	1858	1921
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

FB_Full Build-out 2041
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	827	0	0	305
Future Volume (Veh/h)	0	0	827	0	0	305
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	0	827	0	0	305
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	0.82	0.82			0.82	
vC, conflicting volume	1232	927			877	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1173	801			740	
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	100			100	
cM capacity (veh/h)	161	292			687	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	0	827	0	305		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.49	0.00	0.18		
Queue Length 95th (m)	0.0	0.0	0.0	0.0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			61.6%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FB_Full Build-out 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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)	1462	0	1921	0	1765	1921
Flt Permitted					0.289	
Satd. Flow (perm)	1462	0	1921	0	537	1921
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

FB_Full Build-out 2041
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	0	827	6	305
Future Volume (vph)	0	827	6	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

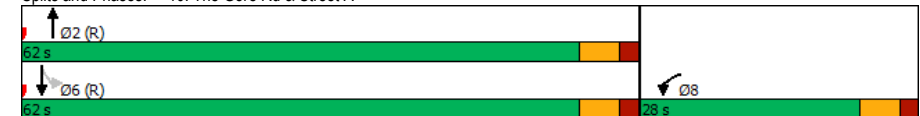
Lead-Lag Optimize?

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	0.53	0.01	0.20
Control Delay	0.4	8.3	6.0	5.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	8.3	6.0	5.0
LOS	A	A	A	A
Approach Delay	0.4	8.3		5.0
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: 0.53
 Intersection Signal Delay: 7.3
 Intersection Capacity Utilization 69.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FB_Full Build-out 2041
Afternoon Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	827	6	305
v/c Ratio	0.08	0.53	0.01	0.20
Control Delay	0.4	8.3	6.0	5.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	8.3	6.0	5.0
Queue Length 50th (m)	0.0	36.8	0.2	9.2
Queue Length 95th (m)	0.0	131.7	1.8	34.9
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	473	1556	435	1556
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	0.53	0.01	0.20

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour

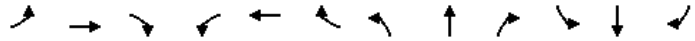
	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↖		↗	↘
Traffic Volume (vph)	0	25	827	0	6	305
Future Volume (vph)	0	25	827	0	6	305
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		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)	1462		1921		1718	1921
Flt Permitted	1.00		1.00		0.29	1.00
Satd. Flow (perm)	1462		1921		522	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	25	827	0	6	305
RTOR Reduction (vph)	22	0	0	0	0	0
Lane Group Flow (vph)	3	0	827	0	6	305
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
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)	160		1453		394	1453
v/s Ratio Prot	c0.00		c0.43			0.16
v/s Ratio Perm					0.01	
v/c Ratio	0.02		0.57		0.02	0.21
Uniform Delay, d1	35.7		4.7		2.7	3.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.0		1.6		0.1	0.3
Delay (s)	35.8		6.3		2.8	3.5
Level of Service	D		A		A	A
Approach Delay (s)	35.8		6.3			3.5
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	6.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
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

FB_Full Build-out 2041
Afternoon Peak Hour



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	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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour



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	13	0	0	49	0	0	0	0	0	0	0
Future Volume (vph)	0	13	0	0	49	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	13	0	0	49	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	13	49	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.01	0.05	0.00	0.00								
Capacity (veh/h)	904	915	885	885								
Control Delay (s)	7.0	7.1	7.0	7.0								
Approach Delay (s)	7.0	7.1	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.1		
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

FB_Full Build-out 2041
Afternoon Peak Hour

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	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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour

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	13	0	0	49	0	0	0	0	0	0	0
Future Volume (vph)	0	13	0	0	49	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	13	0	0	49	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	13	49	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.01	0.05	0.00	0.00								
Capacity (veh/h)	904	915	885	885								
Control Delay (s)	7.0	7.1	7.0	7.0								
Approach Delay (s)	7.0	7.1	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay				7.1								
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

FB_Full Build-out 2041
Afternoon Peak Hour

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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour

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	13	0	0	49	0	0	0	0	0	0	0
Future Volume (vph)	0	13	0	0	49	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	13	0	0	49	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	13	49	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.01	0.05	0.00	0.00								
Capacity (veh/h)	904	915	885	885								
Control Delay (s)	7.0	7.1	7.0	7.0								
Approach Delay (s)	7.0	7.1	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay					7.1							
Level of Service					A							
Intersection Capacity Utilization					29.6%			ICU Level of Service			A	
Analysis Period (min)					15							

Lanes and Geometrics

FB_Full Build-out 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



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					0.977			0.999				
Flt Protected								0.993			0.997	
Satd. Flow (prot)	0	1921	0	0	1877	0	0	1906	0	0	1915	0
Flt Permitted								0.993			0.997	
Satd. Flow (perm)	0	1921	0	0	1877	0	0	1906	0	0	1915	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

FB_Full Build-out 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



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	12	0	0	49	10	23	131	1	3	44	0
Future Volume (vph)	0	12	0	0	49	10	23	131	1	3	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	12	0	0	49	10	23	131	1	3	44	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	12	59	155	47								
Volume Left (vph)	0	0	23	3								
Volume Right (vph)	0	10	1	0								
Hadj (s)	0.00	-0.10	0.03	0.01								
Departure Headway (s)	4.4	4.3	4.1	4.2								
Degree Utilization, x	0.01	0.07	0.18	0.06								
Capacity (veh/h)	773	805	847	828								
Control Delay (s)	7.5	7.6	8.0	7.5								
Approach Delay (s)	7.5	7.6	8.0	7.5								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.8
Level of Service	A
Intersection Capacity Utilization	32.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
48: Humber Station Rd & Street E

FB_Full Build-out 2041
Afternoon Peak Hour

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	1921	0	0	1825	0	1921	1921	1633	1921	1921	0
Flt Permitted					0.757							
Satd. Flow (perm)	0	1921	0	0	1351	0	1921	1921	1411	1921	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)									80			
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

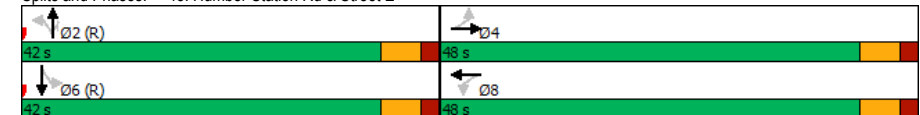
FB_Full Build-out 2041
Afternoon Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↑	↔	↔	
Traffic Volume (vph)	147	0	132	80	45	
Future Volume (vph)	147	0	132	80	45	
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)		15.4	62.6	62.6	62.6	
Actuated g/C Ratio		0.17	0.70	0.70	0.70	
v/c Ratio		0.64	0.10	0.08	0.03	
Control Delay		46.3	5.6	1.8	5.6	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		46.3	5.6	1.8	5.6	
LOS		D	A	A	A	
Approach Delay		46.3	4.2		5.6	
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: 19.7
 Intersection Capacity Utilization 41.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FB_Full Build-out 2041
Afternoon Peak Hour



Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	147	132	80	45
v/c Ratio	0.64	0.10	0.08	0.03
Control Delay	46.3	5.6	1.8	5.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.3	5.6	1.8	5.6
Queue Length 50th (m)	24.9	6.7	0.0	2.2
Queue Length 95th (m)	40.7	16.0	5.0	6.9
Internal Link Dist (m)	92.4	129.1		337.3
Turn Bay Length (m)				
Base Capacity (vph)	630	1336	1005	1336
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	0.23	0.10	0.08	0.03

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	0	147	0	0	0	132	80	0	45	0
Future Volume (vph)	0	0	0	147	0	0	0	132	80	0	45	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	
Frbp, 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	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1695			1921	1411		1921	
Fit Permitted					0.76			1.00	1.00		1.00	
Satd. Flow (perm)					1351			1921	1411		1921	
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	147	0	0	0	132	80	0	45	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	24	0	0	0
Lane Group Flow (vph)	0	0	0	0	147	0	0	132	56	0	45	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)					15.4			62.6	62.6		62.6	
Effective Green, g (s)					15.4			62.6	62.6		62.6	
Actuated g/C Ratio					0.17			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)					231			1336	981		1336	
v/s Ratio Prot								c0.07			0.02	
v/s Ratio Perm					c0.11				0.04			
v/c Ratio					0.64			0.10	0.06		0.03	
Uniform Delay, d1					34.7			4.5	4.3		4.3	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					5.6			0.1	0.1		0.0	
Delay (s)					40.3			4.6	4.5		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	17.6	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	41.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

FB_Full Build-out 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
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	0.95	0.95	1.00	0.95	0.95	
Ped Bike Factor	0.92	0.91		0.92		0.91	0.88	0.96		0.95	0.98	
Frt		0.850				0.850		0.931			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1487	0	1825	1921	1633	1825	3258	0	1825	3534	0
Flt Permitted	0.757			0.756			0.725			0.532		
Satd. Flow (perm)	1339	1487	0	1338	1921	1487	1221	3258	0	975	3534	0
Right Turn on Red			Yes			Yes		Yes			Yes	
Satd. Flow (RTOR)		813				668		142			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

FB_Full Build-out 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↓
Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT		
Lane Configurations	↖	↖	↖	↖	↖	↖	↖	↖	↖	↖
Traffic Volume (vph)	3	0	29	29	20	166	142	41		
Future Volume (vph)	3	0	29	29	20	166	142	41		
Turn Type	Perm	NA	Perm	Perm	Perm	NA	pm+pt	NA		
Protected Phases		4				2	1	6		
Permitted Phases	4		8	8	2			6		
Detector Phase	4	4	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		
Minimum Split (s)	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	42.0	42.0	25.0	67.0		
Total Split (%)	33.0%	33.0%	33.0%	33.0%	42.0%	42.0%	25.0%	67.0%		
Yellow Time (s)	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	1.0	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)	6.0	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	C-Max	C-Max	None	C-Max		
Act Effct Green (s)	11.5	11.5	11.5	11.5	67.4	67.4	80.8	80.0		
Actuated g/C Ratio	0.12	0.12	0.12	0.12	0.67	0.67	0.81	0.80		
v/c Ratio	0.02	0.00	0.19	0.04	0.02	0.14	0.17	0.02		
Control Delay	34.3	0.0	39.5	0.1	8.9	4.6	3.7	3.7		
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	34.3	0.0	39.5	0.1	8.9	4.6	3.7	3.7		
LOS	C	A	D	A	A	A	A	A		
Approach Delay		17.2				4.9		3.7		
Approach LOS		B				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: 0.19
 Intersection Signal Delay: 6.1 Intersection LOS: A
 Intersection Capacity Utilization 51.4% 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

FB_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	3	29	29	20	308	142	46
v/c Ratio	0.02	0.00	0.19	0.04	0.02	0.14	0.17	0.02
Control Delay	34.3	0.0	39.5	0.1	8.9	4.6	3.7	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.3	0.0	39.5	0.1	8.9	4.6	3.7	3.7
Queue Length 50th (m)	0.6	0.0	5.6	0.0	1.1	4.9	3.9	0.6
Queue Length 95th (m)	3.0	0.0	12.9	0.0	5.2	14.3	13.5	2.8
Internal Link Dist (m)		57.8			170.3		129.1	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	361	994	361	889	822	2241	966	2829
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	0.01	0.00	0.08	0.03	0.02	0.14	0.15	0.02

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	0	3	29	0	29	20	166	142	142	41	5
Future Volume (vph)	3	0	3	29	0	29	20	166	142	142	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	6.0	6.0	6.0	4.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.95	1.00	0.95	
Frbp, ped/bikes	1.00	0.91		1.00	0.91	1.00	0.96	1.00	0.96	1.00	0.98	
Flpb, ped/bikes	0.92	1.00		0.92	1.00	0.88	1.00	0.98	1.00	0.98	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.93	1.00	0.98	1.00	0.98	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1681	1487		1682	1487	1600	3258	1782	3532	1782	3532	
Fit Permitted	0.76	1.00		0.76	1.00	0.73	1.00	0.53	1.00	0.53	1.00	
Satd. Flow (perm)	1340	1487		1338	1487	1222	3258	999	3532	999	3532	
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)	3	0	3	29	0	29	20	166	142	142	41	5
RTOR Reduction (vph)	0	3	0	0	0	26	0	48	0	0	1	0
Lane Group Flow (vph)	3	0	0	29	0	3	20	260	0	142	45	0
Confl. Peds. (#/hr)	50		50	50		50	50	50	50	50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm		Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8		2	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	10.4	10.4		10.4		10.4	66.2	66.2		77.6	77.6	
Effective Green, g (s)	10.4	10.4		10.4		10.4	66.2	66.2		77.6	77.6	
Actuated g/C Ratio	0.10	0.10		0.10		0.10	0.66	0.66		0.78	0.78	
Clearance Time (s)	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	
Lane Grp Cap (vph)	139	154		139		154	808	2156		833	2740	
v/s Ratio Prot		0.00						0.08		c0.01	0.01	
v/s Ratio Perm	0.00			c0.02		0.00	0.02			c0.12		
v/c Ratio	0.02	0.00		0.21		0.02	0.02	0.12		0.17	0.02	
Uniform Delay, d1	40.2	40.1		41.0		40.2	5.8	6.2		2.8	2.5	
Progression Factor	1.00	1.00		1.00		1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.7		0.1	0.1	0.1		0.1	0.0	
Delay (s)	40.3	40.2		41.8		40.3	5.9	6.3		2.9	2.6	
Level of Service	D	D		D		D	A	A		A	A	
Approach Delay (s)		40.2			41.0			6.3			2.8	
Approach LOS		D			D			A			A	

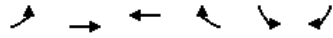
Intersection Summary

HCM 2000 Control Delay	9.0	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	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FB_Full Build-out 2041
Afternoon Peak Hour

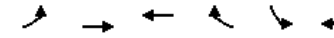


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected						
Satd. Flow (prot)	0	1921	1921	0	1921	0
Flt Permitted						
Satd. Flow (perm)	0	1921	1921	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	7	25	0	0	0
Future Volume (vph)	0	7	25	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	7	25	0	0	0
Direction, Lane #						
	EB 1	WB 1	SB 1			
Volume Total (vph)	7	25	0			
Volume Left (vph)	0	0	0			
Volume Right (vph)	0	0	0			
Hadj (s)	0.00	0.00	0.00			
Departure Headway (s)	3.9	3.9	4.0			
Degree Utilization, x	0.01	0.03	0.00			
Capacity (veh/h)	910	916	900			
Control Delay (s)	7.0	7.0	7.0			
Approach Delay (s)	7.0	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

FB_Full Build-out 2041
Afternoon Peak Hour

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	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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour

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	7	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	7	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	7	0	0	25	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	7	25	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.01	0.03	0.00	0.00								
Capacity (veh/h)	910	916	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				6.7%			ICU Level of Service				A	
Analysis Period (min)				15								

Lanes and Geometrics
65: Street I & Street Y

FB_Full Build-out 2041
Afternoon Peak Hour

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		
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	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour

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	7	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	7	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	7	0	0	25	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	7	25	0	0								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	0	0	0	0								
Hadj (s)	0.00	0.00	0.00	0.00								
Departure Headway (s)	3.9	3.9	4.0	4.0								
Degree Utilization, x	0.01	0.03	0.00	0.00								
Capacity (veh/h)	910	916	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
84: Street JJ & Street EE

FB_Full Build-out 2041
Afternoon Peak Hour



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		
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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	0	0	15	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	4	0	0	15	0	0	0	0	0	0	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	4	0	0	15	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	58	100	100	102	100	50	50				50	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	58	100	100	102	100	50	50				50	
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	100	100	98	100	100				100	
cM capacity (veh/h)	833	727	881	754	727	980	1502				1502	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	4	15	0	0
Volume Left	0	0	0	0
Volume Right	0	0	0	0
cSH	727	727	1700	1700
Volume to Capacity	0.01	0.02	0.00	0.00
Queue Length 95th (m)	0.1	0.5	0.0	0.0
Control Delay (s)	10.0	10.1	0.0	0.0
Lane LOS	A	B		
Approach Delay (s)	10.0	10.1	0.0	0.0
Approach LOS	A	B		

Intersection Summary

Average Delay	10.0
Intersection Capacity Utilization	29.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
85: Street I & Street EE

FB_Full Build-out 2041
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
Fr												
Flt Protected												
Satd. Flow (prot)	0	1921	0	0	1921	0	0	1921	0	0	1921	0
Flt Permitted												
Satd. Flow (perm)	0	1921	0	0	1921	0	0	1921	0	0	1921	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

FB_Full Build-out 2041
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	0	0	15	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	4	0	0	15	0	0	0	0	0	0	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	4	0	0	15	0	0	0	0	0	0	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	108	100	100	102	100	100	50			50		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	108	100	100	102	100	100	50			50		
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	100	100	98	100	100			100		
cM capacity (veh/h)	740	727	881	754	727	881	1502			1502		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	15	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	727	727	1700	1700								
Volume to Capacity	0.01	0.02	0.00	0.00								
Queue Length 95th (m)	0.1	0.5	0.0	0.0								
Control Delay (s)	10.0	10.1	0.0	0.0								
Lane LOS	A	B										
Approach Delay (s)	10.0	10.1	0.0	0.0								
Approach LOS	A	B										
Intersection Summary												
Average Delay					10.0							
Intersection Capacity Utilization			29.6%				ICU Level of Service			A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FB_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
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					0.99	
Frt					0.990	
Flt Protected	0.950					
Satd. Flow (prot)	1825	0	0	3650	3581	0
Flt Permitted	0.950					
Satd. Flow (perm)	1825	0	0	3650	3581	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					13	
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

FB_Full Build-out 2041
Afternoon Peak Hour



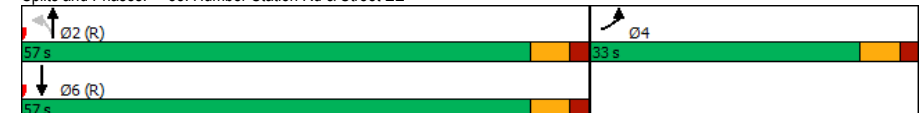
Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑↑	↑↑
Traffic Volume (vph)	4	199	213
Future Volume (vph)	4	199	213
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	33.0	57.0	57.0
Total Split (%)	36.7%	63.3%	63.3%
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	0.06	0.07
Control Delay	29.8	3.3	3.1
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	3.3	3.1
LOS	C	A	A
Approach Delay	29.8	3.3	3.1
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.07
 Intersection Signal Delay: 3.4
 Intersection Capacity Utilization 30.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
88: Humber Station Rd & Street EE

FB_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	4	199	228
v/c Ratio	0.02	0.06	0.07
Control Delay	29.8	3.3	3.1
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	3.3	3.1
Queue Length 50th (m)	0.7	0.0	0.0
Queue Length 95th (m)	3.3	9.8	10.6
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	547	3147	3089
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.06	0.07

Intersection Summary

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

FB_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↓	
Traffic Volume (vph)	4	0	0	199	213	15
Future Volume (vph)	4	0	0	199	213	15
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	
Frbp, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.99	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1825			3650	3582	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1825			3650	3582	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	0	0	199	213	15
RTOR Reduction (vph)	0	0	0	0	3	0
Lane Group Flow (vph)	4	0	0	199	225	0
Confl. Peds. (#/hr)			50			50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
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)	154			2855	2801	
v/s Ratio Prot	c0.00			0.05	c0.06	
v/s Ratio Perm						
v/c Ratio	0.03			0.07	0.08	
Uniform Delay, d1	37.8			2.3	2.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.1			0.0	0.1	
Delay (s)	37.9			2.3	2.3	
Level of Service	D			A	A	
Approach Delay (s)	37.9			2.3	2.3	
Approach LOS	D			A	A	

Intersection Summary

HCM 2000 Control Delay	2.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.08		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
1: The Gore Rd & King St

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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			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			0.988			0.962		
Flt Protected	0.950	0.950			0.950			0.950			0.950	
Satd. Flow (prot)	1562	1730	0	1681	1715	0	1261	1855	0	1681	1781	0
Flt Permitted	0.224	0.411			0.522			0.138			0.138	
Satd. Flow (perm)	368	1730	0	692	1715	0	636	1855	0	244	1781	0
Right Turn on Red	Yes			Yes			Yes			Yes		
Satd. Flow (RTOR)	3			11			4			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

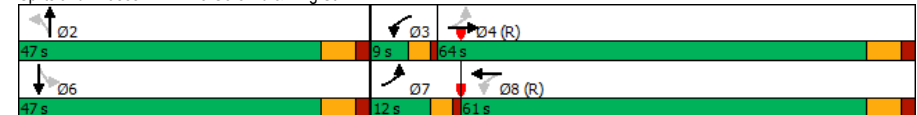
FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	444	52	515	57	465	38	171
Future Volume (vph)	148	444	52	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	64.0	9.0	61.0	47.0	47.0	47.0	47.0
Total Split (%)	10.0%	53.3%	7.5%	50.8%	39.2%	39.2%	39.2%	39.2%
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)	72.1	62.4	66.1	57.7	36.6	36.6	36.6	36.6
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	0.52	0.12	0.74	0.30	0.89	0.51	0.41
Control Delay	16.8	22.9	11.8	32.6	34.9	58.1	59.2	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	22.9	11.8	32.6	34.9	58.1	59.2	32.5
LOS	B	C	B	C	C	E	E	C
Approach Delay	21.4		30.9		55.8		36.3	
Approach LOS	C		C		E		D	

Intersection Summary

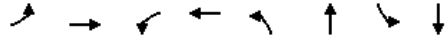
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.89
 Intersection Signal Delay: 35.5
 Intersection Capacity Utilization 103.8%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service G

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



Queues
1: The Gore Rd & King St

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	464	52	616	57	506	38	229
v/c Ratio	0.48	0.52	0.12	0.74	0.30	0.89	0.51	0.41
Control Delay	16.8	22.9	11.8	32.6	34.9	58.1	59.2	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.8	22.9	11.8	32.6	34.9	58.1	59.2	32.5
Queue Length 50th (m)	15.4	77.9	5.1	124.2	10.4	114.8	7.5	40.6
Queue Length 95th (m)	27.0	111.1	11.1	174.0	22.2	#160.4	#22.4	62.0
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)	307	903	428	834	215	630	82	612
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	0.74	0.27	0.80	0.46	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 FB_Full Build-out_No Improvements 2041
1: The Gore Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	148	444	20	52	515	101	57	465	41	38	171	58
Future Volume (vph)	148	444	20	52	515	101	57	465	41	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	
Frbp, ped/bikes	1.00	0.99		1.00	0.98		1.00	0.99		1.00	0.96	
Frt, 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		1648	1715		1159	1855		1681	1781	
Flt Permitted	0.22	1.00		0.41	1.00		0.52	1.00		0.14	1.00	
Satd. Flow (perm)	368	1729		713	1715		637	1855		244	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	444	20	52	515	101	57	465	41	38	171	58
RTOR Reduction (vph)	0	1	0	0	6	0	0	3	0	0	10	0
Lane Group Flow (vph)	148	463	0	52	610	0	57	503	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)	70.0	61.5		62.4	57.7		36.6	36.6		36.6	36.6	
Effective Green, g (s)	70.0	61.5		62.4	57.7		36.6	36.6		36.6	36.6	
Actuated g/C Ratio	0.58	0.51		0.52	0.48		0.31	0.31		0.31	0.31	
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)	299	886		407	824		194	565		74	543	
v/s Ratio Prot	c0.04	0.27		0.01	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		0.13	0.74		0.29	0.89		0.51	0.40	
Uniform Delay, d1	16.1	19.5		14.7	25.1		31.8	39.8		34.4	33.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	2.2		0.1	5.9		0.8	16.1		5.9	0.5	
Delay (s)	17.4	21.7		14.9	31.1		32.7	55.9		40.3	33.5	
Level of Service	B	C		B	C		C	E		D	C	
Approach Delay (s)		20.6			29.8			53.5			34.5	
Approach LOS		C			C			D			C	

Intersection Summary

HCM 2000 Control Delay	34.1	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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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			0.96	
Frt		0.994			0.987			0.964			0.963	
Flt Protected		0.998			0.998			0.986			0.997	
Satd. Flow (prot)	0	1747	0	0	1787	0	0	1312	0	0	1559	0
Flt Permitted		0.961			0.976			0.761			0.969	
Satd. Flow (perm)	0	1679	0	0	1744	0	0	986	0	0	1506	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			6			16			16	
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

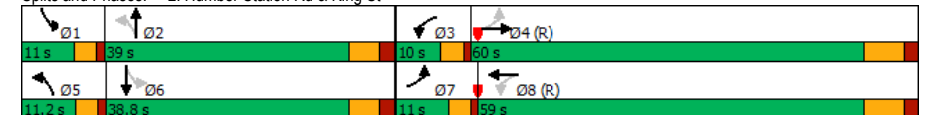
FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	25	533	18	518	71	117	14	140
Future Volume (vph)	25	533	18	518	71	117	14	140
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)		75.0		75.0		31.4		31.4
Actuated g/C Ratio		0.62		0.62		0.26		0.26
v/c Ratio		0.55		0.54		0.95		0.52
Control Delay		17.3		16.8		82.8		38.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		17.3		16.8		82.8		38.0
LOS		B		B		F		D
Approach Delay		17.3		16.8		82.8		38.0
Approach LOS		B		B		F		D

Intersection Summary

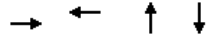
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 30.0
 Intersection Capacity Utilization 88.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
2: Humber Station Rd & King St

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

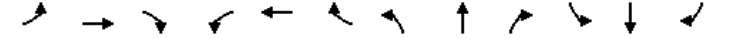


Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	582	592	256	212
v/c Ratio	0.55	0.54	0.95	0.52
Control Delay	17.3	16.8	82.8	38.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	17.3	16.8	82.8	38.0
Queue Length 50th (m)	76.1	76.1	58.4	41.1
Queue Length 95th (m)	140.1	139.0	83.8	56.9
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	1049	1091	303	455
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	0.55	0.54	0.84	0.47

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
2: Humber Station Rd & King St

Afternoon Peak Hour



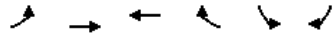
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	25	533	24	18	518	56	71	117	68	14	140	58
Future Volume (vph)	25	533	24	18	518	56	71	117	68	14	140	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	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			1785			1285			1552	
Flt Permitted		0.96			0.98			0.76			0.97	
Satd. Flow (perm)		1680			1744			991			1509	
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)	25	533	24	18	518	56	71	117	68	14	140	58
RTOR Reduction (vph)	0	1	0	0	2	0	0	12	0	0	12	0
Lane Group Flow (vph)	0	581	0	0	590	0	0	244	0	0	200	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)		75.0			75.0			31.4			31.4	
Effective Green, g (s)		75.0			75.0			31.4			31.4	
Actuated g/C Ratio		0.62			0.62			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)		1050			1090			259			394	
v/s Ratio Prot												
v/s Ratio Perm		0.35			0.34			0.25			0.13	
v/c Ratio		0.55			0.54			0.94			0.51	
Uniform Delay, d1		12.9			12.7			43.4			37.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			0.6			40.3			1.0	
Delay (s)		13.5			13.3			83.8			38.8	
Level of Service		B			B			F			D	
Approach Delay (s)		13.5			13.3			83.8			38.8	
Approach LOS		B			B			F			D	

Intersection Summary

HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



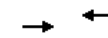
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

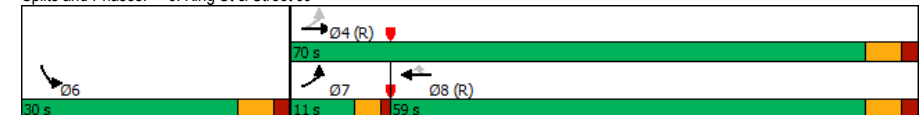


Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↑	↑		
Traffic Volume (vph)	537	690		
Future Volume (vph)	537	690		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.33	0.43		
Control Delay	5.5	3.9		
Queue Delay	0.0	0.0		
Total Delay	5.5	3.9		
LOS	A	A		
Approach Delay	5.5	3.9		
Approach LOS	A	A		

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: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 4.6
 Intersection Capacity Utilization 63.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

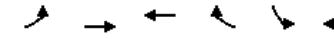


Lane Group	EBT	WBT
Lane Group Flow (vph)	537	690
v/c Ratio	0.33	0.43
Control Delay	5.5	3.9
Queue Delay	0.0	0.0
Total Delay	5.5	3.9
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	71.6	40.5
Internal Link Dist (m)	86.9	276.5
Turn Bay Length (m)		
Base Capacity (vph)	1612	1612
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.33	0.43

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
6: King St & Street JJ

Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Volume (vph)	0	537	690	0	0	0
Future Volume (vph)	0	537	690	0	0	0
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			
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	537	690	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	537	690	0	0	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)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		1476	1476			
v/s Ratio Prot		0.29	0.37			
v/s Ratio Perm						
v/c Ratio		0.36	0.47			
Uniform Delay, d1		3.3	3.7			
Progression Factor		1.00	0.56			
Incremental Delay, d2		0.7	1.0			
Delay (s)		4.0	3.0			
Level of Service		A	A			
Approach Delay (s)		4.0	3.0		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay		3.4		HCM 2000 Level of Service	A	
HCM 2000 Volume to Capacity ratio		0.44				
Actuated Cycle Length (s)		100.0		Sum of lost time (s)	16.0	
Intersection Capacity Utilization		63.3%		ICU Level of Service	B	
Analysis Period (min)		15				

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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						
Frt						
Flt Protected						
Satd. Flow (prot)	1821	1883	1883	1883	1883	0
Flt Permitted						
Satd. Flow (perm)	1821	1883	1883	1883	1883	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)						
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

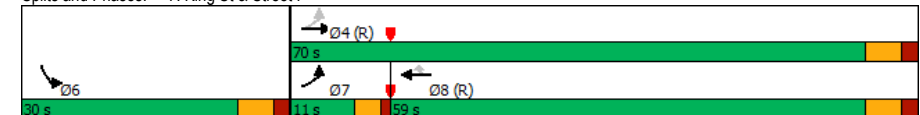
FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	EBT	WBT	Ø6	Ø7
Lane Configurations	↖	↖		
Traffic Volume (vph)	537	690		
Future Volume (vph)	537	690		
Turn Type	NA	NA		
Protected Phases	4	8	6	7
Permitted Phases				
Detector Phase	4	8		
Switch Phase				
Minimum Initial (s)	5.0	5.0	5.0	5.0
Minimum Split (s)	23.0	23.0	30.0	11.0
Total Split (s)	70.0	59.0	30.0	11.0
Total Split (%)	70.0%	59.0%	30%	11%
Yellow Time (s)	4.0	4.0	4.0	3.0
All-Red Time (s)	2.0	2.0	2.0	1.0
Lost Time Adjust (s)	0.0	0.0		
Total Lost Time (s)	6.0	6.0		
Lead/Lag		Lag		Lead
Lead-Lag Optimize?		Yes		Yes
Recall Mode	C-Min	C-Min	None	None
Act Effct Green (s)	85.6	85.6		
Actuated g/C Ratio	0.86	0.86		
v/c Ratio	0.33	0.43		
Control Delay	3.6	6.5		
Queue Delay	0.0	0.0		
Total Delay	3.6	6.5		
LOS	A	A		
Approach Delay	3.6	6.5		
Approach LOS	A	A		

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: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 5.2
 Intersection Capacity Utilization 63.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

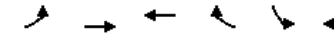


Lane Group	EBT	WBT
Lane Group Flow (vph)	537	690
v/c Ratio	0.33	0.43
Control Delay	3.6	6.5
Queue Delay	0.0	0.0
Total Delay	3.6	6.5
Queue Length 50th (m)	0.0	0.0
Queue Length 95th (m)	32.7	103.0
Internal Link Dist (m)	276.5	305.7
Turn Bay Length (m)		
Base Capacity (vph)	1612	1612
Starvation Cap Reductn	0	0
Spillback Cap Reductn	0	0
Storage Cap Reductn	0	0
Reduced v/c Ratio	0.33	0.43

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
7: King St & Street I

Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↑	↔	↔	↔
Traffic Volume (vph)	0	537	690	0	0	0
Future Volume (vph)	0	537	690	0	0	0
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			
Lane Util. Factor		1.00	1.00			
Frpb, ped/bikes		1.00	1.00			
Flpb, ped/bikes		1.00	1.00			
Fr t		1.00	1.00			
Fl t Protected		1.00	1.00			
Satd. Flow (prot)		1883	1883			
Fl t 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	537	690	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	0	537	690	0	0	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)		78.4	78.4			
Effective Green, g (s)		78.4	78.4			
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)		1476	1476			
v/s Ratio Prot		0.29	0.37			
v/s Ratio Perm						
v/c Ratio		0.36	0.47			
Uniform Delay, d1		3.3	3.7			
Progression Factor		0.63	1.00			
Incremental Delay, d2		0.7	1.1			
Delay (s)		2.7	4.7			
Level of Service		A	A			
Approach Delay (s)		2.7	4.7		0.0	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			3.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	16.0
Intersection Capacity Utilization			63.3%		ICU Level of Service	B
Analysis Period (min)			15			

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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			
Fr						
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↓
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 Capacity Utilization 69.2%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
8: The Gore Rd & Street Y

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↓
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 FB_Full Build-out_No Improvements 2041
8: The Gore Rd & Street Y

Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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
9: The Gore Rd & Street DDD

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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						
Fr						
Flt Protected						
Satd. Flow (prot)	1883	0	1883	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1883	0	1883	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 FB_Full Build-out_No Improvements 2041
9: The Gore Rd & Street DDD

Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	827	0	0	305
Future Volume (Veh/h)	0	0	827	0	0	305
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	0	827	0	0	305
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	0.77	0.77			0.77	
vC, conflicting volume	1232	927			877	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1150	752			686	
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	100			100	
cM capacity (veh/h)	154	288			665	
Direction, Lane #						
Volume Total	0	827	305			
Volume Left	0	0	0			
Volume Right	0	0	0			
cSH	1700	1700	1700			
Volume to Capacity	0.00	0.49	0.18			
Queue Length 95th (m)	0.0	0.0	0.0			
Control Delay (s)	0.0	0.0	0.0			
Lane LOS	A					
Approach Delay (s)	0.0	0.0	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			61.6%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↖	↗
Traffic Volume (vph)	0	827	6	305
Future Volume (vph)	0	827	6	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	6.0	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	10.3	6.0	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 Capacity Utilization 69.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	827	6	305
v/c Ratio	0.08	0.54	0.01	0.20
Control Delay	0.4	10.3	6.0	5.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.4	10.3	6.0	5.1
Queue Length 50th (m)	0.0	37.3	0.2	9.2
Queue Length 95th (m)	0.0	114.8	1.8	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 FB_Full Build-out_No Improvements 2041
10: The Gore Rd & Street A

Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↖		↗	↘
Traffic Volume (vph)	0	25	827	0	6	305
Future Volume (vph)	0	25	827	0	6	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	6	305
RTOR Reduction (vph)	22	0	0	0	0	0
Lane Group Flow (vph)	3	0	827	0	6	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		0.02	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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	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												
Fr												
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour




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	13	0	0	49	0	0	0	0	0	0	0
Future Volume (vph)	0	13	0	0	49	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	13	0	0	49	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	13	49	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	0.05	0.00	0.00								
Capacity (veh/h)	896	907	885	885								
Control Delay (s)	7.0	7.2	7.0	7.0								
Approach Delay (s)	7.0	7.2	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.1
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour




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	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												
Fr												
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	13	0	0	49	0	0	0	0	0	0	0
Future Volume (vph)	0	13	0	0	49	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	13	0	0	49	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	13	49	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	0.05	0.00	0.00								
Capacity (veh/h)	896	907	885	885								
Control Delay (s)	7.0	7.2	7.0	7.0								
Approach Delay (s)	7.0	7.2	0.0	0.0								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.1
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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 FB_Full Build-out_No Improvements 2041
15: Street I & Street A

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	13	0	0	49	0	0	0	0	0	0	0
Future Volume (vph)	0	13	0	0	49	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	13	0	0	49	0	0	0	0	0	0	0
Direction, Lane #												
Volume Total (vph)	13	49	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	0.05	0.00	0.00								
Capacity (veh/h)	896	907	885	885								
Control Delay (s)	7.0	7.2	7.0	7.0								
Approach Delay (s)	7.0	7.2	0.0	0.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay		7.1										
Level of Service		A										
Intersection Capacity Utilization		29.6%			ICU Level of Service					A		
Analysis Period (min)		15										

Lanes and Geometrics

FB_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



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					0.977			0.999				
Flt Protected								0.993			0.997	
Satd. Flow (prot)	0	1883	0	0	1840	0	0	1868	0	0	1878	0
Flt Permitted								0.993			0.997	
Satd. Flow (perm)	0	1883	0	0	1840	0	0	1868	0	0	1878	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 FB_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



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	12	0	0	49	10	23	131	1	3	44	0
Future Volume (vph)	0	12	0	0	49	10	23	131	1	3	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	12	0	0	49	10	23	131	1	3	44	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	12	59	155	47								
Volume Left (vph)	0	0	23	3								
Volume Right (vph)	0	10	1	0								
Hadj (s)	0.03	-0.07	0.06	0.05								
Departure Headway (s)	4.4	4.3	4.2	4.3								
Degree Utilization, x	0.01	0.07	0.18	0.06								
Capacity (veh/h)	767	798	840	821								
Control Delay (s)	7.5	7.6	8.1	7.5								
Approach Delay (s)	7.5	7.6	8.1	7.5								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	7.9
Level of Service	A
Intersection Capacity Utilization	32.5%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics

FB_Full Build-out_No Improvements 2041

48: Humber Station Rd & Street E

Afternoon Peak Hour

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									0.850			
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)									80			
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

FB_Full Build-out_No Improvements 2041

48: Humber Station Rd & Street E

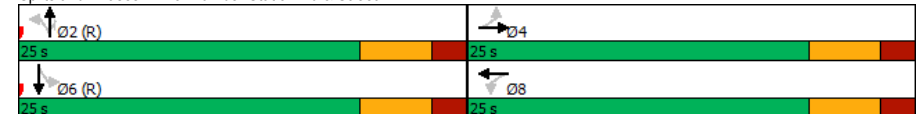
Afternoon Peak Hour

Lane Group	WBL	WBT	NBT	NBR	SBT	Ø4
Lane Configurations		↔	↔	↔	↔	
Traffic Volume (vph)	147	0	132	80	45	
Future Volume (vph)	147	0	132	80	45	
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		0.27	0.18	0.12	0.06	
Control Delay		12.5	11.2	3.7	10.2	
Queue Delay		0.0	0.0	0.0	0.0	
Total Delay		12.5	11.2	3.7	10.2	
LOS		B	B	A	B	
Approach Delay		12.5	8.4		10.2	
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: 0.27
 Intersection Signal Delay: 10.1
 Intersection Capacity Utilization 25.1%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

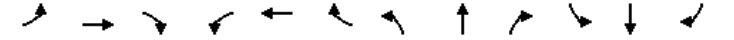


Lane Group	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	147	132	80	45
v/c Ratio	0.27	0.18	0.12	0.06
Control Delay	12.5	11.2	3.7	10.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.5	11.2	3.7	10.2
Queue Length 50th (m)	9.0	7.8	0.0	2.5
Queue Length 95th (m)	19.5	16.8	6.2	7.4
Internal Link Dist (m)	185.7	130.4		336.1
Turn Bay Length (m)				
Base Capacity (vph)	541	715	657	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	0.27	0.18	0.12	0.06

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
48: Humber Station Rd & Street E

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	0	0	0	147	0	0	0	132	80	0	45	0
Future Volume (vph)	0	0	0	147	0	0	0	132	80	0	45	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	
Fr t					1.00			1.00	0.85		1.00	
Fit Protected					0.95			1.00	1.00		1.00	
Satd. Flow (prot)					1789			1883	1601		1883	
Fit 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	147	0	0	0	132	80	0	45	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	50	0	0	0
Lane Group Flow (vph)	0	0	0	0	147	0	0	132	30	0	45	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								0.07			0.02	
v/s Ratio Perm					0.10				0.02			
v/c Ratio					0.27			0.18	0.05		0.06	
Uniform Delay, d1					10.7			10.3	9.8		9.8	
Progression Factor					1.00			1.00	1.00		1.00	
Incremental Delay, d2					1.2			0.6	0.2		0.2	
Delay (s)					12.0			10.9	10.0		10.0	
Level of Service					B			B	A		B	
Approach Delay (s)		0.0			12.0			10.5			10.0	
Approach LOS		A			B			B			B	

Intersection Summary

HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

FB_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	0.89	0.96		0.96	0.99	
Frt		0.850				0.850		0.931			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1383	0	1789	1883	1601	1789	1687	0	1789	1826	0
Flt Permitted	0.757			0.756			0.727			0.573		
Satd. Flow (perm)	1324	1383	0	1256	1883	1470	1217	1687	0	1032	1826	0
Right Turn on Red			Yes			Yes		Yes			Yes	
Satd. Flow (RTOR)		799				604		81			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

FB_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

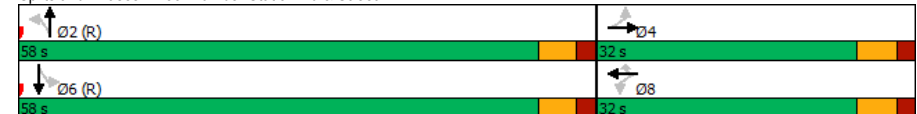
Afternoon Peak Hour

	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group								
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	0	29	29	20	166	142	41
Future Volume (vph)	3	0	29	29	20	166	142	41
Turn Type	Perm	NA	Perm	Perm	Perm	NA	Perm	NA
Protected Phases		4				2		6
Permitted Phases	4		8	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	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
Total Split (s)	32.0	32.0	32.0	32.0	58.0	58.0	58.0	58.0
Total Split (%)	35.6%	35.6%	35.6%	35.6%	64.4%	64.4%	64.4%	64.4%
Yellow Time (s)	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
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	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	C-Max	C-Max	C-Max	C-Max
Act Effct Green (s)	11.3	11.3	11.4	11.4	73.7	73.7	73.7	73.7
Actuated g/C Ratio	0.13	0.13	0.13	0.13	0.82	0.82	0.82	0.82
v/c Ratio	0.02	0.00	0.18	0.04	0.02	0.22	0.17	0.03
Control Delay	29.3	0.0	34.3	0.1	4.7	3.4	4.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	0.0	34.3	0.1	4.7	3.4	4.9	4.2
LOS	C	A	C	A	A	A	A	A
Approach Delay		14.7				3.4		4.7
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: 0.22
 Intersection Signal Delay: 5.3
 Intersection Capacity Utilization 56.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
58: Humber Station Rd & Street Y

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	3	3	29	29	20	308	142	46
v/c Ratio	0.02	0.00	0.18	0.04	0.02	0.22	0.17	0.03
Control Delay	29.3	0.0	34.3	0.1	4.7	3.4	4.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.3	0.0	34.3	0.1	4.7	3.4	4.9	4.2
Queue Length 50th (m)	0.5	0.0	5.0	0.0	0.6	7.6	4.9	1.3
Queue Length 95th (m)	2.8	0.0	11.7	0.0	3.4	21.5	17.1	5.8
Internal Link Dist (m)		57.8			170.3		130.4	
Turn Bay Length (m)	45.0		25.0	25.0	50.0		50.0	
Base Capacity (vph)	382	967	362	854	996	1396	845	1496
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	0.01	0.00	0.08	0.03	0.02	0.22	0.17	0.03

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
58: Humber Station Rd & Street Y

Afternoon Peak Hour



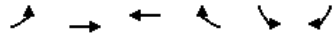
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	0	3	29	0	29	20	166	142	142	41	5
Future Volume (vph)	3	0	3	29	0	29	20	166	142	142	41	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	6.0	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	
Frbp, ped/bikes	1.00	0.86		1.00	0.92	1.00	0.96			1.00	0.99	
Flpb, ped/bikes	0.93	1.00		0.88	1.00	0.89	1.00			0.95	1.00	
Frt	1.00	0.85		1.00	0.85	1.00	0.93			1.00	0.98	
Fit Protected	0.95	1.00		0.95	1.00	0.95	1.00			0.95	1.00	
Satd. Flow (prot)	1662	1383		1578	1470	1590	1687			1706	1825	
Fit Permitted	0.76	1.00		0.76	1.00	0.73	1.00			0.57	1.00	
Satd. Flow (perm)	1325	1383		1256	1470	1217	1687			1029	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)	3	0	3	29	0	29	20	166	142	142	41	5
RTOR Reduction (vph)	0	3	0	0	0	26	0	19	0	0	1	0
Lane Group Flow (vph)	3	0	0	29	0	3	20	289	0	142	45	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Turn Type	Perm	NA		Perm	Perm	Perm	NA		Perm	NA		NA
Protected Phases		4			8		2				6	
Permitted Phases	4			8		8	2				6	
Actuated Green, G (s)	9.1	9.1		9.1	9.1	68.9	68.9			68.9	68.9	
Effective Green, g (s)	9.1	9.1		9.1	9.1	68.9	68.9			68.9	68.9	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.77	0.77			0.77	0.77	
Clearance Time (s)	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	
Lane Grp Cap (vph)	133	139		126		148	931	1291		787	1397	
v/s Ratio Prot		0.00						c0.17			0.02	
v/s Ratio Perm	0.00			c0.02		0.00	0.02			0.14		
v/c Ratio	0.02	0.00		0.23		0.02	0.02	0.22		0.18	0.03	
Uniform Delay, d1	36.4	36.4		37.2		36.4	2.5	3.0		2.9	2.5	
Progression Factor	1.00	1.00		1.00		1.00	0.98	0.93		1.00	1.00	
Incremental Delay, d2	0.1	0.0		0.9		0.1	0.0	0.4		0.5	0.0	
Delay (s)	36.5	36.4		38.2		36.5	2.5	3.2		3.4	2.6	
Level of Service	D	D		D		D	A	A		A	A	
Approach Delay (s)		36.4			37.3			3.1			3.2	
Approach LOS		D			D			A			A	

Intersection Summary

HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
62: Street Y & Street VV

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

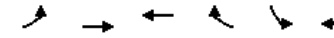


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	7	25	0	0	0
Future Volume (vph)	0	7	25	0	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	7	25	0	0	0
Direction, Lane #						
	EB 1	WB 1	SB 1			
Volume Total (vph)	7	25	0			
Volume Left (vph)	0	0	0			
Volume Right (vph)	0	0	0			
Hadj (s)	0.03	0.03	0.00			
Departure Headway (s)	4.0	3.9	4.0			
Degree Utilization, x	0.01	0.03	0.00			
Capacity (veh/h)	902	908	900			
Control Delay (s)	7.0	7.1	7.0			
Approach Delay (s)	7.0	7.1	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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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		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												
Fr												
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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	7	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	7	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	7	0	0	25	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	7	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	908	900	900								
Control Delay (s)	7.0	7.1	7.0	7.0								
Approach Delay (s)	7.0	7.1	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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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												
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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	7	0	0	25	0	0	0	0	0	0	0
Future Volume (vph)	0	7	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	7	0	0	25	0	0	0	0	0	0	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	7	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	908	900	900								
Control Delay (s)	7.0	7.1	7.0	7.0								
Approach Delay (s)	7.0	7.1	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
84: Street JJ & Street EE

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	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)		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 FB_Full Build-out_No Improvements 2041
84: Street JJ & Street EE

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	0	0	15	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	4	0	0	15	0	0	0	0	0	0	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	4	0	0	15	0	0	0	0	0	0	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)								262				
pX, platoon unblocked												
vC, conflicting volume	58	100	100	102	100	50	50				50	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	58	100	100	102	100	50	50				50	
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	100	100	98	100	100				100	
cM capacity (veh/h)	828	724	875	750	724	975	1490				1490	
Direction, Lane #												
	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	15	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	724	724	1700	1700								
Volume to Capacity	0.01	0.02	0.00	0.00								
Queue Length 95th (m)	0.1	0.5	0.0	0.0								
Control Delay (s)	10.0	10.1	0.0	0.0								
Lane LOS	B	B										
Approach Delay (s)	10.0	10.1	0.0	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				10.1								
Intersection Capacity Utilization			29.6%		ICU Level of Service						A	
Analysis Period (min)				15								

Lanes and Geometrics
85: Street I & Street EE

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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												
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)		275.5			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 FB_Full Build-out_No Improvements 2041
85: Street I & Street EE

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	0	0	15	0	0	0	0	0	0	0
Future Volume (Veh/h)	0	4	0	0	15	0	0	0	0	0	0	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	4	0	0	15	0	0	0	0	0	0	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	108	100	100	102	100	100	50				50	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	108	100	100	102	100	100	50				50	
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	100	100	98	100	100				100	
cM capacity (veh/h)	736	724	875	750	724	875	1490				1490	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	4	15	0	0								
Volume Left	0	0	0	0								
Volume Right	0	0	0	0								
cSH	724	724	1700	1700								
Volume to Capacity	0.01	0.02	0.00	0.00								
Queue Length 95th (m)	0.1	0.5	0.0	0.0								
Control Delay (s)	10.0	10.1	0.0	0.0								
Lane LOS	B	B										
Approach Delay (s)	10.0	10.1	0.0	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay					10.1							
Intersection Capacity Utilization			29.6%			ICU Level of Service				A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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					0.99	
Frt					0.991	
Flt Protected	0.950					
Satd. Flow (prot)	1789	0	0	1883	1850	0
Flt Permitted	0.950					
Satd. Flow (perm)	1789	0	0	1883	1850	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					7	
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

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑	↑
Traffic Volume (vph)	4	199	213
Future Volume (vph)	4	199	213
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)	29.0	61.0	61.0
Total Split (%)	32.2%	67.8%	67.8%
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	0.12	0.14
Control Delay	29.8	3.7	3.6
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	3.7	3.6
LOS	C	A	A
Approach Delay	29.8	3.7	3.6
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.14
 Intersection Signal Delay: 3.9
 Intersection Capacity Utilization 30.0%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
88: Humber Station Rd & Street EE

FB_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	4	199	228
v/c Ratio	0.02	0.12	0.14
Control Delay	29.8	3.7	3.6
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	3.7	3.6
Queue Length 50th (m)	0.7	0.0	0.0
Queue Length 95th (m)	3.3	20.4	24.4
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	457	1623	1596
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.12	0.14

Intersection Summary

HCM Signalized Intersection Capacity Analysis FB_Full Build-out_No Improvements 2041
88: Humber Station Rd & Street EE

Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↓	
Traffic Volume (vph)	4	0	0	199	213	15
Future Volume (vph)	4	0	0	199	213	15
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	
Frbp, ped/bikes	1.00			1.00	0.99	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	0.99	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			1883	1850	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			1883	1850	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	0	0	199	213	15
RTOR Reduction (vph)	0	0	0	0	2	0
Lane Group Flow (vph)	4	0	0	199	226	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	1447	
v/s Ratio Prot	c0.00			0.11	c0.12	
v/s Ratio Perm						
v/c Ratio	0.03			0.14	0.16	
Uniform Delay, d1	37.8			2.4	2.4	
Progression Factor	1.00			1.00	0.99	
Incremental Delay, d2	0.1			0.2	0.2	
Delay (s)	37.9			2.6	2.6	
Level of Service	D			A	A	
Approach Delay (s)	37.9			2.6	2.6	
Approach LOS	D			A	A	

Intersection Summary

HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.14		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
1: The Gore Rd & King St

FT_Full Build-out 2041
Morning Peak Hour

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	0.98		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)	1713	3380	1570	1697	3380	1420	1765	3510	1555	1713	3614	1617
Flt Permitted	0.451			0.510			0.155			0.631		
Satd. Flow (perm)	765	3380	1346	849	3380	1218	283	3510	1422	1073	3614	1479
Right Turn on Red			Yes		Yes			Yes			Yes	
Satd. Flow (RTOR)			89		33			131				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

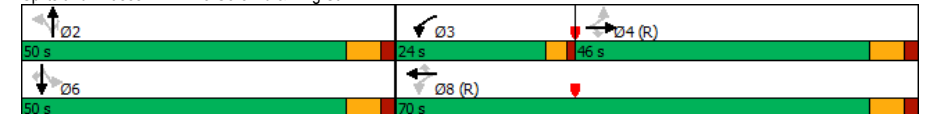
FT_Full Build-out 2041
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	87	335	171	262	539	27	11	192	131	100	772	230
Future Volume (vph)	87	335	171	262	539	27	11	192	131	100	772	230
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)	46.0	46.0	46.0	24.0	70.0	70.0	50.0	50.0	50.0	50.0	50.0	50.0
Total Split (%)	38.3%	38.3%	38.3%	20.0%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%	41.7%	41.7%
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)	55.9	55.9	55.9	76.4	73.8	73.8	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.47	0.47	0.47	0.64	0.62	0.62	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.24	0.21	0.25	0.41	0.26	0.04	0.14	0.20	0.27	0.34	0.78	0.42
Control Delay	25.1	21.3	12.4	12.4	11.7	3.3	34.9	32.8	6.3	36.8	45.6	9.1
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	25.1	21.3	12.4	12.4	11.7	3.3	34.9	32.8	6.3	36.8	45.6	9.1
LOS	C	C	B	B	B	A	C	C	A	D	D	A
Approach Delay		19.3			11.6			22.5			37.2	
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: 0.78
 Intersection Signal Delay: 24.3
 Intersection Capacity Utilization 91.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
1: The Gore Rd & King St

FT_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	87	335	171	262	539	27	11	192	131	100	772	230
v/c Ratio	0.24	0.21	0.25	0.41	0.26	0.04	0.14	0.20	0.27	0.34	0.78	0.42
Control Delay	25.1	21.3	12.4	12.4	11.7	3.3	34.9	32.8	6.3	36.8	45.6	9.1
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	25.1	21.3	12.4	12.4	11.7	3.3	34.9	32.8	6.3	36.8	45.6	9.1
Queue Length 50th (m)	12.4	24.6	11.0	25.5	29.7	0.0	2.1	19.0	0.0	19.6	92.0	6.4
Queue Length 95th (m)	30.2	42.7	31.7	46.1	46.0	3.7	6.9	26.4	13.7	33.0	105.2	24.8
Internal Link Dist (m)	339.2			183.4			604.6			554.8		
Turn Bay Length (m)				139.9			25.0			199.9		
Base Capacity (vph)	356	1574	674	681	2078	761	102	1269	597	388	1307	659
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	0.24	0.21	0.25	0.38	0.26	0.04	0.11	0.15	0.22	0.26	0.59	0.35

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	87	335	171	262	539	27	11	192	131	100	772	230
Future Volume (vph)	87	335	171	262	539	27	11	192	131	100	772	230
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	0.98	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)	1612	3380	1346	1638	3380	1218	1737	3510	1422	1615	3614	1479
Flt Permitted	0.45	1.00	1.00	0.51	1.00	1.00	0.15	1.00	1.00	0.63	1.00	1.00
Satd. Flow (perm)	766	3380	1346	879	3380	1218	283	3510	1422	1073	3614	1479
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)	87	335	171	262	539	27	11	192	131	100	772	230
RTOR Reduction (vph)	0	0	48	0	0	10	0	95	0	0	141	0
Lane Group Flow (vph)	87	335	123	262	539	17	11	192	36	100	772	89
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	3%	8%	4%	4%	8%	15%	0%	4%	5%	3%	1%	1%
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4		3		8		2		6		6	
Permitted Phases	4		8		8		2		6		6	
Actuated Green, G (s)	55.9	55.9	55.9	73.8	73.8	73.8	33.0	33.0	33.0	33.0	33.0	33.0
Effective Green, g (s)	55.9	55.9	55.9	73.8	73.8	73.8	33.0	33.0	33.0	33.0	33.0	33.0
Actuated g/C Ratio	0.47	0.47	0.47	0.61	0.61	0.61	0.28	0.28	0.28	0.28	0.28	0.28
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)	356	1574	627	628	2078	749	77	965	391	295	993	406
v/s Ratio Prot	0.10		c0.05		0.16		0.05		c0.21		0.06	
v/s Ratio Perm	0.11		0.09		c0.21		0.01		0.04		0.03	
v/c Ratio	0.24	0.21	0.20	0.42	0.26	0.02	0.14	0.20	0.09	0.34	0.78	0.22
Uniform Delay, d1	19.3	19.0	18.8	10.7	10.6	9.0	32.8	33.4	32.4	34.8	40.1	33.6
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	1.6	0.3	0.7	0.5	0.3	0.1	0.9	0.1	0.1	0.7	3.9	0.3
Delay (s)	20.9	19.3	19.6	11.1	10.9	9.1	33.7	33.5	32.5	35.5	44.0	33.8
Level of Service	C	B	B	B	B	A	C	C	C	D	D	C
Approach Delay (s)	19.6			10.9			33.1			41.1		
Approach LOS	B			B			C			D		

Intersection Summary

HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

FT_Full Build-out 2041

2: Humber Station Rd & King St

Morning Peak Hour

	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	0.97		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)	1730	3476	1570	1590	3444	1585	1535	3579	949	1665	3579	1585
Flt Permitted	0.452			0.382			0.428			0.510		
Satd. Flow (perm)	799	3476	1455	623	3444	1469	670	3579	833	830	3579	1469
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			301			115			146			146
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

FT_Full Build-out 2041

2: Humber Station Rd & King St

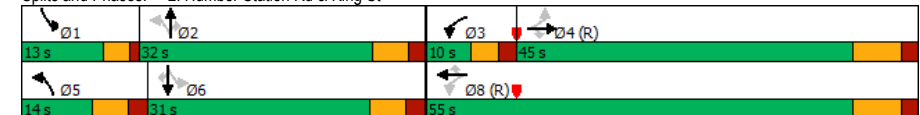
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↕	↔	↔	↕	↔	↔	↕	↔	↔	↕	↔
Traffic Volume (vph)	115	508	401	73	538	115	75	275	18	149	421	130
Future Volume (vph)	115	508	401	73	538	115	75	275	18	149	421	130
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)	45.0	45.0	45.0	10.0	55.0	55.0	14.0	32.0	32.0	13.0	31.0	31.0
Total Split (%)	45.0%	45.0%	45.0%	10.0%	55.0%	55.0%	14.0%	32.0%	32.0%	13.0%	31.0%	31.0%
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)	42.3	42.3	42.3	54.7	52.3	52.3	27.3	18.8	18.8	33.7	21.6	21.6
Actuated g/C Ratio	0.42	0.42	0.42	0.55	0.52	0.52	0.27	0.19	0.19	0.34	0.22	0.22
v/c Ratio	0.34	0.35	0.51	0.18	0.30	0.14	0.29	0.41	0.07	0.40	0.55	0.30
Control Delay	27.3	22.7	9.5	14.0	15.2	3.6	23.9	36.8	0.4	24.1	37.8	6.0
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	27.3	22.7	9.5	14.0	15.2	3.6	23.9	36.8	0.4	24.1	37.8	6.0
LOS	C	C	A	B	B	A	C	D	A	C	D	A
Approach Delay		18.0			13.2			32.4				29.0
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: 0.55
 Intersection Signal Delay: 21.4
 Intersection Capacity Utilization 73.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

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



Queues
2: Humber Station Rd & King St

FT_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Group Flow (vph)	115	508	401	73	538	115	75	275	18	149	421	130
v/c Ratio	0.34	0.35	0.51	0.18	0.30	0.14	0.29	0.41	0.07	0.40	0.55	0.30
Control Delay	27.3	22.7	9.5	14.0	15.2	3.6	23.9	36.8	0.4	24.1	37.8	6.0
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	27.3	22.7	9.5	14.0	15.2	3.6	23.9	36.8	0.4	24.1	37.8	6.0
Queue Length 50th (m)	15.5	35.9	12.3	6.3	29.3	0.0	10.7	26.6	0.0	21.4	42.4	0.0
Queue Length 95th (m)	35.5	57.2	44.5	15.9	49.0	9.6	18.3	35.8	0.0	31.2	53.8	11.8
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)	355	1548	814	409	1838	837	264	930	324	378	902	479
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	0.33	0.49	0.18	0.29	0.14	0.28	0.30	0.06	0.39	0.47	0.27

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour

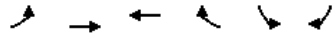
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	115	508	401	73	538	115	75	275	18	149	421	130
Future Volume (vph)	115	508	401	73	538	115	75	275	18	149	421	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	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)	1679	3476	1455	1576	3444	1469	1515	3579	833	1611	3579	1469
Flt Permitted	0.45	1.00	1.00	0.38	1.00	1.00	0.43	1.00	1.00	0.51	1.00	1.00
Satd. Flow (perm)	798	3476	1455	633	3444	1469	682	3579	833	865	3579	1469
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)	115	508	401	73	538	115	75	275	18	149	421	130
RTOR Reduction (vph)	0	0	181	0	0	56	0	0	14	0	0	102
Lane Group Flow (vph)	115	508	220	73	538	59	75	275	4	149	421	28
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	5%	4%	11%	6%	3%	15%	2%	72%	6%	2%	3%
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)	40.0	40.0	40.0	51.0	51.0	51.0	27.7	20.1	20.1	33.1	21.6	21.6
Effective Green, g (s)	40.0	40.0	40.0	51.0	51.0	51.0	27.7	20.1	20.1	33.1	21.6	21.6
Actuated g/C Ratio	0.40	0.40	0.40	0.51	0.51	0.51	0.28	0.20	0.20	0.33	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)	319	1390	582	379	1756	749	252	719	167	372	773	317
v/s Ratio Prot		0.15		0.01	c0.16		0.02	0.08		c0.05	c0.12	
v/s Ratio Perm	0.14		c0.15	0.09		0.04	0.06		0.00	0.09		0.02
v/c Ratio	0.36	0.37	0.38	0.19	0.31	0.08	0.30	0.38	0.02	0.40	0.54	0.09
Uniform Delay, d1	21.0	21.1	21.2	12.9	14.2	12.5	27.6	34.6	32.1	24.7	34.8	31.3
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	3.1	0.7	1.9	0.2	0.5	0.2	0.7	0.3	0.1	0.7	0.8	0.1
Delay (s)	24.2	21.8	23.1	13.2	14.7	12.7	28.2	34.9	32.1	25.4	35.6	31.5
Level of Service	C	C	C	B	B	B	C	C	C	C	D	C
Approach Delay (s)		22.6			14.2		33.4			32.7		
Approach LOS		C			B		C			C		

Intersection Summary

HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FT_Full Build-out 2041
Morning Peak Hour



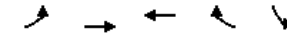
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↗
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	50.0			25.0	0.0	0.0
Storage Lanes	1			1	1	0
Taper Length (m)	7.6				0.0	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.96			0.85	0.94	
Frt				0.850	0.956	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1765	3650	3650	1633	1737	0
Flt Permitted	0.352				0.967	
Satd. Flow (perm)	630	3650	3650	1388	1671	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				35	34	
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

FT_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗	↗	↖	↖
Traffic Volume (vph)	22	569	739	46	211
Future Volume (vph)	22	569	739	46	211
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)	46.0	46.0	46.0	46.0	44.0
Total Split (%)	51.1%	51.1%	51.1%	51.1%	48.9%
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

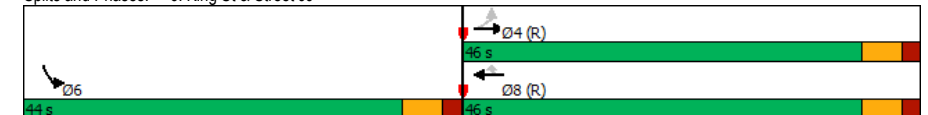
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	57.6	57.6	57.6	57.6	20.4
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.23
v/c Ratio	0.05	0.24	0.32	0.05	0.75
Control Delay	8.5	8.1	10.0	4.8	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	8.1	10.0	4.8	39.3
LOS	A	A	A	A	D
Approach Delay		8.1	9.7		39.3
Approach LOS		A	A		D

Intersection Summary

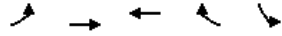
Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 36 (40%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 55
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 50.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FT_Full Build-out 2041
Morning Peak Hour

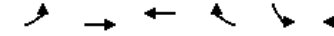


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	569	739	46	314
v/c Ratio	0.05	0.24	0.32	0.05	0.75
Control Delay	8.5	8.1	10.0	4.8	39.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	8.1	10.0	4.8	39.3
Queue Length 50th (m)	1.3	20.6	42.2	3.0	47.1
Queue Length 95th (m)	5.4	36.3	67.8	9.6	67.7
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	402	2334	2334	900	753
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	0.05	0.24	0.32	0.05	0.42

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	22	569	739	46	211	103
Future Volume (vph)	22	569	739	46	211	103
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	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	
Frpt	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)	1688	3650	3650	1388	1737	
Flt Permitted	0.35	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	626	3650	3650	1388	1737	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	22	569	739	46	211	103
RTOR Reduction (vph)	0	0	0	13	26	0
Lane Group Flow (vph)	22	569	739	33	288	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	57.6	57.6	57.6	57.6	20.4	
Effective Green, g (s)	57.6	57.6	57.6	57.6	20.4	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.23	
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)	400	2336	2336	888	393	
v/s Ratio Prot		0.16	c0.20		c0.17	
v/s Ratio Perm	0.04			0.02		
v/c Ratio	0.06	0.24	0.32	0.04	0.73	
Uniform Delay, d1	6.0	6.9	7.3	6.0	32.3	
Progression Factor	1.00	1.00	1.17	1.20	1.00	
Incremental Delay, d2	0.3	0.2	0.3	0.1	6.9	
Delay (s)	6.3	7.2	8.9	7.2	39.2	
Level of Service	A	A	A	A	D	
Approach Delay (s)		7.1	8.8		39.2	
Approach LOS		A	A		D	

Intersection Summary

HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
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
7: King St & Street I

FT_Full Build-out 2041
Morning Peak Hour

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	0.957	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1765	3650	3650	1633	1740	0
Flt Permitted	0.376				0.967	
Satd. Flow (perm)	670	3650	3650	1388	1673	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				37	33	
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

FT_Full Build-out 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗	↗	↖	↖
Traffic Volume (vph)	22	758	687	46	211
Future Volume (vph)	22	758	687	46	211
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

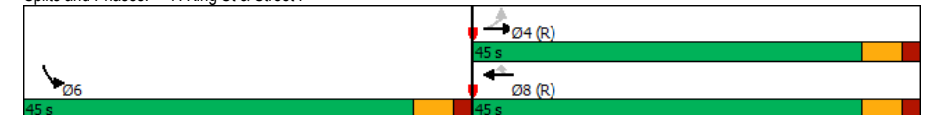
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	57.8	57.8	57.8	57.8	20.2
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.22
v/c Ratio	0.05	0.32	0.29	0.05	0.74
Control Delay	13.4	13.3	8.3	3.7	39.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	13.3	8.3	3.7	39.5
LOS	B	B	A	A	D
Approach Delay		13.3	8.0		39.5
Approach LOS		B	A		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: 0.74
 Intersection Signal Delay: 15.6
 Intersection Capacity Utilization 50.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FT_Full Build-out 2041
Morning Peak Hour



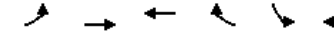
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	758	687	46	309
v/c Ratio	0.05	0.32	0.29	0.05	0.74
Control Delay	13.4	13.3	8.3	3.7	39.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	13.3	8.3	3.7	39.5
Queue Length 50th (m)	2.1	44.5	25.5	0.5	46.5
Queue Length 95th (m)	m7.0	65.8	44.1	5.3	67.4
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	430	2345	2345	905	772
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	0.05	0.32	0.29	0.05	0.40

Intersection Summary

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

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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Volume (vph)	22	758	687	46	211	98
Future Volume (vph)	22	758	687	46	211	98
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	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	0.95	1.00	1.00	1.00	1.00	
Frpt	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)	1680	3650	3650	1388	1740	
Flt Permitted	0.38	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	666	3650	3650	1388	1740	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	22	758	687	46	211	98
RTOR Reduction (vph)	0	0	0	13	26	0
Lane Group Flow (vph)	22	758	687	33	283	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	NA	Perm	Prot	
Protected Phases		4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	57.8	57.8	57.8	57.8	20.2	
Effective Green, g (s)	57.8	57.8	57.8	57.8	20.2	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.22	
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)	427	2344	2344	891	390	
v/s Ratio Prot		c0.21	0.19		c0.16	
v/s Ratio Perm	0.03			0.02		
v/c Ratio	0.05	0.32	0.29	0.04	0.73	
Uniform Delay, d1	6.0	7.3	7.1	5.9	32.3	
Progression Factor	1.63	1.60	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4	0.3	0.1	6.6	
Delay (s)	9.9	12.0	7.4	6.0	39.0	
Level of Service	A	B	A	A	D	
Approach Delay (s)		11.9	7.3		39.0	
Approach LOS		B	A		D	

Intersection Summary

HCM 2000 Control Delay	14.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
8: The Gore Rd & Street Y

FT_Full Build-out 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.997	0.850		
Flt Protected	0.957				0.950	
Satd. Flow (prot)	1793	0	1780	1551	1765	1921
Flt Permitted	0.957				0.570	
Satd. Flow (perm)	1694	0	1780	1319	969	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		2	45		
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

FT_Full Build-out 2041
Morning Peak Hour

	↙	↑	↗	↘	↓
Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↗	↘	↓
Traffic Volume (vph)	210	292	50	15	996
Future Volume (vph)	210	292	50	15	996
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

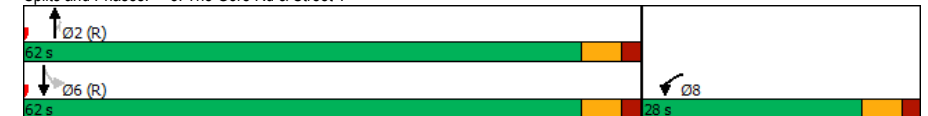
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	16.5	61.5	61.5	61.5	61.5
Actuated g/C Ratio	0.18	0.68	0.68	0.68	0.68
v/c Ratio	0.70	0.24	0.05	0.02	0.76
Control Delay	44.5	6.7	2.2	6.3	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	6.7	2.2	6.3	12.0
LOS	D	A	A	A	B
Approach Delay	44.5	6.1			11.9
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: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 15.5
 Intersection Capacity Utilization 79.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

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














Queues
8: The Gore Rd & Street Y

FT_Full Build-out 2041
Morning Peak Hour

					
Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	233	297	45	15	996
v/c Ratio	0.70	0.24	0.05	0.02	0.76
Control Delay	44.5	6.7	2.2	6.3	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.5	6.7	2.2	6.3	12.0
Queue Length 50th (m)	38.5	18.4	0.0	0.6	76.3
Queue Length 95th (m)	58.7	36.3	4.0	m1.8	137.9
Internal Link Dist (m)	110.7	554.8			187.4
Turn Bay Length (m)			25.0		
Base Capacity (vph)	442	1217	916	662	1313
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	0.53	0.24	0.05	0.02	0.76
Intersection Summary					
m Volume for 95th percentile queue is metered by upstream signal.					

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

FT_Full Build-out 2041
Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	210	23	292	50	15	996
Future Volume (vph)	210	23	292	50	15	996
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)	1792		1781	1319	1610	1921
Flt Permitted	0.96		1.00	1.00	0.57	1.00
Satd. Flow (perm)	1792		1781	1319	967	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	210	23	292	50	15	996
RTOR Reduction (vph)	5	0	1	14	0	0
Lane Group Flow (vph)	228	0	296	31	15	996
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	16.5		61.5	61.5	61.5	61.5
Effective Green, g (s)	16.5		61.5	61.5	61.5	61.5
Actuated g/C Ratio	0.18		0.68	0.68	0.68	0.68
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)	328		1217	901	660	1312
v/s Ratio Prot	c0.13		0.17			c0.52
v/s Ratio Perm				0.02	0.02	
v/c Ratio	0.70		0.24	0.03	0.02	0.76
Uniform Delay, d1	34.4		5.4	4.6	4.6	9.4
Progression Factor	1.00		1.00	1.00	1.05	0.75
Incremental Delay, d2	6.3		0.5	0.1	0.1	3.4
Delay (s)	40.7		5.9	4.7	4.9	10.4
Level of Service	D		A	A	A	B
Approach Delay (s)	40.7		5.7			10.3
Approach LOS	D		A			B
Intersection Summary						
HCM 2000 Control Delay			13.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			79.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics
9: The Gore Rd & Street DDD

FT_Full Build-out 2041
Morning Peak Hour

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		0.983			
Flt Protected						
Satd. Flow (prot)	1662	0	1856	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1662	0	1856	0	1858	1921
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

FT_Full Build-out 2041
Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	16	274	40	0	1012
Future Volume (Veh/h)	0	16	274	40	0	1012
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	16	274	40	0	1012
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	0.72	0.97			0.97	
vC, conflicting volume	1406	394			364	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1272	358			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)	124	614			1153	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	16	314	0	1012		
Volume Left	0	0	0	0		
Volume Right	16	40	0	0		
cSH	614	1700	1700	1700		
Volume to Capacity	0.03	0.18	0.00	0.60		
Queue Length 95th (m)	0.6	0.0	0.0	0.0		
Control Delay (s)	11.0	0.0	0.0	0.0		
Lane LOS	B					
Approach Delay (s)	11.0	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			71.7%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FT_Full Build-out 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98		0.91	
Frt	0.984		0.978			
Flt Protected	0.958				0.950	
Satd. Flow (prot)	1785	0	1802	0	1765	1921
Flt Permitted	0.958				0.582	
Satd. Flow (perm)	1624	0	1802	0	987	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	7		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

FT_Full Build-out 2041
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	208	242	42	803
Future Volume (vph)	208	242	42	803
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

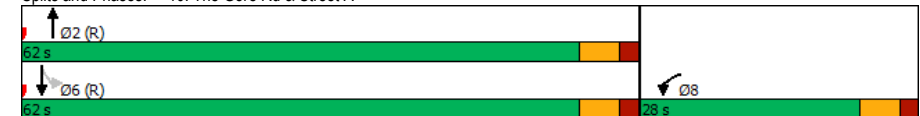
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.7	61.3	61.3	61.3
Actuated g/C Ratio	0.19	0.68	0.68	0.68
v/c Ratio	0.70	0.24	0.06	0.61
Control Delay	44.0	6.1	6.3	11.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.0	6.1	6.3	11.4
LOS	D	A	A	B
Approach Delay	44.0	6.1		11.1
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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.70
 Intersection Signal Delay: 15.7
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FT_Full Build-out 2041
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	236	290	42	803
v/c Ratio	0.70	0.24	0.06	0.61
Control Delay	44.0	6.1	6.3	11.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.0	6.1	6.3	11.4
Queue Length 50th (m)	38.8	14.7	2.2	69.0
Queue Length 95th (m)	58.5	29.5	6.9	128.2
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	444	1236	673	1310
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	0.23	0.06	0.61

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↖		↗	↘
Traffic Volume (vph)	208	28	242	48	42	803
Future Volume (vph)	208	28	242	48	42	803
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		0.91	1.00
Frt	0.98		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1785		1802		1609	1921
Flt Permitted	0.96		1.00		0.58	1.00
Satd. Flow (perm)	1785		1802		986	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	208	28	242	48	42	803
RTOR Reduction (vph)	6	0	7	0	0	0
Lane Group Flow (vph)	230	0	283	0	42	803
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	16.7		61.3		61.3	61.3
Effective Green, g (s)	16.7		61.3		61.3	61.3
Actuated g/C Ratio	0.19		0.68		0.68	0.68
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)	331		1227		671	1308
v/s Ratio Prot	c0.13		0.16			c0.42
v/s Ratio Perm					0.04	
v/c Ratio	0.70		0.23		0.06	0.61
Uniform Delay, d1	34.3		5.4		4.8	7.9
Progression Factor	1.00		0.96		1.00	1.00
Incremental Delay, d2	6.2		0.4		0.2	2.2
Delay (s)	40.5		5.7		5.0	10.0
Level of Service	D		A		A	B
Approach Delay (s)	40.5		5.7			9.8
Approach LOS	D		A			A

Intersection Summary

HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
12: Street VV & Street A

FT_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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			0.983						0.972	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1919	0	0	1888	0	0	1789	0	0	1796	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1919	0	0	1888	0	0	1789	0	0	1796	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

FT_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	110	1	0	203	29	7	0	0	19	0	5
Future Volume (vph)	0	110	1	0	203	29	7	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	110	1	0	203	29	7	0	0	19	0	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	111	232	7	24								
Volume Left (vph)	0	0	7	19								
Volume Right (vph)	1	29	0	5								
Hadj (s)	-0.01	-0.07	0.23	0.03								
Departure Headway (s)	4.2	4.0	4.9	4.7								
Degree Utilization, x	0.13	0.26	0.01	0.03								
Capacity (veh/h)	840	885	679	707								
Control Delay (s)	7.8	8.4	7.9	7.8								
Approach Delay (s)	7.8	8.4	7.9	7.8								
Approach LOS	A	A	A	A								

Intersection Summary

Delay				8.2								
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

FT_Full Build-out 2041
Morning Peak Hour



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	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		0.983						0.981			0.958	
Flt Protected		0.999			0.994			0.966				
Satd. Flow (prot)	0	1887	0	0	1910	0	0	1790	0	0	1840	0
Flt Permitted		0.999			0.994			0.966				
Satd. Flow (perm)	0	1887	0	0	1910	0	0	1790	0	0	1840	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

FT_Full Build-out 2041
Morning Peak Hour



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	117	17	25	186	0	20	4	4	0	20
Future Volume (vph)		2	117	17	25	186	0	20	4	4	0	20
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
Hourly flow rate (vph)		2	117	17	25	186	0	20	4	4	0	20
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	136	211	28	29								
Volume Left (vph)	2	25	20	0								
Volume Right (vph)	17	0	4	9								
Hadj (s)	-0.07	0.02	0.09	-0.19								
Departure Headway (s)	4.2	4.2	4.8	4.5								
Degree Utilization, x	0.16	0.25	0.04	0.04								
Capacity (veh/h)	839	841	695	730								
Control Delay (s)	8.0	8.6	8.0	7.7								
Approach Delay (s)	8.0	8.6	8.0	7.7								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.3
Level of Service	A
Intersection Capacity Utilization	44.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
15: Street I & Street A

FT_Full Build-out 2041
Morning Peak Hour



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						0.988			0.949	
Flt Protected		0.999			0.996			0.960				
Satd. Flow (prot)	0	1904	0	0	1913	0	0	1789	0	0	1823	0
Flt Permitted		0.999			0.996			0.960				
Satd. Flow (perm)	0	1904	0	0	1913	0	0	1789	0	0	1823	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

FT_Full Build-out 2041
Morning Peak Hour



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	107	7	15	156	0	29	3	3	0	15	9
Future Volume (vph)	2	107	7	15	156	0	29	3	3	0	15	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)	2	107	7	15	156	0	29	3	3	0	15	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	116	171	35	24								
Volume Left (vph)	2	15	29	0								
Volume Right (vph)	7	0	3	9								
Hadj (s)	-0.03	0.02	0.15	-0.22								
Departure Headway (s)	4.2	4.2	4.7	4.3								
Degree Utilization, x	0.13	0.20	0.05	0.03								
Capacity (veh/h)	840	845	715	763								
Control Delay (s)	7.8	8.2	7.9	7.5								
Approach Delay (s)	7.8	8.2	7.9	7.5								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.0
Level of Service	A
Intersection Capacity Utilization	33.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
18: Humber Station Rd & Street A

FT_Full Build-out 2041
Morning Peak Hour



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		0.936			0.988			0.984			0.995	
Flt Protected		0.999			0.983			0.974			0.994	
Satd. Flow (prot)	0	1796	0	0	1866	0	0	1809	0	0	1900	0
Flt Permitted		0.999			0.983			0.974			0.994	
Satd. Flow (perm)	0	1796	0	0	1866	0	0	1809	0	0	1900	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

FT_Full Build-out 2041
Morning Peak Hour



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	73	68	43	68	11	78	52	18	19	141	6
Future Volume (vph)	2	73	68	43	68	11	78	52	18	19	141	6
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	73	68	43	68	11	78	52	18	19	141	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	143	122	148	166								
Volume Left (vph)	2	43	78	19								
Volume Right (vph)	68	11	18	6								
Hadj (s)	-0.28	0.02	0.06	0.00								
Departure Headway (s)	4.6	4.9	4.8	4.7								
Degree Utilization, x	0.18	0.17	0.20	0.22								
Capacity (veh/h)	727	682	699	709								
Control Delay (s)	8.6	8.8	9.0	9.1								
Approach Delay (s)	8.6	8.8	9.0	9.1								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.9
Level of Service	A
Intersection Capacity Utilization	54.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
48: Humber Station Rd & Street E

FT_Full Build-out 2041
Morning Peak Hour

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			0.93		0.93		0.86	0.91		
Frt		0.880			0.996				0.850			
Flt Protected		0.998			0.954		0.950		0.950			
Satd. Flow (prot)	0	1565	0	0	1818	0	1789	1883	1633	1825	1921	0
Flt Permitted		0.985			0.689		0.567		0.642			
Satd. Flow (perm)	0	1538	0	0	1231	0	994	1883	1411	1120	1921	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			2				359			
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

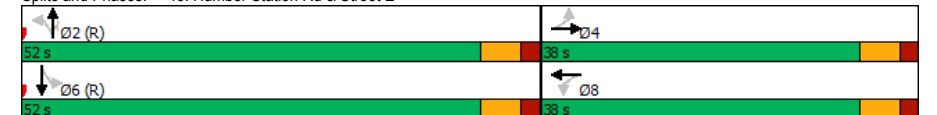
FT_Full Build-out 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	4	132	1	21	183	359	1	319
Future Volume (vph)	3	4	132	1	21	183	359	1	319
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2		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)		15.3		15.3	62.7	62.7	62.7	62.7	62.7
Actuated g/C Ratio		0.17		0.17	0.70	0.70	0.70	0.70	0.70
v/c Ratio		0.20		0.65	0.03	0.14	0.33	0.00	0.24
Control Delay		11.4		47.8	3.5	3.6	1.6	6.0	6.3
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		11.4		47.8	3.5	3.6	1.6	6.0	6.3
LOS		B		D	A	A	A	A	A
Approach Delay		11.4		47.8		2.3			6.3
Approach LOS		B		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: 0.65
 Intersection Signal Delay: 9.8
 Intersection Capacity Utilization 59.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

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



Queues
48: Humber Station Rd & Street E

FT_Full Build-out 2041
Morning Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	61	137	21	183	359	1	319
v/c Ratio	0.20	0.65	0.03	0.14	0.33	0.00	0.24
Control Delay	11.4	47.8	3.5	3.6	1.6	6.0	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	47.8	3.5	3.6	1.6	6.0	6.3
Queue Length 50th (m)	1.1	22.9	0.8	7.5	1.2	0.1	17.9
Queue Length 95th (m)	10.5	38.5	2.2	10.9	8.7	0.6	37.1
Internal Link Dist (m)	116.6	92.4		129.1			337.3
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	581	438	692	1311	1091	780	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	0.10	0.31	0.03	0.14	0.33	0.00	0.24

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	4	54	132	1	4	21	183	359	1	319	0
Future Volume (vph)	3	4	54	132	1	4	21	183	359	1	319	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	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Frbp, ped/bikes		0.93			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	0.91	1.00	
Frt		0.88			1.00		1.00	1.00	0.85	1.00	1.00	
Fit Protected		1.00			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1559			1704		1653	1883	1411	1657	1921	
Fit Permitted		0.98			0.69		0.57	1.00	1.00	0.64	1.00	
Satd. Flow (perm)		1538			1231		987	1883	1411	1120	1921	
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)	3	4	54	132	1	4	21	183	359	1	319	0
RTOR Reduction (vph)	0	45	0	0	2	0	0	0	109	0	0	0
Lane Group Flow (vph)	0	16	0	0	135	0	21	183	250	1	319	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2		2		6
Permitted Phases	4			8			2		2		6	
Actuated Green, G (s)		15.3			15.3		62.7	62.7	62.7	62.7	62.7	62.7
Effective Green, g (s)		15.3			15.3		62.7	62.7	62.7	62.7	62.7	62.7
Actuated g/C Ratio		0.17			0.17		0.70	0.70	0.70	0.70	0.70	0.70
Clearance Time (s)		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
Lane Grp Cap (vph)		261			209		687	1311	982	780	1338	
v/s Ratio Prot								0.10				0.17
v/s Ratio Perm		0.01			c0.11		0.02		c0.18	0.00		
v/c Ratio		0.06			0.65		0.03	0.14	0.25	0.00	0.24	
Uniform Delay, d1		31.3			34.8		4.2	4.6	5.0	4.1	5.0	
Progression Factor		1.00			1.00		0.60	0.60	1.00	1.00	1.00	
Incremental Delay, d2		0.1			6.7		0.1	0.2	0.6	0.0	0.4	
Delay (s)		31.4			41.6		2.6	3.0	5.6	4.1	5.4	
Level of Service		C			D		A	A	A	A	A	
Approach Delay (s)		31.4			41.6			4.7			5.4	
Approach LOS		C			D			A			A	

Intersection Summary

HCM 2000 Control Delay	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

FT_Full Build-out 2041

58: Humber Station Rd & Street Y

Morning Peak Hour

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	0.98		0.97		0.92	0.94	0.98		0.97	1.00	
Frt	0.972			0.850			0.961			0.997		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1839	0	1825	1921	1633	1789	3383	0	1825	3630	0
Flt Permitted	0.708			0.274			0.470			0.431		
Satd. Flow (perm)	1273	1839	0	508	1921	1500	835	3383	0	803	3630	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				131		62			2	
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

FT_Full Build-out 2041

58: Humber Station Rd & Street Y

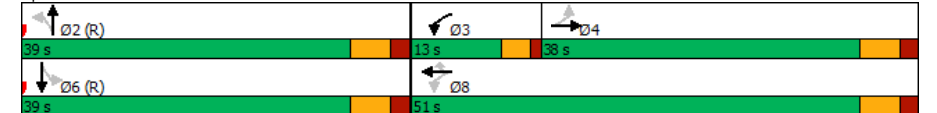
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	30	252	144	76	131	69	390	83	458
Future Volume (vph)	30	252	144	76	131	69	390	83	458
Turn Type	Perm	NA	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases		4	3	8			2		6
Permitted Phases	4		8		8	2		6	
Detector Phase	4	4	3	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	11.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	38.0	38.0	13.0	51.0	51.0	39.0	39.0	39.0	39.0
Total Split (%)	42.2%	42.2%	14.4%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	1.0	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	4.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lead						
Lead-Lag Optimize?	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	19.9	19.9	36.1	34.1	34.1	43.9	43.9	43.9	43.9
Actuated g/C Ratio	0.22	0.22	0.40	0.38	0.38	0.49	0.49	0.49	0.49
v/c Ratio	0.11	0.74	0.41	0.10	0.20	0.17	0.31	0.21	0.26
Control Delay	26.2	41.5	19.5	16.1	3.4	22.7	18.1	19.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	41.5	19.5	16.1	3.4	22.7	18.1	19.4	16.9
LOS	C	D	B	B	A	C	B	B	B
Approach Delay		40.1		12.7			18.7		17.3
Approach LOS		D		B			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: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 21.1
 Intersection Capacity Utilization 64.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

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



Queues
58: Humber Station Rd & Street Y

FT_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	309	144	76	131	69	528	83	467
v/c Ratio	0.11	0.74	0.41	0.10	0.20	0.17	0.31	0.21	0.26
Control Delay	26.2	41.5	19.5	16.1	3.4	22.7	18.1	19.4	16.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.2	41.5	19.5	16.1	3.4	22.7	18.1	19.4	16.9
Queue Length 50th (m)	4.3	49.6	16.4	8.6	0.0	6.7	24.8	10.4	31.3
Queue Length 95th (m)	10.4	70.5	23.5	14.5	8.9	22.5	55.6	25.1	50.2
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)	452	662	357	960	815	407	1682	391	1772
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	0.47	0.40	0.08	0.16	0.17	0.31	0.21	0.26

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	30	252	57	144	76	131	69	390	138	83	458	9
Future Volume (vph)	30	252	57	144	76	131	69	390	138	83	458	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	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	
Frbp, ped/bikes	1.00	0.98		1.00	1.00	0.92	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	0.94	1.00		0.99	1.00	1.00	0.94	1.00		0.97	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1708	1840		1812	1921	1500	1682	3382		1767	3630	
Fit Permitted	0.71	1.00		0.27	1.00	1.00	0.47	1.00		0.43	1.00	
Satd. Flow (perm)	1272	1840		523	1921	1500	832	3382		801	3630	
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)	30	252	57	144	76	131	69	390	138	83	458	9
RTOR Reduction (vph)	0	11	0	0	0	81	0	32	0	0	1	0
Lane Group Flow (vph)	30	298	0	144	76	50	69	496	0	83	466	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	2%	2%	0%	0%	0%	0%
Turn Type	Perm	NA		pm-pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		4		3	8		2				6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	20.0	20.0		34.1	34.1	34.1	43.9	43.9		43.9	43.9	
Effective Green, g (s)	20.0	20.0		34.1	34.1	34.1	43.9	43.9		43.9	43.9	
Actuated g/C Ratio	0.22	0.22		0.38	0.38	0.38	0.49	0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0		4.0	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)	282	408		342	727	568	405	1649		390	1770	
v/s Ratio Prot		c0.16		c0.05	0.04			c0.15			0.13	
v/s Ratio Perm	0.02			0.11		0.03	0.08			0.10		
v/c Ratio	0.11	0.73		0.42	0.10	0.09	0.17	0.30		0.21	0.26	
Uniform Delay, d1	27.9	32.5		19.9	18.1	18.0	12.9	13.8		13.2	13.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.33	1.29		1.09	1.10	
Incremental Delay, d2	0.2	6.6		0.8	0.1	0.1	0.9	0.5		1.2	0.4	
Delay (s)	28.0	39.1		20.7	18.1	18.0	18.4	18.4		15.6	15.3	
Level of Service	C	D		C	B	B	B	B		B	B	
Approach Delay (s)		38.1			19.1		18.3				15.3	
Approach LOS		D			B		B				B	

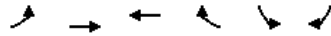
Intersection Summary

HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FT_Full Build-out 2041
Morning Peak Hour



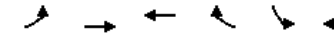
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.983		0.983	
Flt Protected					0.958	
Satd. Flow (prot)	0	1921	1888	0	1809	0
Flt Permitted					0.958	
Satd. Flow (perm)	0	1921	1888	0	1809	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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	103	232	34	35	5
Future Volume (vph)	0	103	232	34	35	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	103	232	34	35	5
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	103	266	40			
Volume Left (vph)	0	0	35			
Volume Right (vph)	0	34	5			
Hadj (s)	0.00	-0.08	0.10			
Departure Headway (s)	4.3	4.0	4.8			
Degree Utilization, x	0.12	0.30	0.05			
Capacity (veh/h)	825	880	695			
Control Delay (s)	7.8	8.7	8.1			
Approach Delay (s)	7.8	8.7	8.1			
Approach LOS	A	A	A			

Intersection Summary

Delay	8.4
Level of Service	A
Intersection Capacity Utilization	32.9%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
64: Street JJ & Street Y

FT_Full Build-out 2041
Morning Peak Hour



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			0.993			0.951			0.994	
Flt Protected		0.999			0.995			0.989			0.993	
Satd. Flow (prot)	0	1902	0	0	1898	0	0	1784	0	0	1896	0
Flt Permitted		0.999			0.995			0.989			0.993	
Satd. Flow (perm)	0	1902	0	0	1898	0	0	1784	0	0	1896	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

FT_Full Build-out 2041
Morning Peak Hour



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	175	12	28	243	15	21	40	35	30	184	10
Future Volume (vph)	2	175	12	28	243	15	21	40	35	30	184	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)	2	175	12	28	243	15	21	40	35	30	184	10

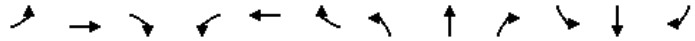
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	189	286	96	224
Volume Left (vph)	2	28	21	30
Volume Right (vph)	12	15	35	10
Hadj (s)	-0.04	-0.01	-0.15	0.00
Departure Headway (s)	5.2	5.1	5.4	5.3
Degree Utilization, x	0.27	0.40	0.14	0.33
Capacity (veh/h)	641	669	586	625
Control Delay (s)	10.1	11.4	9.3	10.9
Approach Delay (s)	10.1	11.4	9.3	10.9
Approach LOS	B	B	A	B

Intersection Summary

Delay	10.7
Level of Service	B
Intersection Capacity Utilization	49.4%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

FT_Full Build-out 2041
Morning Peak Hour



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		0.987			0.993			0.995			0.991	
Flt Protected		0.999			0.997			0.987			0.994	
Satd. Flow (prot)	0	1894	0	0	1902	0	0	1851	0	0	1892	0
Flt Permitted		0.999			0.997			0.987			0.994	
Satd. Flow (perm)	0	1894	0	0	1902	0	0	1851	0	0	1892	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

FT_Full Build-out 2041
Morning Peak Hour



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	228	25	18	232	14	15	42	2	26	188	16
Future Volume (vph)	3	228	25	18	232	14	15	42	2	26	188	16
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	228	25	18	232	14	15	42	2	26	188	16

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	256	264	59	230
Volume Left (vph)	3	18	15	26
Volume Right (vph)	25	14	2	16
Hadj (s)	-0.06	-0.02	0.06	-0.02
Departure Headway (s)	5.0	5.1	5.7	5.3
Degree Utilization, x	0.36	0.37	0.09	0.34
Capacity (veh/h)	668	667	541	622
Control Delay (s)	10.8	11.0	9.3	11.0
Approach Delay (s)	10.8	11.0	9.3	11.0
Approach LOS	B	B	A	B

Intersection Summary

Delay	10.9
Level of Service	B
Intersection Capacity Utilization	45.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FT_Full Build-out 2041
Morning Peak Hour



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	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		0.944						0.989				
Flt Protected					0.956			0.998				
Satd. Flow (prot)	0	1814	0	0	1837	0	0	1862	0	0	1921	0
Flt Permitted					0.956			0.998				
Satd. Flow (perm)	0	1814	0	0	1837	0	0	1862	0	0	1921	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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	14	10	22	2	0	2	54	5	0	249	0
Future Volume (Veh/h)	0	14	10	22	2	0	2	54	5	0	249	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	14	10	22	2	0	2	54	5	0	249	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)								262				
pX, platoon unblocked												
vC, conflicting volume	360	412	349	426	410	106	299			109		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	360	412	349	426	410	106	299			109		
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	97	98	95	100	100	100			100		
cM capacity (veh/h)	534	488	640	447	489	912	1208			1430		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	24	24	61	249
Volume Left	0	22	2	0
Volume Right	10	0	5	0
cSH	541	450	1208	1430
Volume to Capacity	0.04	0.05	0.00	0.00
Queue Length 95th (m)	1.1	1.3	0.0	0.0
Control Delay (s)	12.0	13.4	0.3	0.0
Lane LOS	B	B	A	
Approach Delay (s)	12.0	13.4	0.3	0.0
Approach LOS	B	B		

Intersection Summary

Average Delay	1.8
Intersection Capacity Utilization	31.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
85: Street I & Street EE

FT_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.921										
Flt Protected								0.997				
Satd. Flow (prot)	0	1769	0	0	1921	0	0	1878	0	0	1921	0
Flt Permitted								0.997				
Satd. Flow (perm)	0	1769	0	0	1921	0	0	1878	0	0	1921	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

FT_Full Build-out 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	14	20	0	2	0	4	57	0	0	255	0
Future Volume (Veh/h)	0	14	20	0	2	0	4	57	0	0	255	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	14	20	0	2	0	4	57	0	0	255	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	421	420	355	447	420	157	305				107	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	421	420	355	447	420	157	305				107	
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	97	97	100	100	100	100				100	
cM capacity (veh/h)	466	482	635	426	482	819	1202				1432	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	34	2	61	255								
Volume Left	0	0	4	0								
Volume Right	20	0	0	0								
cSH	562	482	1202	1432								
Volume to Capacity	0.06	0.00	0.00	0.00								
Queue Length 95th (m)	1.5	0.1	0.1	0.0								
Control Delay (s)	11.8	12.5	0.6	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.8	12.5	0.6	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization			31.7%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FT_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
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)	1825	0	0	3579	3649	0
Flt Permitted	0.950					
Satd. Flow (perm)	1825	0	0	3579	3649	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)					1	
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

FT_Full Build-out 2041
Morning Peak Hour

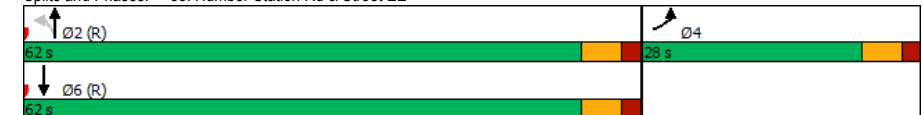


Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑↑	↑↑
Traffic Volume (vph)	14	588	709
Future Volume (vph)	14	588	709
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	28.0	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-Max	C-Max
Act Effct Green (s)	11.0	74.0	74.0
Actuated g/C Ratio	0.12	0.82	0.82
v/c Ratio	0.06	0.20	0.24
Control Delay	31.1	3.9	2.6
Queue Delay	0.0	0.0	0.0
Total Delay	31.1	3.9	2.6
LOS	C	A	A
Approach Delay	31.1	3.9	2.6
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.24
 Intersection Signal Delay: 3.5
 Intersection Capacity Utilization 33.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
88: Humber Station Rd & Street EE

FT_Full Build-out 2041
Morning Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	14	588	711
v/c Ratio	0.06	0.20	0.24
Control Delay	31.1	3.9	2.6
Queue Delay	0.0	0.0	0.0
Total Delay	31.1	3.9	2.6
Queue Length 50th (m)	2.4	9.8	9.6
Queue Length 95th (m)	7.0	27.7	20.1
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	446	2942	2999
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.03	0.20	0.24

Intersection Summary

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

FT_Full Build-out 2041
Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑↑	↑↑	
Traffic Volume (vph)	14	0	0	588	709	2
Future Volume (vph)	14	0	0	588	709	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	
Frbp, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1825			3579	3647	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1825			3579	3647	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	14	0	0	588	709	2
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	14	0	0	588	711	0
Confl. Peds. (#/hr)			50			50
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%
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)	178			2751	2804	
v/s Ratio Prot	c0.01			0.16	c0.19	
v/s Ratio Perm						
v/c Ratio	0.08			0.21	0.25	
Uniform Delay, d1	36.9			2.9	3.0	
Progression Factor	1.00			1.00	0.63	
Incremental Delay, d2	0.2			0.2	0.2	
Delay (s)	37.1			3.1	2.1	
Level of Service	D			A	A	
Approach Delay (s)	37.1			3.1	2.1	
Approach LOS	D			A	A	

Intersection Summary

HCM 2000 Control Delay	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
1: The Gore Rd & King St

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

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			0.94		0.93	0.97	
Frt	0.949			0.993			0.939			0.966		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1562	1612	0	1681	1761	0	1535	1608	0	1681	1795	0
Flt Permitted	0.311			0.122			0.071			0.492		
Satd. Flow (perm)	489	1612	0	216	1761	0	115	1608	0	812	1795	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			3			39			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

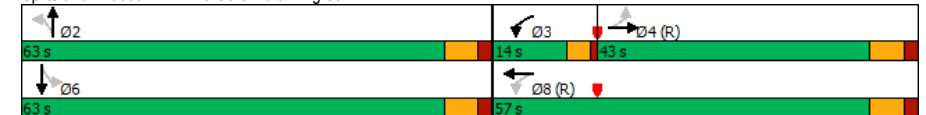
FT_Full Build-out_No Improvements 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	87	335	262	539	11	192	100	772
Future Volume (vph)	87	335	262	539	11	192	100	772
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)	43.0	43.0	14.0	57.0	63.0	63.0	63.0	63.0
Total Split (%)	35.8%	35.8%	11.7%	47.5%	52.5%	52.5%	52.5%	52.5%
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)	36.4	36.4	53.0	50.4	56.4	56.4	56.4	56.4
Actuated g/C Ratio	0.30	0.30	0.44	0.42	0.47	0.47	0.47	0.47
v/c Ratio	0.59	1.00	1.21	0.76	0.20	0.42	0.26	1.18
Control Delay	53.9	81.5	153.4	37.7	30.3	20.2	21.6	121.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	81.5	153.4	37.7	30.3	20.2	21.6	121.7
LOS	D	F	F	D	C	C	C	F
Approach Delay		77.4		74.3		20.5		112.6
Approach LOS		E		E		C		F

Intersection Summary

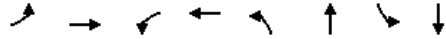
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.21
 Intersection Signal Delay: 83.4
 Intersection Capacity Utilization 134.8%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

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



Queues
1: The Gore Rd & King St

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	87	506	262	566	11	323	100	1002
v/c Ratio	0.59	1.00	1.21	0.76	0.20	0.42	0.26	1.18
Control Delay	53.9	81.5	153.4	37.7	30.3	20.2	21.6	121.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.9	81.5	153.4	37.7	30.3	20.2	21.6	121.7
Queue Length 50th (m)	18.0	~120.4	~58.1	115.7	1.5	44.3	14.4	~292.1
Queue Length 95th (m)	#40.7	#193.6	#112.5	162.3	6.9	68.4	27.4	#372.9
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)	148	504	217	741	54	776	381	852
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	0.59	1.00	1.21	0.76	0.20	0.42	0.26	1.18

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 FT_Full Build-out_No Improvements 2041
1: The Gore Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	87	335	171	262	539	27	11	192	131	100	772	230
Future Volume (vph)	87	335	171	262	539	27	11	192	131	100	772	230
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	
Frbp, ped/bikes	1.00	0.95		1.00	0.99		1.00	0.94		1.00	0.97	
Frt, ped/bikes	0.96	1.00		1.00	1.00		1.00	1.00		0.93	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)	1494	1613		1681	1760		1535	1609		1567	1794	
Flt Permitted	0.31	1.00		0.12	1.00		0.07	1.00		0.49	1.00	
Satd. Flow (perm)	489	1613		216	1760		115	1609		811	1794	
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)	87	335	171	262	539	27	11	192	131	100	772	230
RTOR Reduction (vph)	0	15	0	0	2	0	0	21	0	0	9	0
Lane Group Flow (vph)	87	491	0	262	564	0	11	302	0	100	993	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	15%	0%	14%	5%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases		4		3	8		2	2		6	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.4	36.4		50.4	50.4		56.4	56.4		56.4	56.4	
Effective Green, g (s)	36.4	36.4		50.4	50.4		56.4	56.4		56.4	56.4	
Actuated g/C Ratio	0.30	0.30		0.42	0.42		0.47	0.47		0.47	0.47	
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)	148	489		212	739		54	756		381	843	
v/s Ratio Prot		0.30		c0.10	0.32			0.19			c0.55	
v/s Ratio Perm	0.18			c0.42			0.10			0.12		
v/c Ratio	0.59	1.00		1.24	0.76		0.20	0.40		0.26	1.18	
Uniform Delay, d1	35.4	41.8		28.2	29.7		18.6	20.8		19.2	31.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.0	41.5		139.9	7.4		1.9	0.3		0.4	92.3	
Delay (s)	51.4	83.3		168.1	37.1		20.5	21.1		19.6	124.1	
Level of Service	D	F		F	D		C	C		B	F	
Approach Delay (s)		78.7			78.5			21.1			114.6	
Approach LOS		E			E			C			F	

Intersection Summary

HCM 2000 Control Delay	85.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	134.8%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

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			0.979			0.993			0.975	
Flt Protected		0.994			0.995			0.990			0.989	
Satd. Flow (prot)	0	1618	0	0	1763	0	0	1758	0	0	1653	0
Flt Permitted		0.759			0.746			0.710			0.777	
Satd. Flow (perm)	0	1231	0	0	1319	0	0	1253	0	0	1282	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

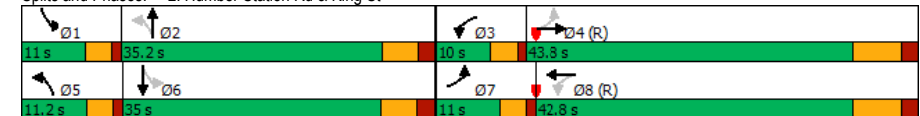
FT_Full Build-out_No Improvements 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	115	508	73	538	75	275	149	421
Future Volume (vph)	115	508	73	538	75	275	149	421
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		1.73		1.18		0.73		1.35
Control Delay		358.4		122.7		35.2		195.9
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		358.4		122.7		35.2		195.9
LOS		F		F		D		F
Approach Delay		358.4		122.7		35.2		195.9
Approach LOS		F		F		D		F

Intersection Summary

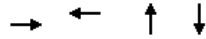
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.73
 Intersection Signal Delay: 215.1
 Intersection LOS: F
 Intersection Capacity Utilization 144.4%
 ICU Level of Service H
 Analysis Period (min) 15

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



Queues
2: Humber Station Rd & King St

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



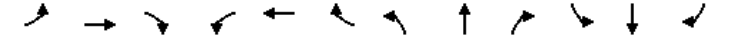
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1024	726	368	700
v/c Ratio	1.73	1.18	0.73	1.35
Control Delay	358.4	122.7	35.2	195.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	358.4	122.7	35.2	195.9
Queue Length 50th (m)	~306.0	~175.5	61.0	~185.5
Queue Length 95th (m)	#384.3	#247.3	98.0	#256.5
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	592	617	505	520
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	1.73	1.18	0.73	1.35

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 FT_Full Build-out_No Improvements 2041
2: Humber Station Rd & King St

Morning Peak Hour



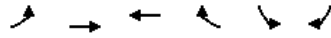
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	115	508	401	73	538	115	75	275	18	149	421	130
Future Volume (vph)	115	508	401	73	538	115	75	275	18	149	421	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.97	
Flt Protected		0.99			0.99			0.99			0.99	
Satd. Flow (prot)		1615			1762			1751			1637	
Flt Permitted		0.76			0.75			0.71			0.78	
Satd. Flow (perm)		1232			1321			1256			1285	
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)	115	508	401	73	538	115	75	275	18	149	421	130
RTOR Reduction (vph)	0	21	0	0	6	0	0	2	0	0	7	0
Lane Group Flow (vph)	0	1003	0	0	720	0	0	366	0	0	693	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	16%	0%	72%	6%	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)		571			612			504			514	
v/s Ratio Prot												
v/s Ratio Perm		c0.81			0.55			0.29			c0.54	
v/c Ratio		1.76			1.18			0.73			1.35	
Uniform Delay, d1		26.8			26.8			25.3			30.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		347.7			95.8			5.2			169.1	
Delay (s)		374.5			122.6			30.4			199.1	
Level of Service		F			F			C			F	
Approach Delay (s)		374.5			122.6			30.4			199.1	
Approach LOS		F			F			C			F	

Intersection Summary

HCM 2000 Control Delay	221.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.73		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	144.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



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	0.956	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	1883	1883	1601	1677	0
Flt Permitted	0.276				0.967	
Satd. Flow (perm)	503	1883	1883	1361	1572	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				25	27	
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

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↕	↕	↕	↕	↕
Traffic Volume (vph)	22	569	739	46	211
Future Volume (vph)	22	569	739	46	211
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)	59.0	59.0	59.0	59.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	65.6%	34.4%
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

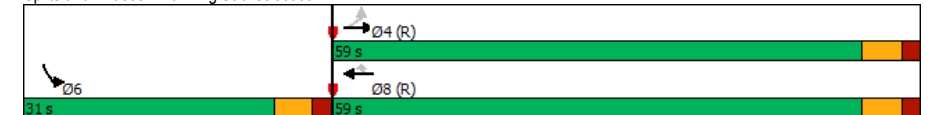
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	57.9	57.9	57.9	57.9	20.1
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.22
v/c Ratio	0.07	0.47	0.61	0.05	0.79
Control Delay	8.2	10.6	13.9	2.7	44.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	10.6	13.9	2.7	44.7
LOS	A	B	B	A	D
Approach Delay		10.5	13.3		44.7
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: 60
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 18.2
 Intersection Capacity Utilization 68.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

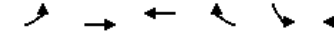


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	569	739	46	314
v/c Ratio	0.07	0.47	0.61	0.05	0.79
Control Delay	8.2	10.6	13.9	2.7	44.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	10.6	13.9	2.7	44.7
Queue Length 50th (m)	1.4	48.0	101.9	1.8	48.5
Queue Length 95th (m)	5.0	82.0	165.9	2.5	73.9
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	323	1211	1211	884	485
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	0.47	0.61	0.05	0.65

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis FT_Full Build-out_No Improvements 2041
6: King St & Street JJ Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	22	569	739	46	211	103
Future Volume (vph)	22	569	739	46	211	103
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	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.85	0.96	
Flpb, ped/bikes	0.98	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)	1688	1883	1883	1361	1678	
FlT Permitted	0.28	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	490	1883	1883	1361	1678	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	22	569	739	46	211	103
RTOR Reduction (vph)	0	0	0	9	21	0
Lane Group Flow (vph)	22	569	739	37	293	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)	57.9	57.9	57.9	57.9	20.1	
Effective Green, g (s)	57.9	57.9	57.9	57.9	20.1	
Actuated g/C Ratio	0.64	0.64	0.64	0.64	0.22	
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)	315	1211	1211	875	374	
v/s Ratio Prot		0.30	c0.39		c0.17	
v/s Ratio Perm	0.04			0.03		
v/c Ratio	0.07	0.47	0.61	0.04	0.78	
Uniform Delay, d1	6.0	8.2	9.4	5.9	32.9	
Progression Factor	1.00	1.00	1.11	0.58	1.00	
Incremental Delay, d2	0.4	1.3	1.9	0.1	10.3	
Delay (s)	6.4	9.5	12.4	3.5	43.2	
Level of Service	A	A	B	A	D	
Approach Delay (s)		9.4	11.9		43.2	
Approach LOS		A	B		D	

Intersection Summary

HCM 2000 Control Delay	16.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

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	0.97			0.85	0.90	
Frt				0.850	0.957	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1730	1883	1883	1601	1681	0
Flt Permitted	0.309				0.967	
Satd. Flow (perm)	548	1883	1883	1361	1574	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				27	26	
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

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↖	↗	↖	↗	↖
Traffic Volume (vph)	22	758	687	46	211
Future Volume (vph)	22	758	687	46	211
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)	59.0	59.0	59.0	59.0	31.0
Total Split (%)	65.6%	65.6%	65.6%	65.6%	34.4%
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

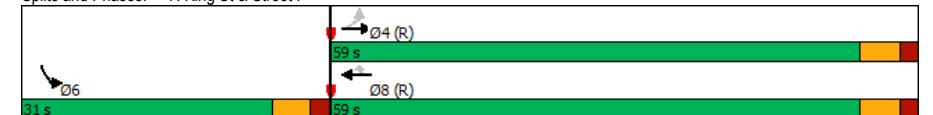
Lead-Lag Optimize?

Recall Mode	C-Max	C-Max	C-Max	C-Max	Min
Act Effct Green (s)	58.1	58.1	58.1	58.1	19.9
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.22
v/c Ratio	0.06	0.62	0.56	0.05	0.79
Control Delay	12.1	18.7	12.1	4.3	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	18.7	12.1	4.3	44.6
LOS	B	B	B	A	D
Approach Delay		18.5	11.6		44.6
Approach LOS		B	B		D

Intersection Summary

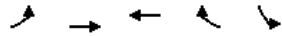
Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 20.2
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

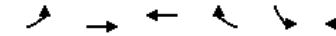


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	22	758	687	46	309
v/c Ratio	0.06	0.62	0.56	0.05	0.79
Control Delay	12.1	18.7	12.1	4.3	44.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.1	18.7	12.1	4.3	44.6
Queue Length 50th (m)	0.0	104.3	62.9	1.1	48.0
Queue Length 95th (m)	m4.7	140.8	108.7	5.6	72.9
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	353	1216	1216	888	485
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	0.06	0.62	0.56	0.05	0.64

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis FT_Full Build-out_No Improvements 2041
7: King St & Street I Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	22	758	687	46	211	98
Future Volume (vph)	22	758	687	46	211	98
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	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	0.85	0.96	
Flpb, ped/bikes	0.97	1.00	1.00	1.00	1.00	
Frpt	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)	1678	1883	1883	1361	1681	
Flt Permitted	0.31	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	545	1883	1883	1361	1681	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	22	758	687	46	211	98
RTOR Reduction (vph)	0	0	0	10	20	0
Lane Group Flow (vph)	22	758	687	36	289	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)	58.1	58.1	58.1	58.1	19.9	
Effective Green, g (s)	58.1	58.1	58.1	58.1	19.9	
Actuated g/C Ratio	0.65	0.65	0.65	0.65	0.22	
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)	351	1215	1215	878	371	
v/s Ratio Prot		c0.40	0.36		c0.17	
v/s Ratio Perm	0.04			0.03		
v/c Ratio	0.06	0.62	0.57	0.04	0.78	
Uniform Delay, d1	5.9	9.5	8.9	5.8	33.0	
Progression Factor	1.56	1.52	1.00	1.00	1.00	
Incremental Delay, d2	0.3	2.1	1.9	0.1	9.9	
Delay (s)	9.5	16.5	10.8	5.9	42.9	
Level of Service	A	B	B	A	D	
Approach Delay (s)		16.3	10.5		42.9	
Approach LOS		B	B		D	

Intersection Summary

HCM 2000 Control Delay	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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)	1758	0	1805	0	1730	1883
Flt Permitted	0.957				0.549	
Satd. Flow (perm)	1596	0	1805	0	922	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		18			
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

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↙
Traffic Volume (vph)	210	292	15	996
Future Volume (vph)	210	292	15	996
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

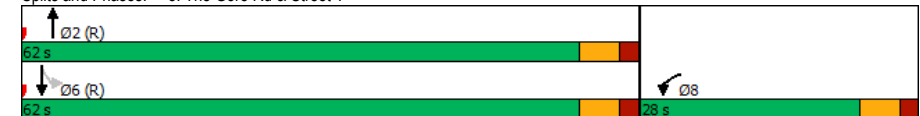
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	16.6	61.4	61.4	61.4
Actuated g/C Ratio	0.18	0.68	0.68	0.68
v/c Ratio	0.71	0.28	0.02	0.78
Control Delay	44.9	6.6	6.7	13.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.9	6.6	6.7	13.2
LOS	D	A	A	B
Approach Delay	44.9	6.6		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: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 79.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

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



Queues
8: The Gore Rd & Street Y











FT_Full Build-out_No Improvements 2041
Morning Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	233	342	15	996
v/c Ratio	0.71	0.28	0.02	0.78
Control Delay	44.9	6.6	6.7	13.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.9	6.6	6.7	13.2
Queue Length 50th (m)	38.4	19.8	0.6	74.5
Queue Length 95th (m)	59.0	38.5	m2.0	#154.6
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)			25.0	
Base Capacity (vph)	434	1236	628	1283
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	0.28	0.02	0.78

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 FT_Full Build-out_No Improvements 2041
8: The Gore Rd & Street Y Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	210	23	292	50	15	996
Future Volume (vph)	210	23	292	50	15	996
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)	1757		1806		1591	1883
Flt Permitted	0.96		1.00		0.55	1.00
Satd. Flow (perm)	1757		1806		919	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	210	23	292	50	15	996
RTOR Reduction (vph)	5	0	6	0	0	0
Lane Group Flow (vph)	228	0	336	0	15	996
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)	16.6		61.4		61.4	61.4
Effective Green, g (s)	16.6		61.4		61.4	61.4
Actuated g/C Ratio	0.18		0.68		0.68	0.68
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)	324		1232		626	1284
v/s Ratio Prot	c0.13		0.19			c0.53
v/s Ratio Perm					0.02	
v/c Ratio	0.70		0.27		0.02	0.78
Uniform Delay, d1	34.4		5.6		4.6	9.7
Progression Factor	1.00		1.00		1.10	0.78
Incremental Delay, d2	6.8		0.5		0.1	3.7
Delay (s)	41.2		6.1		5.1	11.2
Level of Service	D		A		A	B
Approach Delay (s)	41.2		6.1			11.2
Approach LOS	D		A			B


Intersection Summary

HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
9: The Gore Rd & Street DDD

FT_Full Build-out_No Improvements 2041
Morning Peak Hour


						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
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		0.983			
Flt Protected						
Satd. Flow (prot)	1629	0	1851	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1851	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 FT_Full Build-out_No Improvements 2041
9: The Gore Rd & Street DDD

Morning Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		Y			Y
Traffic Volume (veh/h)	0	16	274	40	0	1012
Future Volume (Veh/h)	0	16	274	40	0	1012
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	16	274	40	0	1012
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	0.72	0.97			0.97	
vC, conflicting volume	1406	394			364	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1280	362			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)	120	608			1143	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	16	314	1012			
Volume Left	0	0	0			
Volume Right	16	40	0			
cSH	608	1700	1700			
Volume to Capacity	0.03	0.18	0.60			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	11.1	0.0	0.0			
Lane LOS	B					
Approach Delay (s)	11.1	0.0	0.0			
Approach LOS	B					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			71.7%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98		0.91	
Frt	0.984		0.978			
Flt Protected	0.958				0.950	
Satd. Flow (prot)	1750	0	1796	0	1730	1883
Flt Permitted	0.958				0.582	
Satd. Flow (perm)	1592	0	1796	0	968	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	7		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

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	208	242	42	803
Future Volume (vph)	208	242	42	803
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)	16.9	61.1	61.1	61.1
Actuated g/C Ratio	0.19	0.68	0.68	0.68
v/c Ratio	0.70	0.24	0.06	0.63
Control Delay	44.2	6.6	6.5	11.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.2	6.6	6.5	11.9
LOS	D	A	A	B
Approach Delay	44.2	6.6		11.6
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: 0.70
 Intersection Signal Delay: 16.2
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
10: The Gore Rd & Street A

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	236	290	42	803
v/c Ratio	0.70	0.24	0.06	0.63
Control Delay	44.2	6.6	6.5	11.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.2	6.6	6.5	11.9
Queue Length 50th (m)	38.8	14.7	2.2	70.8
Queue Length 95th (m)	58.5	30.0	7.0	132.8
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	437	1229	659	1282
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	0.24	0.06	0.63

Intersection Summary

HCM Signalized Intersection Capacity Analysis FT_Full Build-out_No Improvements 2041
10: The Gore Rd & Street A Morning Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↓
Traffic Volume (vph)	208	28	242	48	42	803
Future Volume (vph)	208	28	242	48	42	803
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		0.91	1.00
Frt	0.98		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1750		1796		1577	1883
Flt Permitted	0.96		1.00		0.58	1.00
Satd. Flow (perm)	1750		1796		967	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	208	28	242	48	42	803
RTOR Reduction (vph)	6	0	7	0	0	0
Lane Group Flow (vph)	230	0	283	0	42	803
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)	16.9		61.1		61.1	61.1
Effective Green, g (s)	16.9		61.1		61.1	61.1
Actuated g/C Ratio	0.19		0.68		0.68	0.68
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)	328		1219		656	1278
v/s Ratio Prot	c0.13		0.16			c0.43
v/s Ratio Perm					0.04	
v/c Ratio	0.70		0.23		0.06	0.63
Uniform Delay, d1	34.2		5.5		4.9	8.1
Progression Factor	1.00		1.03		1.00	1.00
Incremental Delay, d2	6.7		0.4		0.2	2.3
Delay (s)	40.9		6.1		5.0	10.4
Level of Service	D		A		A	B
Approach Delay (s)	40.9		6.1			10.2
Approach LOS	D		A			B

Intersection Summary

HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
12: Street VV & Street A

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



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	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			0.983						0.972	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1882	0	0	1851	0	0	1789	0	0	1761	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1882	0	0	1851	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 FT_Full Build-out_No Improvements 2041
12: Street VV & Street A

Morning Peak Hour



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	110	1	0	203	29	7	0	0	19	0	5
Future Volume (vph)	0	110	1	0	203	29	7	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	110	1	0	203	29	7	0	0	19	0	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	111	232	7	24								
Volume Left (vph)	0	0	7	19								
Volume Right (vph)	1	29	0	5								
Hadj (s)	0.03	-0.04	0.23	0.07								
Departure Headway (s)	4.2	4.0	4.9	4.7								
Degree Utilization, x	0.13	0.26	0.01	0.03								
Capacity (veh/h)	833	877	679	702								
Control Delay (s)	7.9	8.5	7.9	7.9								
Approach Delay (s)	7.9	8.5	7.9	7.9								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.2
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

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.983						0.981			0.958	
Flt Protected		0.999			0.994			0.966				
Satd. Flow (prot)	0	1850	0	0	1872	0	0	1785	0	0	1804	0
Flt Permitted		0.999			0.994			0.966				
Satd. Flow (perm)	0	1850	0	0	1872	0	0	1785	0	0	1804	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 FT_Full Build-out_No Improvements 2041
14: Street JJ & Street A

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	2	117	17	25	186	0	20	4	4	0	20	9
Future Volume (vph)	2	117	17	25	186	0	20	4	4	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)	2	117	17	25	186	0	20	4	4	0	20	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	136	211	28	29								
Volume Left (vph)	2	25	20	0								
Volume Right (vph)	17	0	4	9								
Hadj (s)	-0.04	0.06	0.09	-0.15								
Departure Headway (s)	4.2	4.2	4.8	4.5								
Degree Utilization, x	0.16	0.25	0.04	0.04								
Capacity (veh/h)	832	834	694	723								
Control Delay (s)	8.0	8.6	8.0	7.7								
Approach Delay (s)	8.0	8.6	8.0	7.7								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.3
Level of Service	A
Intersection Capacity Utilization	44.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
15: Street I & Street A

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

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						0.988			0.949	
Flt Protected		0.999			0.996			0.960				
Satd. Flow (prot)	0	1867	0	0	1876	0	0	1786	0	0	1787	0
Flt Permitted		0.999			0.996			0.960				
Satd. Flow (perm)	0	1867	0	0	1876	0	0	1786	0	0	1787	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 FT_Full Build-out_No Improvements 2041
15: Street I & Street A

Morning Peak Hour

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	107	7	15	156	0	29	3	3	0	15	9
Future Volume (vph)	2	107	7	15	156	0	29	3	3	0	15	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)	2	107	7	15	156	0	29	3	3	0	15	9
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	116	171	35	24								
Volume Left (vph)	2	15	29	0								
Volume Right (vph)	7	0	3	9								
Hadj (s)	0.00	0.05	0.15	-0.19								
Departure Headway (s)	4.2	4.2	4.7	4.4								
Degree Utilization, x	0.14	0.20	0.05	0.03								
Capacity (veh/h)	832	838	714	756								
Control Delay (s)	7.9	8.3	7.9	7.5								
Approach Delay (s)	7.9	8.3	7.9	7.5								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.0
Level of Service	A
Intersection Capacity Utilization	33.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics

FT_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Morning Peak Hour



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		0.936			0.988			0.984			0.995	
Flt Protected		0.999			0.983			0.974			0.994	
Satd. Flow (prot)	0	1761	0	0	1829	0	0	1805	0	0	1863	0
Flt Permitted		0.999			0.983			0.974			0.994	
Satd. Flow (perm)	0	1761	0	0	1829	0	0	1805	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 FT_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Morning Peak Hour



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	73	68	43	68	11	78	52	18	19	141	6
Future Volume (vph)	2	73	68	43	68	11	78	52	18	19	141	6
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	73	68	43	68	11	78	52	18	19	141	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	143	122	148	166								
Volume Left (vph)	2	43	78	19								
Volume Right (vph)	68	11	18	6								
Hadj (s)	-0.25	0.05	0.07	0.04								
Departure Headway (s)	4.6	4.9	4.8	4.8								
Degree Utilization, x	0.18	0.17	0.20	0.22								
Capacity (veh/h)	721	676	698	703								
Control Delay (s)	8.6	8.9	9.0	9.1								
Approach Delay (s)	8.6	8.9	9.0	9.1								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.9
Level of Service	A
Intersection Capacity Utilization	54.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics

FT_Full Build-out_No Improvements 2041

48: Humber Station Rd & Street E

Morning Peak Hour



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		0.880			0.996			0.850				
Flt Protected		0.998			0.954		0.950		0.950			
Satd. Flow (prot)	0	1654	0	0	1790	0	1789	1883	1601	1789	1883	0
Flt Permitted		0.988			0.689		0.547		0.642			
Satd. Flow (perm)	0	1638	0	0	1293	0	1030	1883	1601	1209	1883	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			3				359			
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

FT_Full Build-out_No Improvements 2041

48: Humber Station Rd & Street E

Morning Peak Hour

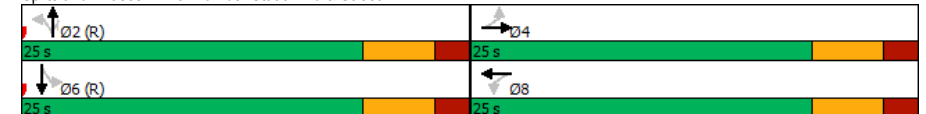


Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	4	132	1	21	183	359	1	319
Future Volume (vph)	3	4	132	1	21	183	359	1	319
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2		2	6
Permitted Phases	4		8		2		2	6	
Detector Phase	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		0.09		0.28	0.05	0.26	0.43	0.00	0.45
Control Delay		4.6		12.4	10.4	11.9	3.4	10.0	14.1
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		4.6		12.4	10.4	11.9	3.4	10.0	14.1
LOS		A		B	B	B	A	A	B
Approach Delay		4.6		12.4		6.4			14.1
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: 0.45
 Intersection Signal Delay: 9.4
 Intersection Capacity Utilization 45.6%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
48: Humber Station Rd & Street E

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	61	137	21	183	359	1	319
v/c Ratio	0.09	0.28	0.05	0.26	0.43	0.00	0.45
Control Delay	4.6	12.4	10.4	11.9	3.4	10.0	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.6	12.4	10.4	11.9	3.4	10.0	14.1
Queue Length 50th (m)	0.4	8.2	1.2	11.2	0.0	0.1	21.1
Queue Length 95th (m)	5.8	18.5	4.6	22.4	12.7	0.8	38.5
Internal Link Dist (m)	105.8	185.7		130.4			336.1
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	655	493	391	715	830	459	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	0.09	0.28	0.05	0.26	0.43	0.00	0.45

Intersection Summary

HCM Signalized Intersection Capacity Analysis FT_Full Build-out_No Improvements 2041
48: Humber Station Rd & Street E Morning Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	4	54	132	1	4	21	183	359	1	319	0
Future Volume (vph)	3	4	54	132	1	4	21	183	359	1	319	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	6.0	6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Fr't		0.88			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)		1654			1790		1789	1883	1601	1789	1883	
Flt Permitted		0.99			0.69		0.55	1.00	1.00	0.64	1.00	
Satd. Flow (perm)		1638			1293		1030	1883	1601	1209	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)	3	4	54	132	1	4	21	183	359	1	319	0
RTOR Reduction (vph)	0	33	0	0	2	0	0	0	223	0	0	0
Lane Group Flow (vph)	0	28	0	0	135	0	21	183	136	1	319	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)		622			491		391	715	608	459	715	
v/s Ratio Prot								0.10			c0.17	
v/s Ratio Perm		0.02			c0.10		0.02		0.09	0.00		
v/c Ratio		0.04			0.28		0.05	0.26	0.22	0.00	0.45	
Uniform Delay, d1		9.8			10.7		9.8	10.6	10.5	9.6	11.6	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			1.4		0.3	0.9	0.9	0.0	2.0	
Delay (s)		9.9			12.1		10.1	11.5	11.4	9.6	13.6	
Level of Service		A			B		B	B	B	A	B	
Approach Delay (s)		9.9			12.1			11.4			13.6	
Approach LOS		A			B			B			B	

Intersection Summary

HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

FT_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

Morning Peak Hour

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	0.94	0.97		0.93		0.92	0.96	0.98		0.98		1.00
Frt	0.972			0.850			0.961			0.997		
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1785	0	1789	1883	1601	1789	1771	0	1789	1873	0
Flt Permitted	0.708			0.351			0.446			0.403		
Satd. Flow (perm)	1248	1785	0	617	1883	1470	803	1771	0	743	1873	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				131			26			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

FT_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

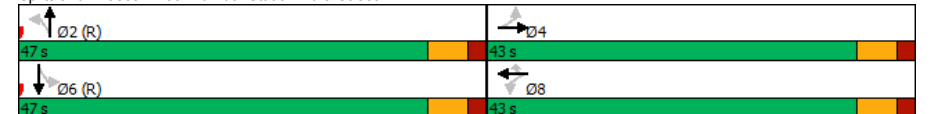
Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	30	252	144	76	131	69	390	83	458
Future Volume (vph)	30	252	144	76	131	69	390	83	458
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)	43.0	43.0	43.0	43.0	43.0	47.0	47.0	47.0	47.0
Total Split (%)	47.8%	47.8%	47.8%	47.8%	47.8%	52.2%	52.2%	52.2%	52.2%
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)	21.3	21.3	21.3	21.3	21.3	56.7	56.7	56.7	56.7
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.63	0.63	0.63	0.63
v/c Ratio	0.10	0.71	0.99	0.17	0.29	0.14	0.47	0.18	0.40
Control Delay	24.4	38.3	105.8	25.6	6.0	10.1	11.2	10.2	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	24.4	38.3	105.8	25.6	6.0	10.1	11.2	10.2	11.3
LOS	C	D	F	C	A	B	B	B	B
Approach Delay		37.1		51.2			11.1		11.1
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: 0.99
 Intersection Signal Delay: 23.6
 Intersection Capacity Utilization 80.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

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



Queues
58: Humber Station Rd & Street Y

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	30	309	144	76	131	69	528	83	467
v/c Ratio	0.10	0.71	0.99	0.17	0.29	0.14	0.47	0.18	0.40
Control Delay	24.4	38.3	105.8	25.6	6.0	10.1	11.2	10.2	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	24.4	38.3	105.8	25.6	6.0	10.1	11.2	10.2	11.3
Queue Length 50th (m)	4.3	49.3	~26.8	11.0	0.0	4.4	40.6	5.5	36.3
Queue Length 95th (m)	9.7	66.3	#51.7	19.1	11.7	13.9	77.5	16.5	75.0
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)	513	742	253	774	681	505	1124	467	1179
Starvation Cap Reductn	0	0	0	0	0	0	0	0	351
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	0.06	0.42	0.57	0.10	0.19	0.14	0.47	0.18	0.56

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 FT_Full Build-out_No Improvements 2041
58: Humber Station Rd & Street Y Morning Peak Hour



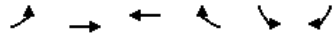
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	30	252	57	144	76	131	69	390	138	83	458	9
Future Volume (vph)	30	252	57	144	76	131	69	390	138	83	458	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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	
Frbp, ped/bikes	1.00	0.97		1.00	1.00	0.92	1.00	0.98		1.00	1.00	
Flpb, ped/bikes	0.94	1.00		0.94	1.00	1.00	0.95	1.00		0.97	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.96		1.00	1.00	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1675	1785		1681	1883	1470	1695	1771		1741	1873	
Fit Permitted	0.71	1.00		0.35	1.00	1.00	0.45	1.00		0.40	1.00	
Satd. Flow (perm)	1247	1785		621	1883	1470	795	1771		739	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)	30	252	57	144	76	131	69	390	138	83	458	9
RTOR Reduction (vph)	0	11	0	0	0	100	0	10	0	0	0	0
Lane Group Flow (vph)	30	298	0	144	76	31	69	518	0	83	467	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)	21.3	21.3		21.3	21.3	21.3	56.7	56.7		56.7	56.7	
Effective Green, g (s)	21.3	21.3		21.3	21.3	21.3	56.7	56.7		56.7	56.7	
Actuated g/C Ratio	0.24	0.24		0.24	0.24	0.24	0.63	0.63		0.63	0.63	
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)	295	422		146	445	347	500	1115		465	1179	
v/s Ratio Prot		0.17			0.04			c0.29			0.25	
v/s Ratio Perm	0.02			c0.23		0.02	0.09			0.11		
v/c Ratio	0.10	0.71		0.99	0.17	0.09	0.14	0.46		0.18	0.40	
Uniform Delay, d1	26.9	31.5		34.2	27.3	26.8	6.7	8.7		6.9	8.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.05	0.99		1.00	1.00	
Incremental Delay, d2	0.2	5.3		69.8	0.2	0.1	0.6	1.4		0.8	1.0	
Delay (s)	27.0	36.8		104.0	27.5	26.9	7.7	10.0		7.8	9.2	
Level of Service	C	D		F	C	C	A	B		A	A	
Approach Delay (s)		35.9			58.6			9.7			9.0	
Approach LOS		D			E			A			A	

Intersection Summary

- HCM 2000 Control Delay: 23.7, HCM 2000 Level of Service: C
- HCM 2000 Volume to Capacity ratio: 0.61
- Actuated Cycle Length (s): 90.0, Sum of lost time (s): 12.0
- Intersection Capacity Utilization: 80.0%, ICU Level of Service: D
- Analysis Period (min): 15
- c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

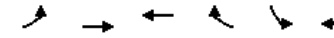


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.991	
Flt Protected					0.955	
Satd. Flow (prot)	0	1883	1859	0	1782	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	1883	1859	0	1782	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 FT_Full Build-out_No Improvements 2041
62: Street Y & Street VV

Morning Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	221	225	23	14	1
Future Volume (vph)	0	221	225	23	14	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	221	225	23	14	1
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	221	248	15			
Volume Left (vph)	0	0	14			
Volume Right (vph)	0	23	1			
Hadj (s)	0.03	-0.02	0.18			
Departure Headway (s)	4.2	4.1	5.1			
Degree Utilization, x	0.26	0.28	0.02			
Capacity (veh/h)	840	859	645			
Control Delay (s)	8.7	8.8	8.2			
Approach Delay (s)	8.7	8.8	8.2			
Approach LOS	A	A	A			
Intersection Summary						
Delay			8.7			
Level of Service			A			
Intersection Capacity Utilization			31.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes and Geometrics
64: Street JJ & Street Y

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

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			0.988			0.975			0.994	
Flt Protected		0.999			0.995			0.995			0.994	
Satd. Flow (prot)	0	1868	0	0	1852	0	0	1827	0	0	1861	0
Flt Permitted		0.999			0.995			0.995			0.994	
Satd. Flow (perm)	0	1868	0	0	1852	0	0	1827	0	0	1861	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 FT_Full Build-out_No Improvements 2041
64: Street JJ & Street Y

Morning Peak Hour

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	234	13	34	272	30	19	141	36	17	117	6
Future Volume (vph)	7	234	13	34	272	30	19	141	36	17	117	6
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	234	13	34	272	30	19	141	36	17	117	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	254	336	196	140								
Volume Left (vph)	7	34	19	17								
Volume Right (vph)	13	30	36	6								
Hadj (s)	0.01	0.00	-0.06	0.03								
Departure Headway (s)	5.5	5.3	5.7	5.9								
Degree Utilization, x	0.39	0.50	0.31	0.23								
Capacity (veh/h)	610	637	559	532								
Control Delay (s)	11.9	13.5	11.3	10.7								
Approach Delay (s)	11.9	13.5	11.3	10.7								
Approach LOS	B	B	B	B								

Intersection Summary

Delay	12.2
Level of Service	B
Intersection Capacity Utilization	52.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

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		0.987			0.990			0.993			0.991	
Flt Protected		0.998			0.996			0.994			0.995	
Satd. Flow (prot)	0	1855	0	0	1857	0	0	1859	0	0	1857	0
Flt Permitted		0.998			0.996			0.994			0.995	
Satd. Flow (perm)	0	1855	0	0	1857	0	0	1859	0	0	1857	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 FT_Full Build-out_No Improvements 2041
65: Street I & Street Y

Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	242	28	27	314	26	23	148	9	15	121	10
Future Volume (vph)	12	242	28	27	314	26	23	148	9	15	121	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)	12	242	28	27	314	26	23	148	9	15	121	10
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	282	367	180	146								
Volume Left (vph)	12	27	23	15								
Volume Right (vph)	28	26	9	10								
Hadj (s)	-0.02	0.01	0.03	0.01								
Departure Headway (s)	5.5	5.4	6.0	6.1								
Degree Utilization, x	0.43	0.55	0.30	0.25								
Capacity (veh/h)	608	633	527	513								
Control Delay (s)	12.6	14.8	11.6	11.1								
Approach Delay (s)	12.6	14.8	11.6	11.1								
Approach LOS	B	B	B	B								

Intersection Summary

Delay	13.0
Level of Service	B
Intersection Capacity Utilization	48.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	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	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		0.919						0.989				
Flt Protected					0.976			0.998				
Satd. Flow (prot)	0	1731	0	0	1838	0	0	1859	0	0	1883	0
Flt Permitted					0.976			0.998				
Satd. Flow (perm)	0	1731	0	0	1838	0	0	1859	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 FT_Full Build-out_No Improvements 2041
84: Street JJ & Street EE

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement		↔			↔			↔			↔	
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	6	14	15	0	8	192	17	0	159	0
Future Volume (Veh/h)	0	4	6	14	15	0	8	192	17	0	159	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	4	6	14	15	0	8	192	17	0	159	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)								262				
pX, platoon unblocked												
vC, conflicting volume	433	484	259	484	476	250	209			259		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433	484	259	484	476	250	209			259		
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	97	97	100	99			100		
cM capacity (veh/h)	463	439	714	415	444	754	1304			1250		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	10	29	217	159								
Volume Left	0	14	8	0								
Volume Right	6	0	17	0								
cSH	571	430	1304	1250								
Volume to Capacity	0.02	0.07	0.01	0.00								
Queue Length 95th (m)	0.4	1.7	0.1	0.0								
Control Delay (s)	11.4	14.0	0.3	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.4	14.0	0.3	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				1.4								
Intersection Capacity Utilization			36.1%		ICU Level of Service			A				
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	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		0.897										
Flt Protected								0.996				
Satd. Flow (prot)	0	1689	0	0	1883	0	0	1876	0	0	1883	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1689	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 FT_Full Build-out_No Improvements 2041
85: Street I & Street EE

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	13	0	15	0	16	201	0	0	165	0
Future Volume (Veh/h)	0	4	13	0	15	0	16	201	0	0	165	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	4	13	0	15	0	16	201	0	0	165	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	506	498	265	513	498	301	215			251		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	506	498	265	513	498	301	215			251		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
iC, 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	97	100	99			100		
cM capacity (veh/h)	395	429	709	391	429	677	1297			1258		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	15	217	165								
Volume Left	0	0	16	0								
Volume Right	13	0	0	0								
cSH	614	429	1297	1258								
Volume to Capacity	0.03	0.03	0.01	0.00								
Queue Length 95th (m)	0.7	0.9	0.3	0.0								
Control Delay (s)	11.0	13.7	0.7	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.0	13.7	0.7	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization			42.0%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



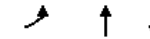
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)	0%			0%	0%	
Storage Length (m)	0.0	0.0	0.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	0.0		0.0			
Lane Util. Factor	1.00	1.00	1.00	1.00	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)					3	
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

FT_Full Build-out_No Improvements 2041
Morning Peak Hour

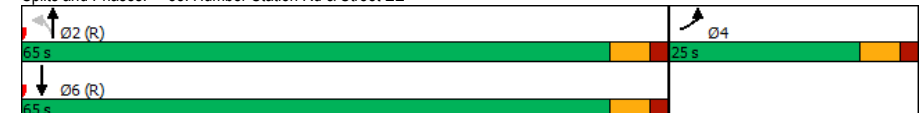


Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑	↑
Traffic Volume (vph)	4	1056	651
Future Volume (vph)	4	1056	651
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	25.0	65.0	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	0.65	0.41
Control Delay	109.0	3.1	5.3
Queue Delay	0.0	0.0	0.0
Total Delay	109.0	3.1	5.3
LOS	F	A	A
Approach Delay	109.0	3.1	5.3
Approach LOS	F	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 4.2
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
88: Humber Station Rd & Street EE

FT_Full Build-out_No Improvements 2041
Morning Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	4	1056	666
v/c Ratio	0.02	0.65	0.41
Control Delay	109.0	3.1	5.3
Queue Delay	0.0	0.0	0.0
Total Delay	109.0	3.1	5.3
Queue Length 50th (m)	0.7	0.0	0.0
Queue Length 95th (m)	3.3	#217.7	m88.9
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	0.65	0.41

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 FT_Full Build-out_No Improvements 2041
88: Humber Station Rd & Street EE

Morning Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↓	
Traffic Volume (vph)	4	0	0	1056	651	15
Future Volume (vph)	4	0	0	1056	651	15
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	
Frb, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			1883	1872	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			1883	1872	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	0	0	1056	651	15
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	4	0	0	1056	665	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	1464	
v/s Ratio Prot	c0.00			c0.56	0.36	
v/s Ratio Perm						
v/c Ratio	0.03			0.72	0.45	
Uniform Delay, d1	37.8			4.9	3.3	
Progression Factor	1.00			1.00	0.82	
Incremental Delay, d2	0.1			3.0	1.0	
Delay (s)	37.9			7.9	3.7	
Level of Service	D			A	A	
Approach Delay (s)	37.9			7.9	3.7	
Approach LOS	D			A	A	

Intersection Summary

- HCM 2000 Control Delay 6.4 HCM 2000 Level of Service A
- HCM 2000 Volume to Capacity ratio 0.65
- Actuated Cycle Length (s) 90.0 Sum of lost time (s) 12.0
- Intersection Capacity Utilization 69.7% ICU Level of Service C
- Analysis Period (min) 15
- c Critical Lane Group

Lanes and Geometrics
1: The Gore Rd & King St

FT_Full Build-out 2041
Afternoon Peak Hour

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	0.98		0.91
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1730	3476	1555	1713	3476	1617	1765	3614	1601	1765	3579	1570
Flt Permitted	0.358			0.418			0.464			0.146		
Satd. Flow (perm)	627	3476	1334	711	3476	1386	826	3614	1464	267	3579	1436
Right Turn on Red			Yes		Yes		Yes		Yes		Yes	
Satd. Flow (RTOR)			69		105		218					131
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

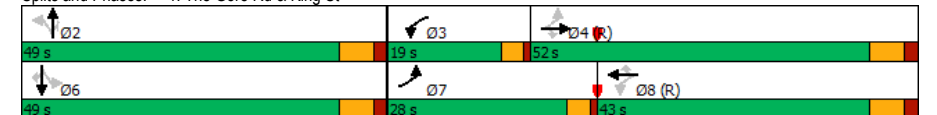
FT_Full Build-out 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	265	561	20	189	588	101	57	802	271	38	378	131
Future Volume (vph)	265	561	20	189	588	101	57	802	271	38	378	131
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)	28.0	52.0	52.0	19.0	43.0	43.0	49.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	23.3%	43.3%	43.3%	15.8%	35.8%	35.8%	40.8%	40.8%	40.8%	40.8%	40.8%	40.8%
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)	74.0	57.5	57.5	68.7	54.8	54.8	34.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.62	0.48	0.48	0.57	0.46	0.46	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.51	0.34	0.03	0.38	0.37	0.15	0.24	0.78	0.48	0.51	0.37	0.26
Control Delay	14.5	21.7	0.1	12.9	24.0	5.1	34.0	45.1	10.2	52.1	30.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	21.7	0.1	12.9	24.0	5.1	34.0	45.1	10.2	52.1	30.6	4.2
LOS	B	C	A	B	C	A	C	D	B	D	C	A
Approach Delay		18.9			19.4			36.2				25.8
Approach LOS		B			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: 0.78
 Intersection Signal Delay: 25.9
 Intersection Capacity Utilization 92.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
1: The Gore Rd & King St

FT_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	265	561	20	189	588	101	57	802	271	38	378	131
v/c Ratio	0.51	0.34	0.03	0.38	0.37	0.15	0.24	0.78	0.48	0.51	0.37	0.26
Control Delay	14.5	21.7	0.1	12.9	24.0	5.1	34.0	45.1	10.2	52.1	30.6	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.5	21.7	0.1	12.9	24.0	5.1	34.0	45.1	10.2	52.1	30.6	4.2
Queue Length 50th (m)	26.3	43.1	0.0	17.9	47.7	0.0	10.8	95.6	9.7	8.3	42.6	3.1
Queue Length 95th (m)	47.9	69.2	0.0	34.2	77.1	11.4	20.8	107.8	30.2	19.4	38.4	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)	614	1665	675	554	1587	689	291	1276	658	94	1264	592
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	0.43	0.34	0.03	0.34	0.37	0.15	0.20	0.63	0.41	0.40	0.30	0.22

Intersection Summary

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

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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	265	561	20	189	588	101	57	802	271	38	378	131
Future Volume (vph)	265	561	20	189	588	101	57	802	271	38	378	131
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)	1706	3476	1334	1678	3476	1386	1693	3614	1464	1739	3579	1436
Flt Permitted	0.36	1.00	1.00	0.42	1.00	1.00	0.46	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	643	3476	1334	738	3476	1386	827	3614	1464	268	3579	1436
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)	265	561	20	189	588	101	57	802	271	38	378	131
RTOR Reduction (vph)	0	0	10	0	0	55	0	0	156	0	0	94
Lane Group Flow (vph)	265	561	10	189	588	46	57	802	115	38	378	37
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	2%	5%	5%	3%	5%	1%	0%	1%	2%	0%	2%	4%
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)	71.5	57.5	57.5	66.1	54.8	54.8	34.0	34.0	34.0	34.0	34.0	34.0
Effective Green, g (s)	71.5	57.5	57.5	66.1	54.8	54.8	34.0	34.0	34.0	34.0	34.0	34.0
Actuated g/C Ratio	0.60	0.48	0.48	0.55	0.46	0.46	0.28	0.28	0.28	0.28	0.28	0.28
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)	507	1665	639	495	1587	632	234	1023	414	75	1014	406
v/s Ratio Prot	c0.06	0.16		0.04	0.17			c0.22				0.11
v/s Ratio Perm	c0.25		0.01	0.17		0.03	0.07		0.08	0.14		0.03
v/c Ratio	0.52	0.34	0.01	0.38	0.37	0.07	0.24	0.78	0.28	0.51	0.37	0.09
Uniform Delay, d1	12.2	19.4	16.4	13.7	21.3	18.3	33.1	39.6	33.4	36.0	34.5	31.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.88	0.63
Incremental Delay, d2	1.0	0.5	0.0	0.5	0.7	0.2	0.5	4.0	0.4	5.0	0.2	0.1
Delay (s)	13.2	20.0	16.4	14.2	22.0	18.5	33.6	43.6	33.8	35.4	30.5	20.0
Level of Service	B	B	B	B	C	B	C	D	C	D	C	C
Approach Delay (s)		17.7			19.9			40.8			28.3	
Approach LOS		B			B			D			C	

Intersection Summary

HCM 2000 Control Delay	27.7	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	92.2%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

FT_Full Build-out 2041

2: Humber Station Rd & King St

Afternoon Peak Hour

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	0.96		0.86	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)	1713	3544	1555	1379	3476	1541	1697	3579	1498	1713	3579	1601
Flt Permitted	0.284			0.429			0.292			0.434		
Satd. Flow (perm)	502	3544	1422	602	3476	1409	503	3579	1285	739	3579	1464
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			156			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

FT_Full Build-out 2041

2: Humber Station Rd & King St

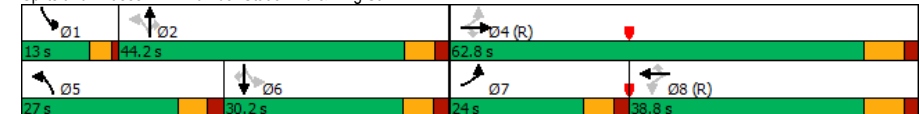
Afternoon Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (vph)	247	590	209	18	603	243	277	578	68	122	354	179
Future Volume (vph)	247	590	209	18	603	243	277	578	68	122	354	179
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)	24.0	62.8	62.8	38.8	38.8	38.8	27.0	44.2	44.2	13.0	30.2	30.2
Total Split (%)	20.0%	52.3%	52.3%	32.3%	32.3%	32.3%	22.5%	36.8%	36.8%	10.8%	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)	63.0	61.6	61.6	41.0	41.0	41.0	44.8	31.3	31.3	30.8	19.0	19.0
Actuated g/C Ratio	0.52	0.51	0.51	0.34	0.34	0.34	0.37	0.26	0.26	0.26	0.16	0.16
v/c Ratio	0.60	0.32	0.26	0.09	0.51	0.41	0.72	0.62	0.16	0.46	0.63	0.46
Control Delay	23.9	18.7	6.4	34.2	35.5	13.0	38.6	41.5	0.8	29.6	51.8	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	18.7	6.4	34.2	35.5	13.0	38.6	41.5	0.8	29.6	51.8	9.2
LOS	C	B	A	C	D	B	D	D	A	C	D	A
Approach Delay		17.5			29.1			37.6			36.0	
Approach LOS		B			C			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: 85
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 29.2
 Intersection Capacity Utilization 89.0%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
2: Humber Station Rd & King St

FT_Full Build-out 2041
Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	247	590	209	18	603	243	277	578	68	122	354	179
v/c Ratio	0.60	0.32	0.26	0.09	0.51	0.41	0.72	0.62	0.16	0.46	0.63	0.46
Control Delay	23.9	18.7	6.4	34.2	35.5	13.0	38.6	41.5	0.8	29.6	51.8	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	18.7	6.4	34.2	35.5	13.0	38.6	41.5	0.8	29.6	51.8	9.2
Queue Length 50th (m)	32.2	42.6	6.3	3.0	61.6	11.3	50.4	67.1	0.0	19.4	43.9	0.0
Queue Length 95th (m)	55.3	62.1	21.8	9.9	90.0	37.5	68.7	78.3	0.0	30.2	56.5	17.4
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)	445	1830	809	207	1198	601	399	1139	498	272	715	442
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	0.56	0.32	0.26	0.09	0.50	0.40	0.69	0.51	0.14	0.45	0.50	0.40

Intersection Summary

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

FT_Full Build-out 2041
Afternoon Peak Hour

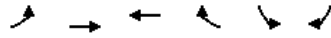
	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↖↗	↖	↘	↖↗	↖	↘	↖↗	↖	↘	↖↗	↘
Traffic Volume (vph)	247	590	209	18	603	243	277	578	68	122	354	179
Future Volume (vph)	247	590	209	18	603	243	277	578	68	122	354	179
Ideal Flow (vphpl)	1900	1900	1900	1900	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	0.97	1.00	1.00	0.99	1.00	1.00	0.98	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)	1704	3544	1422	1333	3476	1409	1682	3579	1285	1675	3579	1464
Flt Permitted	0.28	1.00	1.00	0.43	1.00	1.00	0.29	1.00	1.00	0.43	1.00	1.00
Satd. Flow (perm)	509	3544	1422	602	3476	1409	517	3579	1285	766	3579	1464
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)	247	590	209	18	603	243	277	578	68	122	354	179
RTOR Reduction (vph)	0	0	76	0	0	116	0	0	50	0	0	151
Lane Group Flow (vph)	247	590	133	18	603	127	277	578	18	122	354	28
Confl. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	3%	3%	5%	28%	5%	6%	4%	2%	9%	3%	2%	2%
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)	61.6	61.6	61.6	41.0	41.0	41.0	45.0	31.3	31.3	28.7	19.0	19.0
Effective Green, g (s)	61.6	61.6	61.6	41.0	41.0	41.0	45.0	31.3	31.3	28.7	19.0	19.0
Actuated g/C Ratio	0.51	0.51	0.51	0.34	0.34	0.34	0.38	0.26	0.26	0.24	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)	406	1819	729	205	1187	481	384	933	335	256	566	231
v/s Ratio Prot	c0.07	0.17			0.17		c0.12	0.16		0.04	0.10	
v/s Ratio Perm	c0.24		0.09	0.03		0.09	c0.15		0.01	0.08		0.02
v/c Ratio	0.61	0.32	0.18	0.09	0.51	0.26	0.72	0.62	0.05	0.48	0.63	0.12
Uniform Delay, d1	18.1	17.0	15.7	26.8	31.5	28.6	28.9	39.1	33.2	37.5	47.2	43.3
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	2.6	0.5	0.6	0.8	1.6	1.3	6.6	1.2	0.1	1.4	2.2	0.2
Delay (s)	20.7	17.5	16.2	27.7	33.0	29.9	35.4	40.3	33.3	38.9	49.3	43.6
Level of Service	C	B	B	C	C	C	D	D	C	D	D	D
Approach Delay (s)		18.0			32.0			38.3			45.8	
Approach LOS		B			C			D			D	

Intersection Summary

HCM 2000 Control Delay	32.1	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)	25.8
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FT_Full Build-out 2041
Afternoon Peak Hour



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)	1765	3650	3650	1633	1739	0
Flt Permitted	0.282				0.967	
Satd. Flow (perm)	511	3650	3650	1365	1664	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				101	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

FT_Full Build-out 2041
Afternoon Peak Hour

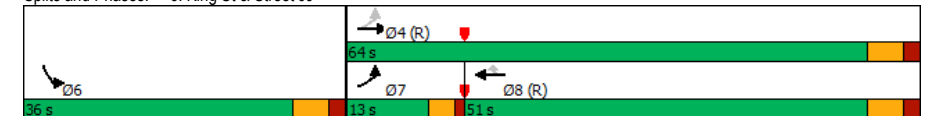


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↑	↑↑	↑↑	↑	↓
Traffic Volume (vph)	80	804	837	163	139
Future Volume (vph)	80	804	837	163	139
Turn Type	pm+pt	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases	4			8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	23.0	23.0	23.0	30.0
Total Split (s)	13.0	64.0	51.0	51.0	36.0
Total Split (%)	13.0%	64.0%	51.0%	51.0%	36.0%
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)	72.8	70.8	61.7	61.7	17.2
Actuated g/C Ratio	0.73	0.71	0.62	0.62	0.17
v/c Ratio	0.17	0.31	0.37	0.19	0.63
Control Delay	5.9	6.6	8.2	3.1	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	6.6	8.2	3.1	41.8
LOS	A	A	A	A	D
Approach Delay		6.5	7.4		41.8
Approach LOS		A	A		D

Intersection Summary

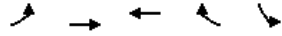
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 65
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 10.3
 Intersection Capacity Utilization 59.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FT_Full Build-out 2041
Afternoon Peak Hour

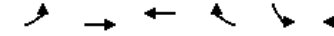


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	80	804	837	163	201
v/c Ratio	0.17	0.31	0.37	0.19	0.63
Control Delay	5.9	6.6	8.2	3.1	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	5.9	6.6	8.2	3.1	41.8
Queue Length 50th (m)	3.6	25.8	26.3	2.2	34.2
Queue Length 95th (m)	10.2	46.1	35.1	7.1	52.6
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	484	2582	2252	881	537
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	0.17	0.31	0.37	0.19	0.37

Intersection Summary

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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	80	804	837	163	139	62
Future Volume (vph)	80	804	837	163	139	62
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	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	
Frpt	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)	1751	3650	3650	1365	1739	
Flt Permitted	0.28	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	519	3650	3650	1365	1739	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	804	837	163	139	62
RTOR Reduction (vph)	0	0	0	39	19	0
Lane Group Flow (vph)	80	804	837	124	182	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	70.8	70.8	61.0	61.0	17.2	
Effective Green, g (s)	70.8	70.8	61.0	61.0	17.2	
Actuated g/C Ratio	0.71	0.71	0.61	0.61	0.17	
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)	438	2584	2226	832	299	
v/s Ratio Prot	0.01	c0.22	c0.23		c0.10	
v/s Ratio Perm	0.12			0.09		
v/c Ratio	0.18	0.31	0.38	0.15	0.61	
Uniform Delay, d1	5.1	5.5	9.9	8.4	38.3	
Progression Factor	1.00	1.00	0.69	0.55	1.00	
Incremental Delay, d2	0.2	0.3	0.5	0.3	3.5	
Delay (s)	5.3	5.8	7.2	4.9	41.8	
Level of Service	A	A	A	A	D	
Approach Delay (s)		5.7	6.9		41.8	
Approach LOS		A	A		D	

Intersection Summary

HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
7: King St & Street I

FT_Full Build-out 2041
Afternoon Peak Hour

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	0.958	
Flt Protected	0.950				0.967	
Satd. Flow (prot)	1765	3650	3650	1633	1739	0
Flt Permitted	0.245				0.967	
Satd. Flow (perm)	455	3650	3650	1365	1664	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				92	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

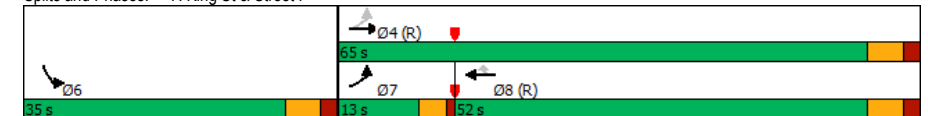
FT_Full Build-out 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↔	↕	↕	↕	↕
Traffic Volume (vph)	80	863	939	163	139
Future Volume (vph)	80	863	939	163	139
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)	72.8	70.8	61.7	61.7	17.2
Actuated g/C Ratio	0.73	0.71	0.62	0.62	0.17
v/c Ratio	0.19	0.33	0.42	0.19	0.63
Control Delay	4.7	4.8	12.3	5.9	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	4.8	12.3	5.9	41.8
LOS	A	A	B	A	D
Approach Delay		4.8	11.3		41.8
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: 0.63
 Intersection Signal Delay: 11.3
 Intersection Capacity Utilization 62.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FT_Full Build-out 2041
Afternoon Peak Hour

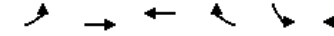


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	80	863	939	163	201
v/c Ratio	0.19	0.33	0.42	0.19	0.63
Control Delay	4.7	4.8	12.3	5.9	41.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	4.7	4.8	12.3	5.9	41.8
Queue Length 50th (m)	2.7	17.4	47.3	5.3	34.2
Queue Length 95th (m)	6.7	32.2	79.2	17.9	52.6
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	448	2582	2252	877	520
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	0.18	0.33	0.42	0.19	0.39

Intersection Summary

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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	80	863	939	163	139	62
Future Volume (vph)	80	863	939	163	139	62
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	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	
Frpt	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)	1756	3650	3650	1365	1739	
Flt Permitted	0.24	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	452	3650	3650	1365	1739	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	863	939	163	139	62
RTOR Reduction (vph)	0	0	0	36	19	0
Lane Group Flow (vph)	80	863	939	127	182	0
Confl. Peds. (#/hr)	50			50	50	50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	pm+pt	NA	NA	Perm	Prot	
Protected Phases	7	4	8		6	
Permitted Phases	4			8		
Actuated Green, G (s)	70.8	70.8	61.0	61.0	17.2	
Effective Green, g (s)	70.8	70.8	61.0	61.0	17.2	
Actuated g/C Ratio	0.71	0.71	0.61	0.61	0.17	
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)	395	2584	2226	832	299	
v/s Ratio Prot	0.01	c0.24	c0.26		c0.10	
v/s Ratio Perm	0.13			0.09		
v/c Ratio	0.20	0.33	0.42	0.15	0.61	
Uniform Delay, d1	5.4	5.6	10.2	8.4	38.3	
Progression Factor	0.74	0.70	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.3	0.6	0.4	3.5	
Delay (s)	4.2	4.2	10.8	8.8	41.8	
Level of Service	A	A	B	A	D	
Approach Delay (s)		4.2	10.5		41.8	
Approach LOS		A	B		D	

Intersection Summary

HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
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

FT_Full Build-out 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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	0.974		0.998	0.850		
Flt Protected	0.961				0.950	
Satd. Flow (prot)	1746	0	1817	1551	1765	1921
Flt Permitted	0.961				0.103	
Satd. Flow (perm)	1630	0	1817	1252	191	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	9		1	53		
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

FT_Full Build-out 2041
Afternoon Peak Hour

	↙	↑	↗	↘	↓
Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Configurations	↙	↖	↗	↘	↓
Traffic Volume (vph)	145	1130	152	43	445
Future Volume (vph)	145	1130	152	43	445
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	92.0	92.0	92.0	92.0
Total Split (%)	23.3%	76.7%	76.7%	76.7%	76.7%
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)	17.2	90.8	90.8	90.8	90.8
Actuated g/C Ratio	0.14	0.76	0.76	0.76	0.76
v/c Ratio	0.69	0.83	0.14	0.30	0.31
Control Delay	60.0	34.5	8.3	12.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	34.5	8.3	12.2	5.8
LOS	E	C	A	B	A
Approach Delay	60.0	31.7			6.3
Approach LOS	E	C			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: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 27.9
 Intersection Capacity Utilization 89.6%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
8: The Gore Rd & Street Y

FT_Full Build-out 2041
Afternoon Peak Hour

Lane Group	WBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	179	1145	137	43	445
v/c Ratio	0.69	0.83	0.14	0.30	0.31
Control Delay	60.0	34.5	8.3	12.2	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.0	34.5	8.3	12.2	5.8
Queue Length 50th (m)	40.2	291.2	20.8	2.8	29.3
Queue Length 95th (m)	62.2	#324.1	26.8	10.9	50.2
Internal Link Dist (m)	110.7	554.8			187.4
Turn Bay Length (m)			25.0		
Base Capacity (vph)	327	1375	960	144	1453
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	0.55	0.83	0.14	0.30	0.31

Intersection Summary

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

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

FT_Full Build-out 2041
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	34	1130	152	43	445
Future Volume (vph)	145	34	1130	152	43	445
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	0.97		1.00	0.85	1.00	1.00
Flt Protected	0.96		1.00	1.00	0.95	1.00
Satd. Flow (prot)	1746		1817	1252	1765	1921
Flt Permitted	0.96		1.00	1.00	0.10	1.00
Satd. Flow (perm)	1746		1817	1252	191	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	145	34	1130	152	43	445
RTOR Reduction (vph)	8	0	0	13	0	0
Lane Group Flow (vph)	171	0	1145	124	43	445
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA	Perm	Perm	NA
Protected Phases	8		2			6
Permitted Phases				2	6	
Actuated Green, G (s)	17.2		90.8	90.8	90.8	90.8
Effective Green, g (s)	17.2		90.8	90.8	90.8	90.8
Actuated g/C Ratio	0.14		0.76	0.76	0.76	0.76
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)	250		1374	947	144	1453
v/s Ratio Prot	c0.10		c0.63			0.23
v/s Ratio Perm				0.10	0.23	
v/c Ratio	0.69		0.83	0.13	0.30	0.31
Uniform Delay, d1	48.8		9.6	3.9	4.6	4.6
Progression Factor	1.00		2.57	2.73	1.00	1.00
Incremental Delay, d2	7.6		5.4	0.3	5.2	0.5
Delay (s)	56.4		30.1	11.0	9.8	5.2
Level of Service	E		C	B	A	A
Approach Delay (s)	56.4		28.1			5.6
Approach LOS	E		C			A
Intersection Summary						
HCM 2000 Control Delay			25.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			89.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics
9: The Gore Rd & Street DDD

FT_Full Build-out 2041
Afternoon Peak Hour

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		0.983			
Flt Protected						
Satd. Flow (prot)	1662	0	1888	0	1858	1921
Flt Permitted						
Satd. Flow (perm)	1662	0	1888	0	1858	1921
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

FT_Full Build-out 2041
Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	10	1021	143	0	489
Future Volume (Veh/h)	0	10	1021	143	0	489
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	10	1021	143	0	489
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	0.29	0.27			0.27	
vC, conflicting volume	1682	1192			1214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1855	366			445	
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	94			100	
cM capacity (veh/h)	22	170			292	
Direction, Lane #	WB 1	NB 1	SB 1	SB 2		
Volume Total	10	1164	0	489		
Volume Left	0	0	0	0		
Volume Right	10	143	0	0		
cSH	170	1700	1700	1700		
Volume to Capacity	0.06	0.68	0.00	0.29		
Queue Length 95th (m)	1.5	0.0	0.0	0.0		
Control Delay (s)	27.5	0.0	0.0	0.0		
Lane LOS	D					
Approach Delay (s)	27.5	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			81.2%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FT_Full Build-out 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98			
Frt	0.966		0.979			
Flt Protected	0.964				0.950	
Satd. Flow (prot)	1735	0	1837	0	1765	1921
Flt Permitted	0.964				0.156	
Satd. Flow (perm)	1602	0	1837	0	290	1921
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	18		19			
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

FT_Full Build-out 2041
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↙	↖	↘	↗
Traffic Volume (vph)	140	872	49	349
Future Volume (vph)	140	872	49	349
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

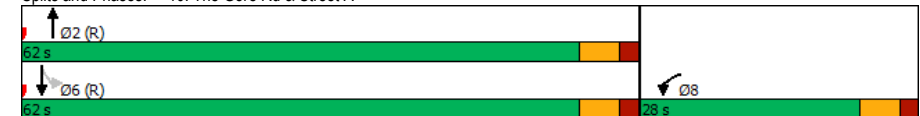
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	14.5	63.5	63.5	63.5
Actuated g/C Ratio	0.16	0.71	0.71	0.71
v/c Ratio	0.63	0.79	0.24	0.26
Control Delay	40.7	16.3	9.9	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	40.7	16.3	9.9	6.1
LOS	D	B	A	A
Approach Delay	40.7	16.3		6.6
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: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 16.7
 Intersection Capacity Utilization 83.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

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



Queues
10: The Gore Rd & Street A

FT_Full Build-out 2041
Afternoon Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	1031	49	349
v/c Ratio	0.63	0.79	0.24	0.26
Control Delay	40.7	16.3	9.9	6.1
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	40.7	16.3	9.9	6.1
Queue Length 50th (m)	28.8	101.3	2.6	18.8
Queue Length 95th (m)	45.4	#246.2	10.9	40.4
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	437	1300	204	1354
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	0.43	0.79	0.24	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
10: The Gore Rd & Street A

FT_Full Build-out 2041
Afternoon Peak Hour

	↙	↘	↑	↙	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↘		↙	↘
Traffic Volume (vph)	140	47	872	159	49	349
Future Volume (vph)	140	47	872	159	49	349
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		0.98		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)	1735		1838		1765	1921
Flt Permitted	0.96		1.00		0.16	1.00
Satd. Flow (perm)	1735		1838		291	1921
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	140	47	872	159	49	349
RTOR Reduction (vph)	15	0	6	0	0	0
Lane Group Flow (vph)	172	0	1025	0	49	349
Confl. Peds. (#/hr)	50	50		50	50	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	14.5		63.5		63.5	63.5
Effective Green, g (s)	14.5		63.5		63.5	63.5
Actuated g/C Ratio	0.16		0.71		0.71	0.71
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)	279		1296		205	1355
v/s Ratio Prot	c0.10		c0.56			0.18
v/s Ratio Perm					0.17	
v/c Ratio	0.62		0.79		0.24	0.26
Uniform Delay, d1	35.2		8.8		4.7	4.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	4.0		5.0		2.7	0.5
Delay (s)	39.2		13.8		7.4	5.2
Level of Service	D		B		A	A
Approach Delay (s)	39.2		13.8			5.5
Approach LOS	D		B			A
Intersection Summary						
HCM 2000 Control Delay			14.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.76			
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
12: Street VV & Street A

FT_Full Build-out 2041
Afternoon Peak Hour



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	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		0.996			0.997						0.973	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1913	0	0	1915	0	0	1825	0	0	1798	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1913	0	0	1915	0	0	1825	0	0	1798	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

FT_Full Build-out 2041
Afternoon Peak Hour



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	200	6	0	199	5	4	0	0	4	0	1
Future Volume (vph)	0	200	6	0	199	5	4	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	200	6	0	199	5	4	0	0	4	0	1


Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	206	204	4	5
Volume Left (vph)	0	0	4	4
Volume Right (vph)	6	5	0	1
Hadj (s)	-0.02	-0.01	0.20	0.04
Departure Headway (s)	4.1	4.1	5.0	4.8
Degree Utilization, x	0.23	0.23	0.01	0.01
Capacity (veh/h)	865	866	662	678
Control Delay (s)	8.3	8.3	8.0	7.8
Approach Delay (s)	8.3	8.3	8.0	7.8
Approach LOS	A	A	A	A

Intersection Summary

Delay	8.3
Level of Service	A
Intersection Capacity Utilization	31.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
14: Street JJ & Street A

FT_Full Build-out 2041
Afternoon Peak Hour




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	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		0.988						0.957			0.962	
Flt Protected		0.998			0.996			0.982				
Satd. Flow (prot)	0	1894	0	0	1913	0	0	1805	0	0	1848	0
Flt Permitted		0.998			0.996			0.982				
Satd. Flow (perm)	0	1894	0	0	1913	0	0	1805	0	0	1848	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

FT_Full Build-out 2041
Afternoon Peak Hour



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	173	17	14	178	0	17	15	15	0	13	5
Future Volume (vph)	7	173	17	14	178	0	17	15	15	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	173	17	14	178	0	17	15	15	0	13	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	197	192	47	18								
Volume Left (vph)	7	14	17	0								
Volume Right (vph)	17	0	15	5								
Hadj (s)	-0.04	0.01	-0.12	-0.17								
Departure Headway (s)	4.2	4.3	4.7	4.6								
Degree Utilization, x	0.23	0.23	0.06	0.02								
Capacity (veh/h)	834	814	710	701								
Control Delay (s)	8.5	8.5	8.0	7.8								
Approach Delay (s)	8.5	8.5	8.0	7.8								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.4
Level of Service	A
Intersection Capacity Utilization	34.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
15: Street I & Street A

FT_Full Build-out 2041
Afternoon Peak Hour



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		0.988						0.968			0.955	
Flt Protected		0.998			0.997			0.974				
Satd. Flow (prot)	0	1894	0	0	1915	0	0	1811	0	0	1835	0
Flt Permitted		0.998			0.997			0.974				
Satd. Flow (perm)	0	1894	0	0	1915	0	0	1811	0	0	1835	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

FT_Full Build-out 2041
Afternoon Peak Hour



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	150	15	10	161	0	27	12	12	0	10	5
Future Volume (vph)	7	150	15	10	161	0	27	12	12	0	10	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	150	15	10	161	0	27	12	12	0	10	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	172	171	51	15								
Volume Left (vph)	7	10	27	0								
Volume Right (vph)	15	0	12	5								
Hadj (s)	-0.04	0.01	-0.04	-0.20								
Departure Headway (s)	4.2	4.2	4.6	4.5								
Degree Utilization, x	0.20	0.20	0.07	0.02								
Capacity (veh/h)	838	829	719	726								
Control Delay (s)	8.2	8.3	8.0	7.6								
Approach Delay (s)	8.2	8.3	8.0	7.6								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.2
Level of Service	A
Intersection Capacity Utilization	31.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics

FT_Full Build-out 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



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		0.952			0.976			0.977			0.992	
Flt Protected		0.998			0.992			0.988			0.990	
Satd. Flow (prot)	0	1825	0	0	1860	0	0	1854	0	0	1887	0
Flt Permitted		0.998			0.992			0.988			0.990	
Satd. Flow (perm)	0	1825	0	0	1860	0	0	1854	0	0	1887	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

FT_Full Build-out 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	83	48	25	105	28	91	208	62	21	76	6
Future Volume (vph)	5	83	48	25	105	28	91	208	62	21	76	6
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)	5	83	48	25	105	28	91	208	62	21	76	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	136	158	361	103								
Volume Left (vph)	5	25	91	21								
Volume Right (vph)	48	28	62	6								
Hadj (s)	-0.20	-0.07	-0.05	0.01								
Departure Headway (s)	5.1	5.2	4.8	5.2								
Degree Utilization, x	0.19	0.23	0.48	0.15								
Capacity (veh/h)	633	627	721	632								
Control Delay (s)	9.3	9.7	12.1	9.1								
Approach Delay (s)	9.3	9.7	12.1	9.1								
Approach LOS	A	A	B	A								

Intersection Summary

Delay	10.7
Level of Service	B
Intersection Capacity Utilization	52.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics

48: Humber Station Rd & Street E

FT_Full Build-out 2041

Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
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		0.94			0.93		0.91		0.86	0.96		1.00
Frt		0.913			0.999				0.850		0.998	
Flt Protected		0.995			0.953		0.950		0.950			
Satd. Flow (prot)	0	1654	0	0	1827	0	1825	1921	1633	1825	1914	0
Flt Permitted		0.963			0.688		0.643		0.416			
Satd. Flow (perm)	0	1587	0	0	1233	0	1122	1921	1411	767	1914	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			1				230			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

FT_Full Build-out 2041

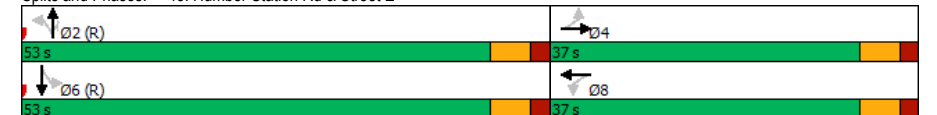
Afternoon Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT			
Lane Configurations		↕		↕	↕	↕	↕	↕	↕		↕	↕
Traffic Volume (vph)	6	14	198	1	76	518	230	4	180		4	180
Future Volume (vph)	6	14	198	1	76	518	230	4	180		4	180
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA		Perm	NA
Protected Phases		4		8		2		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		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		25.0	25.0
Total Split (s)	37.0	37.0	37.0	37.0	53.0	53.0	53.0	53.0	53.0		53.0	53.0
Total Split (%)	41.1%	41.1%	41.1%	41.1%	58.9%	58.9%	58.9%	58.9%	58.9%		58.9%	58.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.0	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	C-Max	C-Max	C-Max	C-Max	C-Max		C-Max	C-Max
Act Effct Green (s)		19.9		19.9	58.1	58.1	58.1	58.1	58.1		58.1	58.1
Actuated g/C Ratio		0.22		0.22	0.65	0.65	0.65	0.65	0.65		0.65	0.65
v/c Ratio		0.15		0.74	0.11	0.42	0.23	0.01	0.15		0.15	0.15
Control Delay		13.1		47.4	8.2	10.2	1.9	8.2	7.8		8.2	7.8
Queue Delay		0.0		0.0	0.0	0.6	0.0	0.0	0.0		0.0	0.0
Total Delay		13.1		47.4	8.2	10.9	1.9	8.2	7.8		8.2	7.8
LOS		B		D	A	B	A	A	A		A	A
Approach Delay		13.1		47.4		8.1			7.8			
Approach LOS		B		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: 0.74
 Intersection Signal Delay: 14.5
 Intersection Capacity Utilization 64.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
48: Humber Station Rd & Street E

FT_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	201	76	518	230	4	182
v/c Ratio	0.15	0.74	0.11	0.42	0.23	0.01	0.15
Control Delay	13.1	47.4	8.2	10.2	1.9	8.2	7.8
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	13.1	47.4	8.2	10.9	1.9	8.2	7.8
Queue Length 50th (m)	2.9	33.6	4.7	40.5	0.0	0.2	11.4
Queue Length 95th (m)	11.0	51.5	13.0	78.9	9.7	1.8	25.5
Internal Link Dist (m)	116.6	92.4		129.1			337.3
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	570	425	723	1239	991	494	1235
Starvation Cap Reductn	0	0	0	380	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.47	0.11	0.60	0.23	0.01	0.15

Intersection Summary

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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	6	14	36	198	1	2	76	518	230	4	180	2
Future Volume (vph)	6	14	36	198	1	2	76	518	230	4	180	2
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	
Frbp, ped/bikes		0.95			1.00		1.00	1.00	0.86	1.00	1.00	
Flpb, ped/bikes		0.99			0.94		0.91	1.00	1.00	0.95	1.00	
Frt		0.91			1.00		1.00	1.00	0.85	1.00	1.00	
Fit Protected		0.99			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1641			1708		1657	1921	1411	1739	1915	
Fit Permitted		0.96			0.69		0.64	1.00	1.00	0.42	1.00	
Satd. Flow (perm)		1588			1233		1121	1921	1411	762	1915	
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	14	36	198	1	2	76	518	230	4	180	2
RTOR Reduction (vph)	0	28	0	0	1	0	0	0	82	0	0	0
Lane Group Flow (vph)	0	28	0	0	200	0	76	518	148	4	182	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	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)		19.9			19.9		58.1	58.1	58.1	58.1	58.1	
Effective Green, g (s)		19.9			19.9		58.1	58.1	58.1	58.1	58.1	
Actuated g/C Ratio		0.22			0.22		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)		351			272		723	1240	910	491	1236	
v/s Ratio Prot							c0.27				0.09	
v/s Ratio Perm		0.02			c0.16		0.07		0.11	0.01		
v/c Ratio		0.08			0.74		0.11	0.42	0.16	0.01	0.15	
Uniform Delay, d1		27.8			32.6		6.1	7.7	6.3	5.7	6.2	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.1			9.9		0.3	1.0	0.4	0.0	0.3	
Delay (s)		27.9			42.5		6.4	8.8	6.7	5.7	6.5	
Level of Service		C			D		A	A	A	A	A	
Approach Delay (s)		27.9			42.5			8.0			6.5	
Approach LOS		C			D			A			A	

Intersection Summary

HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics

FT_Full Build-out 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
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	0.95	0.98		0.94		0.91	0.91	0.97			0.99	
Frt		0.969				0.850		0.948			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1825	1827	0	1825	1921	1633	1825	3352	0	1825	3601	0
Flt Permitted	0.365			0.522			0.585			0.204		
Satd. Flow (perm)	669	1827	0	947	1921	1487	1022	3352	0	392	3601	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				76		124			8	
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

FT_Full Build-out 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	39	155	157	268	68	104	653	170	258
Future Volume (vph)	39	155	157	268	68	104	653	170	258
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)	35.0	35.0	35.0	35.0	35.0	49.0	49.0	16.0	65.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	35.0%	49.0%	49.0%	16.0%	65.0%
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)	20.5	20.5	20.5	20.5	20.5	54.6	54.6	69.5	67.5
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.55	0.55	0.70	0.68
v/c Ratio	0.28	0.51	0.81	0.68	0.19	0.19	0.53	0.43	0.11
Control Delay	36.5	36.2	66.4	44.9	6.9	15.1	15.2	9.6	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	36.2	66.4	44.9	6.9	15.1	15.2	9.6	6.5
LOS	D	D	E	D	A	B	B	A	A
Approach Delay		36.3		46.5			15.2		7.7
Approach LOS		D		D			B		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: 0.81
 Intersection Signal Delay: 22.7
 Intersection Capacity Utilization 82.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

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



Queues
58: Humber Station Rd & Street Y

FT_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	195	157	268	68	104	1003	170	270
v/c Ratio	0.28	0.51	0.81	0.68	0.19	0.19	0.53	0.43	0.11
Control Delay	36.5	36.2	66.4	44.9	6.9	15.1	15.2	9.6	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.5	36.2	66.4	44.9	6.9	15.1	15.2	9.6	6.5
Queue Length 50th (m)	6.7	32.8	30.4	50.4	0.0	9.9	55.2	10.0	8.5
Queue Length 95th (m)	15.0	48.8	49.2	69.2	8.6	25.3	95.3	22.9	17.2
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)	194	539	274	557	485	558	1887	444	2433
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	0.20	0.36	0.57	0.48	0.14	0.19	0.53	0.38	0.11

Intersection Summary

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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	39	155	40	157	268	68	104	653	350	170	258	12
Future Volume (vph)	39	155	40	157	268	68	104	653	350	170	258	12
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	
Frbp, ped/bikes	1.00	0.98		1.00	1.00	0.91	1.00	0.97		1.00	0.99	
Flpb, ped/bikes	0.96	1.00		0.95	1.00	1.00	0.91	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.95		1.00	0.99	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1746	1828		1726	1921	1487	1660	3351		1822	3602	
Fit Permitted	0.36	1.00		0.52	1.00	1.00	0.59	1.00		0.20	1.00	
Satd. Flow (perm)	671	1828		948	1921	1487	1023	3351		391	3602	
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)	39	155	40	157	268	68	104	653	350	170	258	12
RTOR Reduction (vph)	0	10	0	0	0	54	0	56	0	0	3	0
Lane Group Flow (vph)	39	185	0	157	268	14	104	947	0	170	267	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
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)	20.5	20.5		20.5	20.5	54.6		54.6		67.5	67.5	
Effective Green, g (s)	20.5	20.5		20.5	20.5	54.6		54.6		67.5	67.5	
Actuated g/C Ratio	0.20	0.20		0.20	0.20	0.55		0.55		0.68	0.68	
Clearance Time (s)	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	
Lane Grp Cap (vph)	137	374		194	393	304	558	1829		391	2431	
v/s Ratio Prot		0.10			0.14			0.28		0.04	0.07	
v/s Ratio Perm	0.06			0.17		0.10				0.25		
v/c Ratio	0.28	0.49		0.81	0.68	0.05	0.19	0.52		0.43	0.11	
Uniform Delay, d1	33.6	35.2		37.9	36.7	31.9	11.5	14.4		7.9	5.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.1	1.0		21.4	4.8	0.1	0.7	1.1		0.8	0.1	
Delay (s)	34.7	36.2		59.3	41.6	32.0	12.2	15.4		8.7	5.8	
Level of Service	C	D		E	D	C	B	B		A	A	
Approach Delay (s)		35.9			45.9			15.1			6.9	
Approach LOS		D			D			B			A	

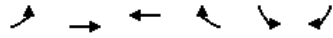
Intersection Summary

HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FT_Full Build-out 2041
Afternoon Peak Hour



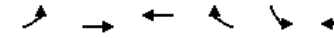
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.991	
Flt Protected					0.955	
Satd. Flow (prot)	0	1921	1896	0	1818	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	1921	1896	0	1818	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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	221	225	23	14	1
Future Volume (vph)	0	221	225	23	14	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	221	225	23	14	1
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	221	248	15			
Volume Left (vph)	0	0	14			
Volume Right (vph)	0	23	1			
Hadj (s)	0.00	-0.06	0.15			
Departure Headway (s)	4.2	4.1	5.0			
Degree Utilization, x	0.26	0.28	0.02			
Capacity (veh/h)	847	866	650			
Control Delay (s)	8.6	8.7	8.1			
Approach Delay (s)	8.6	8.7	8.1			
Approach LOS	A	A	A			

Intersection Summary

Delay			8.6			
Level of Service			A			
Intersection Capacity Utilization		31.7%		ICU Level of Service		A
Analysis Period (min)			15			

Lanes and Geometrics
64: Street JJ & Street Y

FT_Full Build-out 2041
Afternoon Peak Hour



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			0.988			0.975			0.994	
Flt Protected		0.999			0.995			0.995			0.994	
Satd. Flow (prot)	0	1906	0	0	1889	0	0	1864	0	0	1898	0
Flt Permitted		0.999			0.995			0.995			0.994	
Satd. Flow (perm)	0	1906	0	0	1889	0	0	1864	0	0	1898	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

FT_Full Build-out 2041
Afternoon Peak Hour



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	234	13	34	272	30	19	141	36	17	117	6
Future Volume (vph)	7	234	13	34	272	30	19	141	36	17	117	6
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	234	13	34	272	30	19	141	36	17	117	6
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	254	336	196	140								
Volume Left (vph)	7	34	19	17								
Volume Right (vph)	13	30	36	6								
Hadj (s)	-0.03	-0.03	-0.09	0.00								
Departure Headway (s)	5.4	5.3	5.7	5.9								
Degree Utilization, x	0.38	0.49	0.31	0.23								
Capacity (veh/h)	615	642	564	536								
Control Delay (s)	11.7	13.3	11.2	10.6								
Approach Delay (s)	11.7	13.3	11.2	10.6								
Approach LOS	B	B	B	B								

Intersection Summary

Delay	12.0
Level of Service	B
Intersection Capacity Utilization	52.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

FT_Full Build-out 2041
Afternoon Peak Hour

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		0.987			0.990			0.993			0.991	
Flt Protected		0.998			0.996			0.994			0.995	
Satd. Flow (prot)	0	1892	0	0	1894	0	0	1896	0	0	1894	0
Flt Permitted		0.998			0.996			0.994			0.995	
Satd. Flow (perm)	0	1892	0	0	1894	0	0	1896	0	0	1894	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

FT_Full Build-out 2041
Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	242	28	27	314	26	23	148	9	15	121	10
Future Volume (vph)	12	242	28	27	314	26	23	148	9	15	121	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)	12	242	28	27	314	26	23	148	9	15	121	10
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	282	367	180	146								
Volume Left (vph)	12	27	23	15								
Volume Right (vph)	28	26	9	10								
Hadj (s)	-0.05	-0.03	0.00	-0.02								
Departure Headway (s)	5.5	5.3	6.0	6.0								
Degree Utilization, x	0.43	0.55	0.30	0.24								
Capacity (veh/h)	613	638	531	509								
Control Delay (s)	12.5	14.6	11.5	11.0								
Approach Delay (s)	12.5	14.6	11.5	11.0								
Approach LOS	B	B	B	B								

Intersection Summary

Delay	12.9
Level of Service	B
Intersection Capacity Utilization	48.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FT_Full Build-out 2041
Afternoon Peak Hour



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	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		0.919						0.989				
Flt Protected					0.976			0.998				
Satd. Flow (prot)	0	1766	0	0	1875	0	0	1896	0	0	1921	0
Flt Permitted					0.976			0.998				
Satd. Flow (perm)	0	1766	0	0	1875	0	0	1896	0	0	1921	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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	6	14	15	0	8	192	17	0	159	0
Future Volume (Veh/h)	0	4	6	14	15	0	8	192	17	0	159	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	4	6	14	15	0	8	192	17	0	159	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)								262				
pX, platoon unblocked												
vC, conflicting volume	433	484	259	484	476	250	209			259		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433	484	259	484	476	250	209			259		
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	97	97	100	99			100		
cM capacity (veh/h)	466	442	719	418	447	759	1315			1261		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	10	29	217	159								
Volume Left	0	14	8	0								
Volume Right	6	0	17	0								
cSH	575	432	1315	1261								
Volume to Capacity	0.02	0.07	0.01	0.00								
Queue Length 95th (m)	0.4	1.7	0.1	0.0								
Control Delay (s)	11.4	13.9	0.3	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.4	13.9	0.3	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				1.4								
Intersection Capacity Utilization			36.1%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
85: Street I & Street EE

FT_Full Build-out 2041
Afternoon Peak Hour



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	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		0.897										
Flt Protected								0.996				
Satd. Flow (prot)	0	1723	0	0	1921	0	0	1913	0	0	1921	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1723	0	0	1921	0	0	1913	0	0	1921	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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	13	0	15	0	16	201	0	0	165	0
Future Volume (Veh/h)	0	4	13	0	15	0	16	201	0	0	165	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	4	13	0	15	0	16	201	0	0	165	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	506	498	265	513	498	301	215			251		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	506	498	265	513	498	301	215			251		
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	97	100	99			100		
cM capacity (veh/h)	397	432	713	393	432	681	1308			1269		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	17	15	217	165
Volume Left	0	0	16	0
Volume Right	13	0	0	0
cSH	618	432	1308	1269
Volume to Capacity	0.03	0.03	0.01	0.00
Queue Length 95th (m)	0.7	0.9	0.3	0.0
Control Delay (s)	11.0	13.6	0.7	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.0	13.6	0.7	0.0
Approach LOS	B	B		

Intersection Summary

Average Delay	1.3
Intersection Capacity Utilization	42.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
88: Humber Station Rd & Street EE

FT_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
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)	1825	0	0	3650	3628	0
Flt Permitted	0.950					
Satd. Flow (perm)	1825	0	0	3650	3628	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

FT_Full Build-out 2041
Afternoon Peak Hour

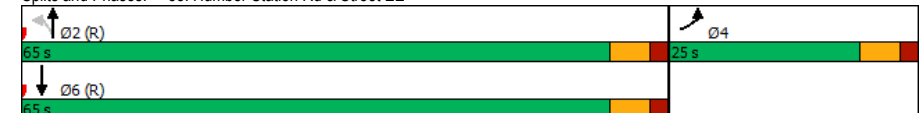


Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑↑	↑↑
Traffic Volume (vph)	4	1056	651
Future Volume (vph)	4	1056	651
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	25.0	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	0.34	0.21
Control Delay	29.8	4.1	3.5
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	4.1	3.5
LOS	C	A	A
Approach Delay	29.8	4.1	3.5
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 50
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.34
 Intersection Signal Delay: 3.9
 Intersection Capacity Utilization 43.4%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

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



Queues
88: Humber Station Rd & Street EE

FT_Full Build-out 2041
Afternoon Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	4	1056	666
v/c Ratio	0.02	0.34	0.21
Control Delay	29.8	4.1	3.5
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	4.1	3.5
Queue Length 50th (m)	0.7	0.0	0.0
Queue Length 95th (m)	3.3	55.3	31.3
Internal Link Dist (m)	308.9	323.2	104.1
Turn Bay Length (m)			
Base Capacity (vph)	385	3147	3129
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.01	0.34	0.21

Intersection Summary

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

FT_Full Build-out 2041
Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑↑	↑↑	
Traffic Volume (vph)	4	0	0	1056	651	15
Future Volume (vph)	4	0	0	1056	651	15
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	
Frbp, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1825			3650	3627	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1825			3650	3627	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	0	0	1056	651	15
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	4	0	0	1056	665	0
Confl. Peds. (#/hr)			50			50
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
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)	154			2855	2837	
v/s Ratio Prot	c0.00			c0.29	0.18	
v/s Ratio Perm						
v/c Ratio	0.03			0.37	0.23	
Uniform Delay, d1	37.8			3.0	2.6	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	0.1			0.4	0.2	
Delay (s)	37.9			3.4	2.8	
Level of Service	D			A	A	
Approach Delay (s)	37.9			3.4	2.8	
Approach LOS	D			A	A	

Intersection Summary

HCM 2000 Control Delay	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	43.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
1: The Gore Rd & King St

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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		0.96	0.96			0.96	
Frt		0.995			0.978			0.962			0.961	
Flt Protected	0.950			0.950			0.950		0.950			
Satd. Flow (prot)	1562	1733	0	1681	1722	0	1261	1721	0	1681	1778	0
Flt Permitted	0.094			0.136			0.294		0.076			
Satd. Flow (perm)	155	1733	0	241	1722	0	376	1721	0	134	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			8			18				18
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

FT_Full Build-out_No Improvements 2041

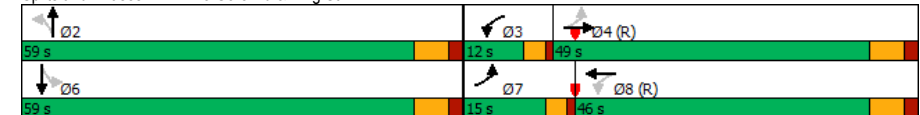
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	265	561	189	588	57	802	38	378
Future Volume (vph)	265	561	189	588	57	802	38	378
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	12.0	46.0	59.0	59.0	59.0	59.0
Total Split (%)	12.5%	40.8%	10.0%	38.3%	49.2%	49.2%	49.2%	49.2%
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	50.0	39.4	52.4	52.4	52.4	52.4
Actuated g/C Ratio	0.47	0.35	0.42	0.33	0.44	0.44	0.44	0.44
v/c Ratio	1.32	0.95	0.96	1.21	0.35	1.41	0.66	0.65
Control Delay	201.1	63.8	80.6	145.4	30.1	221.3	79.5	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	201.1	63.8	80.6	145.4	30.1	221.3	79.5	30.2
LOS	F	E	F	F	C	F	E	C
Approach Delay		106.8		131.5		211.6		33.7
Approach LOS		F		F		F		C

Intersection Summary

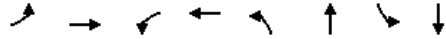
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.41
 Intersection Signal Delay: 136.2
 Intersection Capacity Utilization 126.4%
 Analysis Period (min) 15
 Intersection LOS: F
 ICU Level of Service H

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



Queues
1: The Gore Rd & King St

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	265	581	189	689	57	1073	38	509
v/c Ratio	1.32	0.95	0.96	1.21	0.35	1.41	0.66	0.65
Control Delay	201.1	63.8	80.6	145.4	30.1	221.3	79.5	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	201.1	63.8	80.6	145.4	30.1	221.3	79.5	30.2
Queue Length 50th (m)	~69.0	136.9	26.7	~205.2	9.1	~352.6	7.2	92.7
Queue Length 95th (m)	#123.9	#210.0	#72.1	#279.8	21.8	#434.4	#28.4	131.5
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	196	570	164	761	58	786
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	1.32	0.95	0.96	1.21	0.35	1.41	0.66	0.65

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 FT_Full Build-out_No Improvements 2041
1: The Gore Rd & King St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	265	561	20	189	588	101	57	802	271	38	378	131
Future Volume (vph)	265	561	20	189	588	101	57	802	271	38	378	131
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	
Frbp, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.96		1.00	0.96	
Frt, ped/bikes	1.00	0.99		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	1722		1215	1721		1681	1779	
Flt Permitted	0.09	1.00		0.14	1.00		0.29	1.00		0.08	1.00	
Satd. Flow (perm)	155	1733		240	1722		376	1721		135	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)	265	561	20	189	588	101	57	802	271	38	378	131
RTOR Reduction (vph)	0	1	0	0	5	0	0	10	0	0	10	0
Lane Group Flow (vph)	265	580	0	189	684	0	57	1063	0	38	499	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	2		6	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	53.4	42.4		47.4	39.4		52.4	52.4		52.4	52.4	
Effective Green, g (s)	53.4	42.4		47.4	39.4		52.4	52.4		52.4	52.4	
Actuated g/C Ratio	0.44	0.35		0.39	0.33		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		190	565		164	751		58	776	
v/s Ratio Prot	c0.12	0.33		0.07	0.40			c0.62			0.28	
v/s Ratio Perm	c0.47			0.32			0.15			0.28		
v/c Ratio	1.35	0.95		0.99	1.21		0.35	1.42		0.66	0.64	
Uniform Delay, d1	33.9	37.7		31.8	40.3		22.4	33.8		26.7	26.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	185.2	25.5		63.4	110.2		1.3	194.7		23.6	1.8	
Delay (s)	219.1	63.2		95.2	150.5		23.7	228.5		50.2	28.3	
Level of Service	F	E		F	F		C	F		D	C	
Approach Delay (s)		112.0			138.6			218.2			29.8	
Approach LOS		F			F			F			C	

Intersection Summary

HCM 2000 Control Delay	140.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	126.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
2: Humber Station Rd & King St

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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		0.973			0.962			0.990			0.963	
Flt Protected		0.988			0.999			0.985			0.991	
Satd. Flow (prot)	0	1691	0	0	1711	0	0	1740	0	0	1684	0
Flt Permitted		0.484			0.969			0.575			0.694	
Satd. Flow (perm)	0	824	0	0	1659	0	0	1005	0	0	1175	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			19			4			18	
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

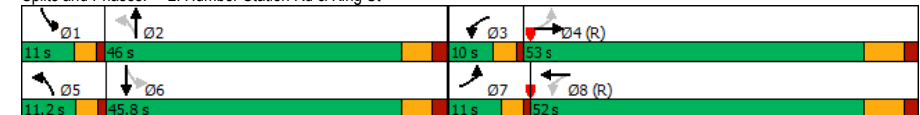
FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔		↔		↔		↔
Traffic Volume (vph)	247	590	18	603	277	578	122	354
Future Volume (vph)	247	590	18	603	277	578	122	354
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	53.0	10.0	52.0	11.2	46.0	11.0	45.8
Total Split (%)	9.2%	44.2%	8.3%	43.3%	9.3%	38.3%	9.2%	38.2%
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	2.2	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)		55.6		55.6		50.8		50.8
Actuated g/C Ratio		0.46		0.46		0.42		0.42
v/c Ratio		2.70		1.11		2.16		1.29
Control Delay		788.7		98.0		552.7		176.0
Queue Delay		0.0		0.0		0.0		0.0
Total Delay		788.7		98.0		552.7		176.0
LOS		F		F		F		F
Approach Delay		788.7		98.0		552.7		176.0
Approach LOS		F		F		F		F

Intersection Summary

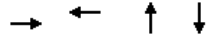
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 2.70
 Intersection Signal Delay: 440.1
 Intersection LOS: F
 Intersection Capacity Utilization 206.0%
 ICU Level of Service H
 Analysis Period (min) 15

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



Queues
2: Humber Station Rd & King St

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



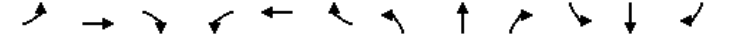
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1046	864	923	655
v/c Ratio	2.70	1.11	2.16	1.29
Control Delay	788.7	98.0	552.7	176.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	788.7	98.0	552.7	176.0
Queue Length 50th (m)	~344.2	~239.8	~364.9	~202.9
Queue Length 95th (m)	#425.6	#318.5	#444.6	#276.4
Internal Link Dist (m)	305.7	816.4	324.5	323.2
Turn Bay Length (m)				
Base Capacity (vph)	388	778	427	507
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	2.70	1.11	2.16	1.29

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 FT_Full Build-out_No Improvements 2041
2: Humber Station Rd & King St

Afternoon Peak Hour



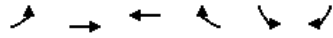
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	247	590	209	18	603	243	277	578	68	122	354	179
Future Volume (vph)	247	590	209	18	603	243	277	578	68	122	354	179
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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			0.96	
Flpb, ped/bikes		1.00			1.00			0.99			1.00	
Frt		0.97			0.96			0.99			0.96	
Flt Protected		0.99			1.00			0.99			0.99	
Satd. Flow (prot)		1692			1711			1727			1684	
Flt Permitted		0.48			0.97			0.58			0.69	
Satd. Flow (perm)		829			1660			1008			1180	
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)	247	590	209	18	603	243	277	578	68	122	354	179
RTOR Reduction (vph)	0	7	0	0	10	0	0	2	0	0	10	0
Lane Group Flow (vph)	0	1039	0	0	854	0	0	921	0	0	645	0
Confl. Peds. (#/hr)	50		50	50		50	50		50	50		50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	4%	0%	72%	3%	6%	3%
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)		55.6			55.6			50.8			50.8	
Effective Green, g (s)		55.6			55.6			50.8			50.8	
Actuated g/C Ratio		0.46			0.46			0.42			0.42	
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)		384			769			426			499	
v/s Ratio Prot												
v/s Ratio Perm		c1.25			0.51			c0.91			0.55	
v/c Ratio		2.71			1.11			2.16			1.29	
Uniform Delay, d1		32.2			32.2			34.6			34.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		775.0			67.1			530.3			145.7	
Delay (s)		807.2			99.3			564.9			180.3	
Level of Service		F			F			F			F	
Approach Delay (s)		807.2			99.3			564.9			180.3	
Approach LOS		F			F			F			F	

Intersection Summary

HCM 2000 Control Delay	450.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	206.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics
6: King St & Street JJ

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	1679	0
Flt Permitted	0.180				0.967	
Satd. Flow (perm)	328	1883	1883	1338	1558	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				62	21	
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

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

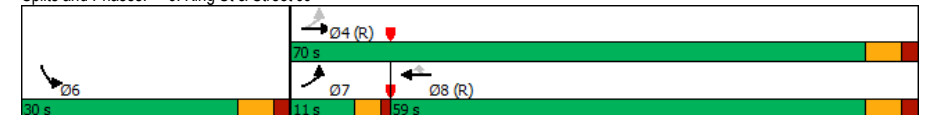


Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↑	↑	↑	↑	↓
Traffic Volume (vph)	80	804	837	163	139
Future Volume (vph)	80	804	837	163	139
Turn Type	pm+pt	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases	4			8	
Detector Phase	7	4	8	8	6
Switch Phase					
Minimum Initial (s)	5.0	5.0	5.0	5.0	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)	72.6	70.6	62.0	62.0	17.4
Actuated g/C Ratio	0.73	0.71	0.62	0.62	0.17
v/c Ratio	0.24	0.60	0.72	0.19	0.65
Control Delay	6.9	11.2	17.3	9.5	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	11.2	17.3	9.5	43.3
LOS	A	B	B	A	D
Approach Delay		10.8	16.0		43.3
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: 0.72
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 80.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 6: King St & Street JJ



Queues
6: King St & Street JJ

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



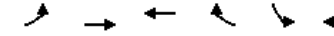
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	80	804	837	163	201
v/c Ratio	0.24	0.60	0.72	0.19	0.65
Control Delay	6.9	11.2	17.3	9.5	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.9	11.2	17.3	9.5	43.3
Queue Length 50th (m)	3.7	68.0	87.8	10.0	34.7
Queue Length 95th (m)	10.2	133.5	#101.3	m13.5	53.5
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	336	1329	1167	853	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	0.24	0.60	0.72	0.19	0.48

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 FT_Full Build-out_No Improvements 2041
6: King St & Street JJ

Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↔	↔
Traffic Volume (vph)	80	804	837	163	139	62
Future Volume (vph)	80	804	837	163	139	62
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	6.0
Lane Util. Factor	1.00	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	
Fr t	1.00	1.00	1.00	0.85	0.96	
Fl t Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1730	1883	1883	1338	1679	
Fl t Permitted	0.18	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	328	1883	1883	1338	1679	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	804	837	163	139	62
RTOR Reduction (vph)	0	0	0	24	17	0
Lane Group Flow (vph)	80	804	837	139	184	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)	70.6	70.6	61.2	61.2	17.4	
Effective Green, g (s)	70.6	70.6	61.2	61.2	17.4	
Actuated g/C Ratio	0.71	0.71	0.61	0.61	0.17	
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)	307	1329	1152	818	292	
v/s Ratio Prot	0.01	c0.43	c0.44		c0.11	
v/s Ratio Perm	0.17			0.10		
v/c Ratio	0.26	0.60	0.73	0.17	0.63	
Uniform Delay, d1	10.3	7.5	13.6	8.4	38.3	
Progression Factor	1.00	1.00	0.91	1.34	1.00	
Incremental Delay, d2	0.5	2.1	2.4	0.3	4.2	
Delay (s)	10.7	9.6	14.8	11.5	42.5	
Level of Service	B	A	B	B	D	
Approach Delay (s)		9.7	14.2		42.5	
Approach LOS		A	B		D	

Intersection Summary

HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
7: King St & Street I

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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	1679	0
Flt Permitted	0.122				0.967	
Satd. Flow (perm)	222	1883	1883	1338	1558	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				55	21	
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

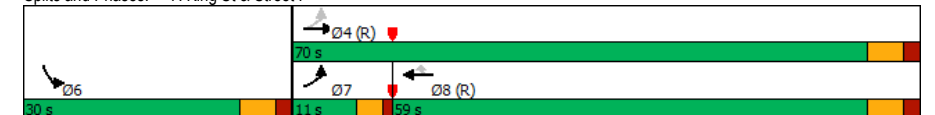
FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	↔	↔	↔	↔	↔
Traffic Volume (vph)	80	863	939	163	139
Future Volume (vph)	80	863	939	163	139
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)	72.6	70.6	62.0	62.0	17.4
Actuated g/C Ratio	0.73	0.71	0.62	0.62	0.17
v/c Ratio	0.31	0.65	0.80	0.19	0.65
Control Delay	7.0	7.5	24.3	7.8	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	7.5	24.3	7.8	43.3
LOS	A	A	C	A	D
Approach Delay		7.4	21.9		43.3
Approach LOS		A	C		D

Intersection Summary

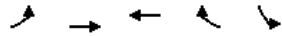
Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 17.7
 Intersection Capacity Utilization 85.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 7: King St & Street I



Queues
7: King St & Street I

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



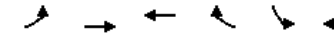
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	80	863	939	163	201
v/c Ratio	0.31	0.65	0.80	0.19	0.65
Control Delay	7.0	7.5	24.3	7.8	43.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.0	7.5	24.3	7.8	43.3
Queue Length 50th (m)	2.8	41.4	134.9	8.4	34.7
Queue Length 95th (m)	m5.9	73.7	#260.5	22.0	53.5
Internal Link Dist (m)		276.5	305.7		101.2
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	266	1329	1167	850	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	0.30	0.65	0.80	0.19	0.48

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 FT_Full Build-out_No Improvements 2041
7: King St & Street I

Afternoon Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↕	↕	↕
Traffic Volume (vph)	80	863	939	163	139	62
Future Volume (vph)	80	863	939	163	139	62
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	6.0
Lane Util. Factor	1.00	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	
Fr t	1.00	1.00	1.00	0.85	0.96	
Fl t Protected	0.95	1.00	1.00	1.00	0.97	
Satd. Flow (prot)	1730	1883	1883	1338	1679	
Fl t Permitted	0.12	1.00	1.00	1.00	0.97	
Satd. Flow (perm)	222	1883	1883	1338	1679	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	863	939	163	139	62
RTOR Reduction (vph)	0	0	0	21	17	0
Lane Group Flow (vph)	80	863	939	142	184	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)	70.6	70.6	61.2	61.2	17.4	
Effective Green, g (s)	70.6	70.6	61.2	61.2	17.4	
Actuated g/C Ratio	0.71	0.71	0.61	0.61	0.17	
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)	238	1329	1152	818	292	
v/s Ratio Prot	0.02	c0.46	c0.50		c0.11	
v/s Ratio Perm	0.22			0.11		
v/c Ratio	0.34	0.65	0.82	0.17	0.63	
Uniform Delay, d1	14.0	8.0	15.0	8.4	38.3	
Progression Factor	0.88	0.56	1.00	1.00	1.00	
Incremental Delay, d2	0.7	2.0	6.4	0.5	4.2	
Delay (s)	12.9	6.5	21.4	8.9	42.5	
Level of Service	B	A	C	A	D	
Approach Delay (s)		7.0	19.6		42.5	
Approach LOS		A	B		D	

Intersection Summary

HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	85.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
8: The Gore Rd & Street Y

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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	0.974		0.984			
Flt Protected	0.961				0.950	
Satd. Flow (prot)	1723	0	1820	0	1730	1883
Flt Permitted	0.961				0.063	
Satd. Flow (perm)	1580	0	1820	0	115	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	12		14			
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

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↙
Traffic Volume (vph)	145	1130	43	445
Future Volume (vph)	145	1130	43	445
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)	14.5	63.5	63.5	63.5
Actuated g/C Ratio	0.16	0.71	0.71	0.71
v/c Ratio	0.62	1.00	0.54	0.34
Control Delay	41.4	40.1	37.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.4	40.1	37.2	4.8
LOS	D	D	D	A
Approach Delay	41.4	40.1		7.6
Approach LOS	D	D		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: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.00
 Intersection Signal Delay: 32.1
 Intersection Capacity Utilization 96.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service F

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



Queues
8: The Gore Rd & Street Y

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	179	1282	43	445
v/c Ratio	0.62	1.00	0.54	0.34
Control Delay	41.4	40.1	37.2	4.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.4	40.1	37.2	4.8
Queue Length 50th (m)	28.5	187.8	2.0	17.6
Queue Length 95th (m)	44.5	#349.9	m#24.5	33.8
Internal Link Dist (m)	110.7	554.8		187.4
Turn Bay Length (m)		25.0		
Base Capacity (vph)	430	1287	80	1328
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	0.42	1.00	0.54	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 FT_Full Build-out_No Improvements 2041
8: The Gore Rd & Street Y

Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	34	1130	152	43	445
Future Volume (vph)	145	34	1130	152	43	445
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	0.97		0.98		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1723		1820		1730	1883
Flt Permitted	0.96		1.00		0.06	1.00
Satd. Flow (perm)	1723		1820		115	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	145	34	1130	152	43	445
RTOR Reduction (vph)	10	0	4	0	0	0
Lane Group Flow (vph)	169	0	1278	0	43	445
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)	14.5		63.5		63.5	63.5
Effective Green, g (s)	14.5		63.5		63.5	63.5
Actuated g/C Ratio	0.16		0.71		0.71	0.71
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)	277		1284		81	1328
v/s Ratio Prot	c0.10		c0.70			0.24
v/s Ratio Perm					0.37	
v/c Ratio	0.61		1.00		0.53	0.34
Uniform Delay, d1	35.1		13.1		6.2	5.1
Progression Factor	1.00		1.00		0.83	0.68
Incremental Delay, d2	3.8		24.0		22.0	0.7
Delay (s)	38.9		37.1		27.2	4.1
Level of Service	D		D		C	A
Approach Delay (s)	38.9		37.1			6.2
Approach LOS	D		D			A


Intersection Summary

HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lanes and Geometrics
9: The Gore Rd & Street DDD

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour


						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
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		0.983			
Flt Protected						
Satd. Flow (prot)	1629	0	1851	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1851	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 FT_Full Build-out_No Improvements 2041
9: The Gore Rd & Street DDD

Afternoon Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			A
Traffic Volume (veh/h)	0	10	1021	143	0	489
Future Volume (Veh/h)	0	10	1021	143	0	489
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	10	1021	143	0	489
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	0.34	0.32			0.32	
vC, conflicting volume	1682	1192			1214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1798	547			613	
tC, single (s)	6.4	6.2			4.1	
iC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	94			100	
cM capacity (veh/h)	27	159			298	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	10	1164	489			
Volume Left	0	0	0			
Volume Right	10	143	0			
cSH	159	1700	1700			
Volume to Capacity	0.06	0.68	0.29			
Queue Length 95th (m)	1.6	0.0	0.0			
Control Delay (s)	29.2	0.0	0.0			
Lane LOS	D					
Approach Delay (s)	29.2	0.0	0.0			
Approach LOS	D					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			81.2%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
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		0.98			
Frt	0.966		0.979			
Flt Protected	0.964				0.950	
Satd. Flow (prot)	1701	0	1801	0	1730	1883
Flt Permitted	0.964				0.155	
Satd. Flow (perm)	1571	0	1801	0	282	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	18		19			
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

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↗	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↙
Traffic Volume (vph)	140	872	49	349
Future Volume (vph)	140	872	49	349
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

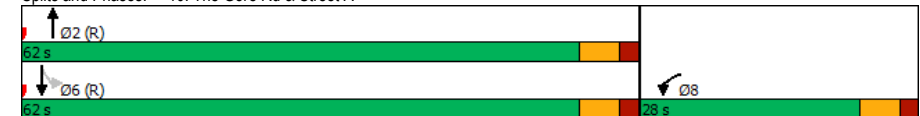
Lead-Lag Optimize?

Recall Mode	None	C-Min	C-Min	C-Min
Act Effct Green (s)	14.7	63.3	63.3	63.3
Actuated g/C Ratio	0.16	0.70	0.70	0.70
v/c Ratio	0.64	0.81	0.25	0.26
Control Delay	41.0	17.4	10.3	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.0	17.4	10.3	6.2
LOS	D	B	B	A
Approach Delay	41.0	17.4		6.7
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: 0.81
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 83.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

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



Queues
10: The Gore Rd & Street A

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

	↙	↑	↘	↓
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	1031	49	349
v/c Ratio	0.64	0.81	0.25	0.26
Control Delay	41.0	17.4	10.3	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.0	17.4	10.3	6.2
Queue Length 50th (m)	28.8	123.9	2.6	19.1
Queue Length 95th (m)	45.6	127.3	11.1	40.6
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	429	1273	198	1325
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	0.44	0.81	0.25	0.26

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis FT_Full Build-out_No Improvements 2041
10: The Gore Rd & Street A
Afternoon Peak Hour

	↙	↖	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↙		↑		↘	↓
Traffic Volume (vph)	140	47	872	159	49	349
Future Volume (vph)	140	47	872	159	49	349
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		0.98		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)	1701		1802		1730	1883
Flt Permitted	0.96		1.00		0.15	1.00
Satd. Flow (perm)	1701		1802		282	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	140	47	872	159	49	349
RTOR Reduction (vph)	15	0	6	0	0	0
Lane Group Flow (vph)	172	0	1025	0	49	349
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)	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)	277		1267		198	1324
v/s Ratio Prot	c0.10		c0.57			0.19
v/s Ratio Perm					0.17	
v/c Ratio	0.62		0.81		0.25	0.26
Uniform Delay, d1	35.1		9.2		4.8	4.9
Progression Factor	1.00		1.41		1.00	1.00
Incremental Delay, d2	4.3		1.7		3.0	0.5
Delay (s)	39.3		14.7		7.8	5.3
Level of Service	D		B		A	A
Approach Delay (s)	39.3		14.7			5.6
Approach LOS	D		B			A

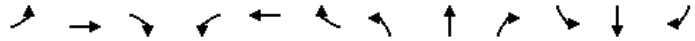
Intersection Summary

HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
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
12: Street VV & Street A

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	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		0.996			0.997						0.973	
Flt Protected								0.950			0.962	
Satd. Flow (prot)	0	1876	0	0	1878	0	0	1789	0	0	1763	0
Flt Permitted								0.950			0.962	
Satd. Flow (perm)	0	1876	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 FT_Full Build-out_No Improvements 2041
12: Street VV & Street A

Afternoon Peak Hour



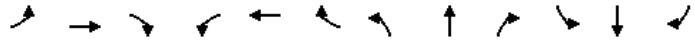
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	0	200	6	0	199	5	4	0	0	4	0	1
Future Volume (vph)	0	200	6	0	199	5	4	0	0	4	0	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	200	6	0	199	5	4	0	0	4	0	1
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	206	204	4	5								
Volume Left (vph)	0	0	4	4								
Volume Right (vph)	6	5	0	1								
Hadj (s)	0.02	0.02	0.23	0.07								
Departure Headway (s)	4.1	4.1	5.0	4.9								
Degree Utilization, x	0.24	0.23	0.01	0.01								
Capacity (veh/h)	858	859	657	673								
Control Delay (s)	8.4	8.4	8.0	7.9								
Approach Delay (s)	8.4	8.4	8.0	7.9								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.4
Level of Service	A
Intersection Capacity Utilization	31.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
14: Street JJ & Street A

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	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		0.988						0.957			0.962	
Flt Protected		0.998			0.996			0.982				
Satd. Flow (prot)	0	1857	0	0	1876	0	0	1770	0	0	1812	0
Flt Permitted		0.998			0.996			0.982				
Satd. Flow (perm)	0	1857	0	0	1876	0	0	1770	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 FT_Full Build-out_No Improvements 2041
14: Street JJ & Street A

Afternoon Peak Hour



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	173	17	14	178	0	17	15	15	0	13	5
Future Volume (vph)	7	173	17	14	178	0	17	15	15	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	173	17	14	178	0	17	15	15	0	13	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	197	192	47	18								
Volume Left (vph)	7	14	17	0								
Volume Right (vph)	17	0	15	5								
Hadj (s)	-0.01	0.05	-0.09	-0.13								
Departure Headway (s)	4.2	4.3	4.7	4.7								
Degree Utilization, x	0.23	0.23	0.06	0.02								
Capacity (veh/h)	827	807	704	695								
Control Delay (s)	8.5	8.6	8.0	7.8								
Approach Delay (s)	8.5	8.6	8.0	7.8								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.5
Level of Service	A
Intersection Capacity Utilization	34.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
15: Street I & Street A

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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		0.988						0.968			0.955	
Flt Protected		0.998			0.997			0.974				
Satd. Flow (prot)	0	1857	0	0	1878	0	0	1776	0	0	1799	0
Flt Permitted		0.998			0.997			0.974				
Satd. Flow (perm)	0	1857	0	0	1878	0	0	1776	0	0	1799	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 FT_Full Build-out_No Improvements 2041
15: Street I & Street A

Afternoon Peak Hour



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	150	15	10	161	0	27	12	12	0	10	5
Future Volume (vph)	7	150	15	10	161	0	27	12	12	0	10	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	150	15	10	161	0	27	12	12	0	10	5
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	172	171	51	15								
Volume Left (vph)	7	10	27	0								
Volume Right (vph)	15	0	12	5								
Hadj (s)	-0.01	0.05	0.00	-0.17								
Departure Headway (s)	4.2	4.3	4.7	4.6								
Degree Utilization, x	0.20	0.20	0.07	0.02								
Capacity (veh/h)	831	822	713	719								
Control Delay (s)	8.3	8.4	8.0	7.6								
Approach Delay (s)	8.3	8.4	8.0	7.6								
Approach LOS	A	A	A	A								

Intersection Summary

Delay	8.3
Level of Service	A
Intersection Capacity Utilization	31.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics

FT_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



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		0.952			0.976			0.977			0.992	
Flt Protected		0.998			0.992			0.988			0.990	
Satd. Flow (prot)	0	1789	0	0	1824	0	0	1818	0	0	1850	0
Flt Permitted		0.998			0.992			0.988			0.990	
Satd. Flow (perm)	0	1789	0	0	1824	0	0	1818	0	0	1850	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 FT_Full Build-out_No Improvements 2041

18: Humber Station Rd & Street A

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)		5	83	48	25	105	28	91	208	62	21	76
Future Volume (vph)		5	83	48	25	105	28	91	208	62	21	76
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)		5	83	48	25	105	28	91	208	62	21	76
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	136	158	361	103								
Volume Left (vph)	5	25	91	21								
Volume Right (vph)	48	28	62	6								
Hadj (s)	-0.17	-0.04	-0.02	0.04								
Departure Headway (s)	5.2	5.2	4.8	5.2								
Degree Utilization, x	0.19	0.23	0.48	0.15								
Capacity (veh/h)	627	622	715	626								
Control Delay (s)	9.4	9.8	12.2	9.1								
Approach Delay (s)	9.4	9.8	12.2	9.1								
Approach LOS	A	A	B	A								

Intersection Summary

Delay	10.8
Level of Service	B
Intersection Capacity Utilization	52.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
48: Humber Station Rd & Street E

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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		0.913			0.999			0.850		0.998		
Flt Protected		0.995			0.953		0.950		0.950			
Satd. Flow (prot)	0	1711	0	0	1793	0	1789	1883	1601	1789	1880	0
Flt Permitted		0.966			0.688		0.643		0.310			
Satd. Flow (perm)	0	1661	0	0	1295	0	1211	1883	1601	584	1880	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			1				230			1
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

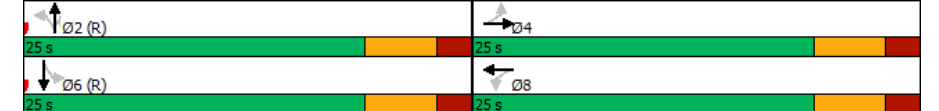
FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔		↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	6	14	198	1	76	518	230	4	180
Future Volume (vph)	6	14	198	1	76	518	230	4	180
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4		8		2		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		0.09		0.41	0.17	0.72	0.31	0.02	0.25
Control Delay		6.0		14.5	11.5	21.0	3.2	10.0	11.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		6.0		14.5	11.5	21.0	3.2	10.0	11.8
LOS		A		B	B	C	A	A	B
Approach Delay		6.0		14.5		15.1			11.8
Approach LOS		A		B		B			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: 0.72
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 64.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

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



Queues
48: Humber Station Rd & Street E

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



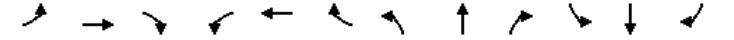
Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	56	201	76	518	230	4	182
v/c Ratio	0.09	0.41	0.17	0.72	0.31	0.02	0.25
Control Delay	6.0	14.5	11.5	21.0	3.2	10.0	11.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.0	14.5	11.5	21.0	3.2	10.0	11.8
Queue Length 50th (m)	1.1	13.0	4.5	39.3	0.0	0.2	11.0
Queue Length 95th (m)	6.4	27.2	11.5	#79.7	10.3	1.7	22.1
Internal Link Dist (m)	105.8	185.7		130.4			336.1
Turn Bay Length (m)			25.0			25.0	
Base Capacity (vph)	653	492	460	715	750	221	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	0.09	0.41	0.17	0.72	0.31	0.02	0.25

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis FT_Full Build-out_No Improvements 2041
48: Humber Station Rd & Street E

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↕	↕	↕	↕	↕	↕
Traffic Volume (vph)	6	14	36	198	1	2	76	518	230	4	180	2
Future Volume (vph)	6	14	36	198	1	2	76	518	230	4	180	2
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	
Fr't		0.91			1.00		1.00	1.00	0.85	1.00	1.00	
Fit Protected		0.99			0.95		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1711			1793		1789	1883	1601	1789	1880	
Fit Permitted		0.97			0.69		0.64	1.00	1.00	0.31	1.00	
Satd. Flow (perm)		1662			1294		1210	1883	1601	584	1880	
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	14	36	198	1	2	76	518	230	4	180	2
RTOR Reduction (vph)	0	22	0	0	1	0	0	0	143	0	1	0
Lane Group Flow (vph)	0	34	0	0	200	0	76	518	87	4	181	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)		631			491		459	715	608	221	714	
v/s Ratio Prot								c0.28				0.10
v/s Ratio Perm		0.02			c0.15		0.06		0.05	0.01		
v/c Ratio		0.05			0.41		0.17	0.72	0.14	0.02	0.25	
Uniform Delay, d1		9.8			11.4		10.3	13.3	10.2	9.7	10.6	
Progression Factor		1.00			1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		0.2			2.5		0.8	6.3	0.5	0.2	0.9	
Delay (s)		10.0			13.9		11.0	19.6	10.7	9.8	11.5	
Level of Service		A			B		B	B	B	A	B	
Approach Delay (s)		10.0			13.9			16.3			11.5	
Approach LOS		A			B			B			B	

Intersection Summary

HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lanes and Geometrics

FT_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
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	0.96	0.97		0.92		0.92	0.92	0.97		0.99		
Frt		0.969				0.850		0.948			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1789	1774	0	1789	1883	1601	1789	1735	0	1789	1859	0
Flt Permitted	0.367			0.533			0.593			0.146		
Satd. Flow (perm)	663	1774	0	919	1883	1470	1026	1735	0	275	1859	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13				54			62			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

FT_Full Build-out_No Improvements 2041

58: Humber Station Rd & Street Y

Afternoon Peak Hour

	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group									
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	39	155	157	268	68	104	653	170	258
Future Volume (vph)	39	155	157	268	68	104	653	170	258
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)	17.5	17.5	17.5	17.5	17.5	60.5	60.5	60.5	60.5
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.67	0.67	0.67	0.67
v/c Ratio	0.30	0.55	0.88	0.73	0.21	0.15	0.85	0.92	0.22
Control Delay	37.2	36.3	78.7	46.4	13.1	6.8	19.3	68.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	36.3	78.7	46.4	13.1	6.8	19.3	68.4	6.4
LOS	D	D	E	D	B	A	B	E	A
Approach Delay		36.5		52.1			18.1		30.3
Approach LOS		D		D			B		C

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: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.92
 Intersection Signal Delay: 29.7
 Intersection Capacity Utilization 110.2%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service H

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



Queues
58: Humber Station Rd & Street Y

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	39	195	157	268	68	104	1003	170	270
v/c Ratio	0.30	0.55	0.88	0.73	0.21	0.15	0.85	0.92	0.22
Control Delay	37.2	36.3	78.7	46.4	13.1	6.8	19.3	68.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	36.3	78.7	46.4	13.1	6.8	19.3	68.4	6.4
Queue Length 50th (m)	5.9	29.0	27.0	44.6	2.0	6.3	120.7	24.5	17.0
Queue Length 95th (m)	15.6	50.3	#60.8	71.0	12.9	m12.7	#229.2	#37.4	27.3
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)	139	384	194	397	352	689	1186	185	1251
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.51	0.81	0.68	0.19	0.15	0.85	0.92	0.22

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 FT_Full Build-out_No Improvements 2041
58: Humber Station Rd & Street Y

Afternoon Peak Hour



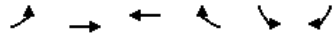
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	39	155	40	157	268	68	104	653	350	170	258	12
Future Volume (vph)	39	155	40	157	268	68	104	653	350	170	258	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	
Frb, ped/bikes	1.00	0.97		1.00	1.00	0.92	1.00	0.97		1.00	0.99	
Flpb, ped/bikes	0.96	1.00		0.92	1.00	1.00	0.92	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.95		1.00	0.99	
Fit Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1717	1775		1640	1883	1470	1644	1734		1789	1860	
Fit Permitted	0.37	1.00		0.53	1.00	1.00	0.59	1.00		0.15	1.00	
Satd. Flow (perm)	664	1775		920	1883	1470	1026	1734		275	1860	
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)	39	155	40	157	268	68	104	653	350	170	258	12
RTOR Reduction (vph)	0	10	0	0	0	44	0	20	0	0	2	0
Lane Group Flow (vph)	39	185	0	157	268	25	104	983	0	170	268	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)	17.5	17.5		17.5	17.5	17.5	60.5	60.5		60.5	60.5	
Effective Green, g (s)	17.5	17.5		17.5	17.5	17.5	60.5	60.5		60.5	60.5	
Actuated g/C Ratio	0.19	0.19		0.19	0.19	0.19	0.67	0.67		0.67	0.67	
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)	129	345		178	366	285	689	1165		184	1250	
v/s Ratio Prot		0.10			0.14			0.57			0.14	
v/s Ratio Perm	0.06			c0.17		0.02	0.10			c0.62		
v/c Ratio	0.30	0.53		0.88	0.73	0.09	0.15	0.84		0.92	0.21	
Uniform Delay, d1	31.0	32.6		35.2	34.0	29.7	5.4	11.2		12.8	5.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.06	0.96		1.00	1.00	
Incremental Delay, d2	1.3	1.6		36.3	7.4	0.1	0.5	7.5		48.9	0.4	
Delay (s)	32.3	34.2		71.5	41.4	29.8	6.1	18.2		61.7	6.0	
Level of Service	C	C		E	D	C	A	B		E	A	
Approach Delay (s)		33.9			49.4			17.1			27.5	
Approach LOS		C			D			B			C	

Intersection Summary

- HCM 2000 Control Delay 27.8 HCM 2000 Level of Service C
- HCM 2000 Volume to Capacity ratio 0.91
- Actuated Cycle Length (s) 90.0 Sum of lost time (s) 12.0
- Intersection Capacity Utilization 110.2% ICU Level of Service H
- Analysis Period (min) 15
- c Critical Lane Group

Lanes and Geometrics
62: Street Y & Street VV

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



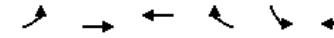
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.7	3.7	3.7
Grade (%)		0%	0%		0%	
Storage Length (m)	0.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	0.0				0.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.991	
Flt Protected					0.955	
Satd. Flow (prot)	0	1883	1859	0	1782	0
Flt Permitted					0.955	
Satd. Flow (perm)	0	1883	1859	0	1782	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 FT_Full Build-out_No Improvements 2041
62: Street Y & Street VV

Afternoon Peak Hour



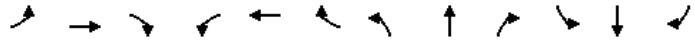
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Sign Control		Stop	Stop		Stop	
Traffic Volume (vph)	0	221	225	23	14	1
Future Volume (vph)	0	221	225	23	14	1
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	221	225	23	14	1
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total (vph)	221	248	15			
Volume Left (vph)	0	0	14			
Volume Right (vph)	0	23	1			
Hadj (s)	0.03	-0.02	0.18			
Departure Headway (s)	4.2	4.1	5.1			
Degree Utilization, x	0.26	0.28	0.02			
Capacity (veh/h)	840	859	645			
Control Delay (s)	8.7	8.8	8.2			
Approach Delay (s)	8.7	8.8	8.2			
Approach LOS	A	A	A			

Intersection Summary

Delay	8.7		
Level of Service	A		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lanes and Geometrics
64: Street JJ & Street Y

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	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			0.988			0.975			0.994	
Flt Protected		0.999			0.995			0.995			0.994	
Satd. Flow (prot)	0	1868	0	0	1852	0	0	1827	0	0	1861	0
Flt Permitted		0.999			0.995			0.995			0.994	
Satd. Flow (perm)	0	1868	0	0	1852	0	0	1827	0	0	1861	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 FT_Full Build-out_No Improvements 2041
64: Street JJ & Street Y

Afternoon Peak Hour



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	234	13	34	272	30	19	141	36	17	117	6
Future Volume (vph)	7	234	13	34	272	30	19	141	36	17	117	6
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	234	13	34	272	30	19	141	36	17	117	6


Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	254	336	196	140
Volume Left (vph)	7	34	19	17
Volume Right (vph)	13	30	36	6
Hadj (s)	0.01	0.00	-0.06	0.03
Departure Headway (s)	5.5	5.3	5.7	5.9
Degree Utilization, x	0.39	0.50	0.31	0.23
Capacity (veh/h)	610	637	559	532
Control Delay (s)	11.9	13.5	11.3	10.7
Approach Delay (s)	11.9	13.5	11.3	10.7
Approach LOS	B	B	B	B

Intersection Summary

Delay	12.2
Level of Service	B
Intersection Capacity Utilization	52.6%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
65: Street I & Street Y

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour




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		0.987			0.990			0.993			0.991	
Flt Protected		0.998			0.996			0.994			0.995	
Satd. Flow (prot)	0	1855	0	0	1857	0	0	1859	0	0	1857	0
Flt Permitted		0.998			0.996			0.994			0.995	
Satd. Flow (perm)	0	1855	0	0	1857	0	0	1859	0	0	1857	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 FT_Full Build-out_No Improvements 2041
65: Street I & Street Y

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	12	242	28	27	314	26	23	148	9	15	121	10
Future Volume (vph)	12	242	28	27	314	26	23	148	9	15	121	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)	12	242	28	27	314	26	23	148	9	15	121	10
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	282	367	180	146								
Volume Left (vph)	12	27	23	15								
Volume Right (vph)	28	26	9	10								
Hadj (s)	-0.02	0.01	0.03	0.01								
Departure Headway (s)	5.5	5.4	6.0	6.1								
Degree Utilization, x	0.43	0.55	0.30	0.25								
Capacity (veh/h)	608	633	527	513								
Control Delay (s)	12.6	14.8	11.6	11.1								
Approach Delay (s)	12.6	14.8	11.6	11.1								
Approach LOS	B	B	B	B								

Intersection Summary

Delay	13.0
Level of Service	B
Intersection Capacity Utilization	48.7%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
84: Street JJ & Street EE

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



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	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		0.919						0.989				
Flt Protected					0.976			0.998				
Satd. Flow (prot)	0	1731	0	0	1838	0	0	1859	0	0	1883	0
Flt Permitted					0.976			0.998				
Satd. Flow (perm)	0	1731	0	0	1838	0	0	1859	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 FT_Full Build-out_No Improvements 2041
84: Street JJ & Street EE

Afternoon Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	6	14	15	0	8	192	17	0	159	0
Future Volume (Veh/h)	0	4	6	14	15	0	8	192	17	0	159	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	4	6	14	15	0	8	192	17	0	159	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)								262				
pX, platoon unblocked												
vC, conflicting volume	433	484	259	484	476	250	209				259	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	433	484	259	484	476	250	209				259	
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	97	97	100	99				100	
cM capacity (veh/h)	463	439	714	415	444	754	1304				1250	

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	29	217	159
Volume Left	0	14	8	0
Volume Right	6	0	17	0
cSH	571	430	1304	1250
Volume to Capacity	0.02	0.07	0.01	0.00
Queue Length 95th (m)	0.4	1.7	0.1	0.0
Control Delay (s)	11.4	14.0	0.3	0.0
Lane LOS	B	B	A	
Approach Delay (s)	11.4	14.0	0.3	0.0
Approach LOS	B	B		

Intersection Summary

Average Delay	1.4
Intersection Capacity Utilization	36.1%
ICU Level of Service	A
Analysis Period (min)	15

Lanes and Geometrics
85: Street I & Street EE

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

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	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		0.897										
Flt Protected								0.996				
Satd. Flow (prot)	0	1689	0	0	1883	0	0	1876	0	0	1883	0
Flt Permitted								0.996				
Satd. Flow (perm)	0	1689	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 FT_Full Build-out_No Improvements 2041
85: Street I & Street EE

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	0	4	13	0	15	0	16	201	0	0	165	0
Future Volume (Veh/h)	0	4	13	0	15	0	16	201	0	0	165	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	4	13	0	15	0	16	201	0	0	165	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	506	498	265	513	498	301	215				251	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	506	498	265	513	498	301	215				251	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1				4.1	
iC, 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	97	100	99				100	
cM capacity (veh/h)	395	429	709	391	429	677	1297				1258	
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	15	217	165								
Volume Left	0	0	16	0								
Volume Right	13	0	0	0								
cSH	614	429	1297	1258								
Volume to Capacity	0.03	0.03	0.01	0.00								
Queue Length 95th (m)	0.7	0.9	0.3	0.0								
Control Delay (s)	11.0	13.7	0.7	0.0								
Lane LOS	B	B	A									
Approach Delay (s)	11.0	13.7	0.7	0.0								
Approach LOS	B	B										
Intersection Summary												
Average Delay				1.3								
Intersection Capacity Utilization			42.0%		ICU Level of Service					A		
Analysis Period (min)			15									

Lanes and Geometrics
88: Humber Station Rd & Street EE

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
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)					3	
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

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour

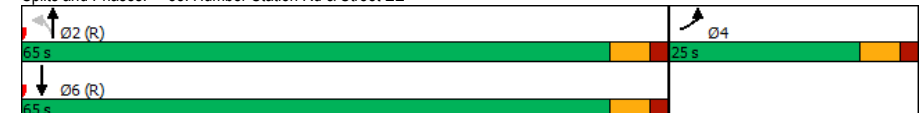


Lane Group	EBL	NBT	SBT
Lane Configurations	Y	↑	↑
Traffic Volume (vph)	4	1056	651
Future Volume (vph)	4	1056	651
Turn Type	Prot	NA	NA
Protected Phases	4	2	6
Permitted Phases			
Detector Phase	4	2	6
Switch Phase			
Minimum Initial (s)	5.0	5.0	5.0
Minimum Split (s)	25.0	25.0	25.0
Total Split (s)	25.0	65.0	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	0.65	0.41
Control Delay	29.8	9.7	4.6
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	9.7	4.6
LOS	C	A	A
Approach Delay	29.8	9.7	4.6
Approach LOS	C	A	A

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 90
 Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 7.8
 Intersection Capacity Utilization 69.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

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



Queues
88: Humber Station Rd & Street EE

FT_Full Build-out_No Improvements 2041
Afternoon Peak Hour



Lane Group	EBL	NBT	SBT
Lane Group Flow (vph)	4	1056	666
v/c Ratio	0.02	0.65	0.41
Control Delay	29.8	9.7	4.6
Queue Delay	0.0	0.0	0.0
Total Delay	29.8	9.7	4.6
Queue Length 50th (m)	0.7	0.0	0.0
Queue Length 95th (m)	3.3	#217.7	m88.9
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	0.65	0.41

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 FT_Full Build-out_No Improvements 2041
88: Humber Station Rd & Street EE

Afternoon Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↓	
Traffic Volume (vph)	4	0	0	1056	651	15
Future Volume (vph)	4	0	0	1056	651	15
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	
Frbp, ped/bikes	1.00			1.00	1.00	
Flpb, ped/bikes	1.00			1.00	1.00	
Frt	1.00			1.00	1.00	
Fit Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1789			1883	1872	
Fit Permitted	0.95			1.00	1.00	
Satd. Flow (perm)	1789			1883	1872	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	0	0	1056	651	15
RTOR Reduction (vph)	0	0	0	0	1	0
Lane Group Flow (vph)	4	0	0	1056	665	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	1464	
v/s Ratio Prot	c0.00			c0.56	0.36	
v/s Ratio Perm						
v/c Ratio	0.03			0.72	0.45	
Uniform Delay, d1	37.8			4.9	3.3	
Progression Factor	1.00			1.00	0.82	
Incremental Delay, d2	0.1			3.0	1.0	
Delay (s)	37.9			7.9	3.7	
Level of Service	D			A	A	
Approach Delay (s)	37.9			7.9	3.7	
Approach LOS	D			A	A	

Intersection Summary

HCM 2000 Control Delay	6.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
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 - Dec - 1h.j9

Path: G:\0 DEMASIMULATIONS\01 BA Group\7694-01 Bolton\Analysis\01_2024 June\ARCADY

Report generation date: 02/07/2024 12:12:56

»EXAM, AM

»EXPM, PM

»2031_FB_Ph1, AM

»2031_FB_Ph1, PM

»2031_FT_Ph1, AM

»2301_FT_Ph1, PM

»2031_FB_Ph2, AM

»2031_FB_Ph2, PM

»2031_FT_Ph2, AM

»2301_FT_Ph2, PM

»2041_FB Full Build-out, AM

»2041_FB Full Build-out, PM

»2041_FT Full Build-out, AM

»2041_FT Full Build-out, PM

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] - EXAM																						
Arm 1	0.3	1.0	3.40		A	3.52	A	%														
Arm 2	0.3	2.0	3.92		A																	
Arm 3	0.4	1.5	3.31		A																	
[Lane Simulation] - EXPM																						
Arm 1									0.5	1.9	3.39		A	4.09	A	%						
Arm 2									1.0	3.0	4.74		A									
Arm 3									0.2	0.7	3.26		A						[]			
[Lane Simulation] - 2031_FB_Ph1																						
Arm 1	0.5	1.6	3.47		A	3.59	A	%	0.6	2.0	3.46		A	4.26	A	%						
Arm 2	0.3	2.0	4.03		A							0.8	2.6				5.03		A			[]
Arm 3	0.3	2.0	3.36		A							0.2	0.7				3.39		A			[]
[Lane Simulation] - 2031_FT_Ph1																						
Arm 1	0.7	1.9	3.70		A	3.81	A	%														
Arm 2	0.6	1.8	4.40		A																	
Arm 3	0.4	2.0	3.46		A																	
[Lane Simulation] - 2301_FT_Ph1																						
Arm 1									0.6	2.0	3.61		A	5.40	A	%						
Arm 2									1.8	5.7	7.01		A									
Arm 3									0.2	0.9	3.71		A						[]			
[Lane Simulation] - 2031_FB_Ph2																						
Arm 1	0.6	1.7	4.05		A	4.27	A	%	0.5	2.8	3.96		A	4.93	A	%						
Arm 2	0.8	2.4	4.95		A							1.6	4.6				5.89		A			
Arm 3	0.6	1.8	3.77		A							0.3	1.3				4.07		A			[]
[Lane Simulation] - 2031_FT_Ph2																						
Arm 1	1.0	3.1	4.91		A	4.90	A	%														
Arm 2	0.7	2.6	5.35		A																	
Arm 3	0.9	3.6	4.53		A																	
[Lane Simulation] - 2301_FT_Ph2																						
Arm 1									1.0	3.1	4.36		A	7.05	A	%						
Arm 2									3.8	11.6	9.37		A									
Arm 3									0.7	2.3	4.68		A						[]			
[Lane Simulation] - 2041_FB Full Build-out																						
Arm 1	0.4	1.0	3.63		A	3.83	A	%	0.6	1.6	3.84		A	4.48	A	%						
Arm 2	0.8	2.4	4.24		A							1.4	3.6				5.38		A			
Arm 3	0.5	1.6	3.57		A							0.2	0.8				3.44		A			[]
[Lane Simulation] - 2041_FT Full Build-out																						
Arm 1	0.8	1.9	4.39		A	4.32	A	%	0.9	2.3	4.26		A	6.87	A	%						
Arm 2	0.9	3.2	4.67		A							3.8	9.5				9.30		A			
Arm 3	0.9	2.7	3.89		A							0.8	2.5				4.02		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	BACTORDMA
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	✓	1203295406	101	2.60

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	EXAM	AM	EXAM	FLAT	08:00	09:00	60	✓	✓
D2	EXPM	PM	EXPM	FLAT	16:00	17:00	60	✓	✓
D3	2031_FB_Ph1	AM	FB_Ph1	FLAT	08:00	09:00	60	✓	✓
D4	2031_FB_Ph1	PM	FB_Ph1	FLAT	16:00	17:00	60	✓	✓
D5	2031_FT_Ph1	AM	FT_Ph1	FLAT	08:00	09:00	60	✓	✓
D6	2301_FT_Ph1	PM	FT_Ph1	FLAT	16:00	17:00	60	✓	✓
D7	2031_FB_Ph2	AM	FB_Ph2	FLAT	08:00	09:00	60	✓	✓
D8	2031_FB_Ph2	PM	FB_Ph2	FLAT	16:00	17:00	60	✓	✓
D9	2031_FT_Ph2	AM	FT_Ph2	FLAT	08:00	09:00	60	✓	✓
D10	2301_FT_Ph2	PM	FT_Ph2	FLAT	16:00	17:00	60	✓	✓
D11	2041_FB Full Build-out	AM	FB_FBO	FLAT	08:00	09:00	60	✓	✓
D12	2041_FB Full Build-out	PM	FB_FBO	FLAT	16:00	17:00	60	✓	✓
D13	2041_FT Full Build-out	AM	FT_FBO	FLAT	08:00	09:00	60	✓	✓
D14	2041_FT Full Build-out	PM	FT_FBO	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

EXAM, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	3.52	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

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	EXAM	AM	EXAM	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	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	3.40	0.3	1.0	A	410	410
2	3.92	0.3	2.0	A	330	330
3	3.31	0.4	1.5	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	410	410	224	411	444	0.0	0.3	3.401	A
2	330	330	119	331	516	0.0	0.3	3.917	A
3	409	409	259	409	191	0.0	0.4	3.313	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.31	0.00	0.00	0.72	0.95
2	0.33	0.00	0.00	0.78	2.00
3	0.45	0.00	0.00	0.96	1.49

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	161	1161	0.138	161	0.0	0.1	3.256	A
			2	2,3	249	1161	0.215	250	0.0	0.2	3.495	A
	Exit	1	1		444			444	0.0	0.0	0.000	A
2	Entry	1	1	3	43	1138	0.037	43	0.0	0.0	3.161	A
			2	1,3	287	1138	0.253	288	0.0	0.3	4.038	A
	Exit	1	1		516			516	0.0	0.0	0.000	A
3	Entry	1	1	1,2	281	1226	0.229	281	0.0	0.3	3.474	A
			2	2	128	1226	0.104	128	0.0	0.1	2.962	A
	Exit	1	1		191			191	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	0.11	0.00	0.00	-0.01	0.55
			2	0.20	0.00	0.00	0.49	0.78
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.04	0.00	0.00	0.00	0.00
			2	0.29	0.00	0.00	0.69	0.91
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.33	0.00	0.00	0.77	0.99
			2	0.12	0.00	0.00	1.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

EXPM, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	4.09	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	EXPM	PM	EXPM	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	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	3.39	0.5	1.9	A	483	483
2	4.74	1.0	3.0	A	718	718
3	3.26	0.2	0.7	A	161	161

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	483	483	69	484	499	0.0	0.5	3.394	A
2	718	718	174	716	378	0.0	1.0	4.742	A
3	161	161	407	161	483	0.0	0.2	3.258	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.47	0.00	0.00	1.32	1.88
2	0.99	0.00	0.15	2.27	2.98
3	0.16	0.00	0.00	0.33	0.75

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	172	1218	0.141	172	0.0	0.1	3.150	A
			2	2,3	311	1218	0.256	312	0.0	0.3	3.530	A
	Exit	1	1		499			499	0.0	0.0	0.000	A
2	Entry	1	1	3	207	1118	0.185	206	0.0	0.2	3.594	A
			2	1,3	510	1118	0.457	510	0.0	0.8	5.200	A
	Exit	1	1		378			378	0.0	0.0	0.000	A
3	Entry	1	1	1,2	123	1169	0.105	123	0.0	0.1	3.314	A
			2	2	38	1169	0.032	38	0.0	0.0	3.085	A
	Exit	1	1		483			483	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	0.13	0.00	0.00	0.17	0.63
			2	0.34	0.00	0.00	0.88	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.23	0.00	0.00	0.55	0.83
			2	0.76	0.00	0.00	1.76	2.49
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.12	0.00	0.00	1.00	1.00
			2	0.04	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FB_Ph1, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	3.59	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
D3	2031_FB_Ph1	AM	FB_Ph1	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	✓	457	100.000
2		FLAT	✓	345	100.000
3		FLAT	✓	444	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	330	127
	2	267	0	78
	3	197	247	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	3.47	0.5	1.6	A	465	465
2	4.03	0.3	2.0	A	343	343
3	3.36	0.3	2.0	A	445	445

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	465	465	239	464	473	0.0	0.5	3.473	A
2	343	343	129	343	574	0.0	0.3	4.031	A
3	445	445	267	445	205	0.0	0.3	3.364	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.47	0.00	0.00	0.96	1.56
2	0.31	0.00	0.00	0.76	2.00
3	0.34	0.00	0.00	0.79	2.00

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	182	1155	0.157	181	0.0	0.2	3.266	A
			2	2,3	283	1155	0.245	283	0.0	0.3	3.608	A
	Exit	1	1		473			473	0.0	0.0	0.000	A
2	Entry	1	1	3	48	1134	0.042	48	0.0	0.0	3.227	A
			2	1,3	295	1134	0.260	295	0.0	0.3	4.155	A
	Exit	1	1		574			574	0.0	0.0	0.000	A
3	Entry	1	1	1,2	311	1223	0.254	311	0.0	0.3	3.494	A
			2	2	134	1223	0.110	135	0.0	0.1	3.083	A
	Exit	1	1		205			205	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	0.20	0.00	0.00	0.49	0.78
			2	0.27	0.00	0.00	0.66	0.90
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.02	0.00	0.00	0.00	0.00
			2	0.29	0.00	0.00	0.73	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.26	0.00	0.00	0.66	0.94
			2	0.08	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FB_Ph1, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	4.26	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
D4	2031_FB_Ph1	PM	FB_Ph1	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	✓	537	100.000
2		FLAT	✓	797	100.000
3		FLAT	✓	181	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	345	192
	2	454	0	343
	3	100	81	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	3.46	0.6	2.0	A	545	545
2	5.03	0.8	2.6	A	781	781
3	3.39	0.2	0.7	A	182	182

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	545	545	80	544	548	0.0	0.6	3.459	A
2	781	781	197	781	427	0.0	0.8	5.026	A
3	182	182	446	182	532	0.0	0.2	3.393	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.61	0.00	0.00	1.15	1.98
2	0.78	0.00	0.00	1.90	2.56
3	0.17	0.00	0.00	0.33	0.75

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	197	1214	0.162	197	0.0	0.2	3.181	A
			2	2,3	348	1214	0.287	347	0.0	0.4	3.619	A
	Exit	1	1		548			548	0.0	0.0	0.000	A
2	Entry	1	1	3	225	1110	0.203	226	0.0	0.2	3.687	A
			2	1,3	555	1110	0.500	556	0.0	0.6	5.568	A
	Exit	1	1		427			427	0.0	0.0	0.000	A
3	Entry	1	1	1,2	138	1154	0.119	137	0.0	0.1	3.467	A
			2	2	44	1154	0.038	44	0.0	0.0	3.155	A
	Exit	1	1		532			532	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	0.45	0.84
			2	0.43	0.00	0.00	0.89	1.33
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.19	0.00	0.00	0.46	0.76
			2	0.59	0.00	0.00	1.41	2.24
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.14	0.00	0.00	0.19	0.70
			2	0.03	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FT_Ph1, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	3.81	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
D5	2031_FT_Ph1	AM	FT_Ph1	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	✓	681	100.000
2		FLAT	✓	406	100.000
3		FLAT	✓	456	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	517	164
	2	328	0	78
	3	209	247	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	3.70	0.7	1.9	A	678	678
2	4.40	0.6	1.8	A	398	398
3	3.46	0.4	2.0	A	449	449

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	678	678	232	678	535	0.0	0.7	3.699	A
2	398	398	165	398	745	0.0	0.6	4.398	A
3	449	449	318	449	246	0.0	0.4	3.462	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.70	0.00	0.06	1.24	1.87
2	0.55	0.00	0.00	1.29	1.80
3	0.45	0.00	0.00	0.96	2.00

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	280	1158	0.242	280	0.0	0.2	3.515	A
			2	2,3	399	1158	0.344	398	0.0	0.5	3.833	A
	Exit	1	1		535			535	0.0	0.0	0.000	A
2	Entry	1	1	3	51	1121	0.045	51	0.0	0.0	3.277	A
			2	1,3	348	1121	0.310	347	0.0	0.5	4.554	A
	Exit	1	1		745			745	0.0	0.0	0.000	A
3	Entry	1	1	1,2	315	1203	0.262	316	0.0	0.4	3.623	A
			2	2	133	1203	0.111	134	0.0	0.1	3.101	A
	Exit	1	1		246			246	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	0.25	0.00	0.00	0.61	0.85
			2	0.46	0.00	0.00	0.93	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.03	0.00	0.00	0.00	0.00
			2	0.52	0.00	0.00	1.26	1.72
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.36	0.00	0.00	0.80	2.00
			2	0.09	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2301_FT_Ph1, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	5.40	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	2301_FT_Ph1	PM	FT_Ph1	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	✓	678	100.000
2		FLAT	✓	997	100.000
3		FLAT	✓	220	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	462	216
	2	651	0	346
	3	139	81	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	3.61	0.6	2.0	A	682	682
2	7.01	1.8	5.7	A	997	997
3	3.71	0.2	0.9	A	223	223

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	682	682	81	682	792	0.0	0.6	3.609	A
2	997	997	222	998	541	0.0	1.8	7.005	A
3	223	223	651	222	570	0.0	0.2	3.713	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.60	0.00	0.00	2.00	2.00
2	1.82	0.00	0.67	3.95	5.74
3	0.25	0.00	0.00	0.62	0.93

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	257	1214	0.211	257	0.0	0.2	3.317	A
			2	2,3	425	1214	0.350	425	0.0	0.4	3.795	A
	Exit	1	1		792			792	0.0	0.0	0.000	A
2	Entry	1	1	3	266	1101	0.242	267	0.0	0.2	4.004	A
			2	1,3	731	1101	0.664	732	0.0	1.6	8.076	A
	Exit	1	1		541			541	0.0	0.0	0.000	A
3	Entry	1	1	1,2	179	1076	0.166	179	0.0	0.2	3.820	A
			2	2	44	1076	0.041	44	0.0	0.0	3.301	A
	Exit	1	1		570			570	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	1.00	1.00
			2	0.42	0.00	0.00	0.86	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.22	0.00	0.00	0.55	0.83
			2	1.60	0.00	0.48	3.77	4.74
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.22	0.00	0.00	0.53	0.86
			2	0.03	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FB_Ph2, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	4.27	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	2031_FB_Ph2	AM	FB_Ph2	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	✓	457	100.000
2		FLAT	✓	468	100.000
3		FLAT	✓	478	100.000

Origin-Destination Data

Demand (Veh/hr)

	To		
	1	2	3
From	1	0	330
	2	298	0
	3	197	281

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	4.05	0.6	1.7	A	450	450
2	4.95	0.8	2.4	A	469	469
3	3.77	0.6	1.8	A	476	476

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	451	451	281	452	492	0.0	0.6	4.046	A
2	469	469	124	468	609	0.0	0.7	4.954	A
3	476	476	298	476	293	0.0	0.6	3.767	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.58	0.00	0.00	1.42	1.71
2	0.76	0.00	0.00	2.01	2.45
3	0.62	0.00	0.00	1.50	1.81

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	180	1023	0.176	181	0.0	0.2	3.851	A
			2	2,3	271	1039	0.260	271	0.0	0.4	4.174	A
	Exit	1	1		492			492	0.0	0.0	0.000	A
2	Entry	1	1	3	102	902	0.113	102	0.0	0.1	4.168	A
			2	1,3	366	1020	0.359	366	0.0	0.6	5.181	A
	Exit	1	1		609			609	0.0	0.0	0.000	A
3	Entry	1	1	1,2	314	1146	0.274	313	0.0	0.4	3.943	A
			2	2	162	1095	0.148	163	0.0	0.2	3.421	A
	Exit	1	1		293			293	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	0.19	0.00	0.00	0.44	0.83
			2	0.40	0.00	0.00	1.16	1.58
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.15	0.00	0.00	0.34	1.59
			2	0.61	0.00	0.00	1.61	2.18
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.44	0.00	0.00	1.06	1.66
			2	0.18	0.00	0.00	0.45	0.83
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FB_Ph2, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	4.93	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	2031_FB_Ph2	PM	FB_Ph2	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	✓	537	100.000
2		FLAT	✓	831	100.000
3		FLAT	✓	298	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	345	192
	2	462	0	369
	3	100	198	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	3.96	0.5	2.8	A	542	542
2	5.89	1.6	4.6	A	823	823
3	4.07	0.3	1.3	A	295	295

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	542	542	196	545	563	0.0	0.5	3.965	A
2	824	824	190	822	552	0.0	1.5	5.894	A
3	295	295	462	297	550	0.0	0.3	4.075	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.48	0.00	0.00	1.09	2.83
2	1.59	0.00	0.70	3.71	4.64
3	0.31	0.00	0.00	0.80	1.34

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	203	1102	0.184	205	0.0	0.1	3.547	A
			2	2,3	339	1084	0.313	341	0.0	0.3	4.206	A
	Exit	1	1		563			563	0.0	0.0	0.000	A
2	Entry	1	1	3	253	1049	0.242	252	0.0	0.4	4.071	A
			2	1,3	570	1027	0.555	570	0.0	1.2	6.711	A
	Exit	1	1		552			552	0.0	0.0	0.000	A
3	Entry	1	1	1,2	191	994	0.192	191	0.0	0.2	4.104	A
			2	2	105	925	0.113	106	0.0	0.1	4.022	A
	Exit	1	1		550			550	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	0.14	0.00	0.00	0.25	0.69
			2	0.33	0.00	0.00	0.79	1.30
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.37	0.00	0.00	0.90	1.89
			2	1.22	0.00	0.34	2.95	3.88
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.22	0.00	0.00	0.56	0.87
			2	0.10	0.00	0.00	0.00	0.54
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FT_Ph2, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	4.90	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	2031_FT_Ph2	AM	FT_Ph2	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	✓	664	100.000
2		FLAT	✓	598	100.000
3		FLAT	✓	680	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	536	128
	2	363	0	235
	3	197	483	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	12	6
	2	8	0	25
	3	4	22	9

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	4.91	1.0	3.1	A	675	675
2	5.35	0.7	2.6	A	586	586
3	4.53	0.9	3.6	A	696	696

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	676	676	494	674	559	0.0	1.0	4.909	A
2	586	586	132	587	1036	0.0	0.7	5.354	A
3	697	697	356	696	362	0.0	0.8	4.531	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	1.00	0.00	0.29	2.46	3.07
2	0.75	0.00	0.00	1.64	2.61
3	0.92	0.00	0.02	1.97	3.63

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	293	901	0.325	293	0.0	0.4	4.682	A
			2	2,3	383	930	0.411	381	0.0	0.6	5.087	A
	Exit	1	1		559			559	0.0	0.0	0.000	A
2	Entry	1	1	3	150	914	0.164	150	0.0	0.1	4.335	A
			2	1,3	437	1020	0.429	437	0.0	0.6	5.703	A
	Exit	1	1		1036			1036	0.0	0.0	0.000	A
3	Entry	1	1	1,2	415	1041	0.399	416	0.0	0.5	4.708	A
			2	2	281	966	0.292	281	0.0	0.3	4.267	A
	Exit	1	1		362			362	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	0.37	0.00	0.00	0.81	1.25
			2	0.65	0.00	0.00	1.46	2.73
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.15	0.00	0.00	0.33	1.62
			2	0.60	0.00	0.00	0.87	2.69
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.53	0.00	0.00	1.39	1.75
			2	0.40	0.00	0.00	1.18	1.63
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2301_FT_Ph2, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	7.05	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	2301_FT_Ph2	PM	FT_Ph2	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	✓	667	100.000
2		FLAT	✓	1263	100.000
3		FLAT	✓	426	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	474	193
	2	678	0	585
	3	100	326	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	4.36	1.0	3.1	A	678	678
2	9.37	3.8	11.6	A	1263	1263
3	4.68	0.7	2.3	A	425	425

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	678	678	324	676	779	0.0	1.0	4.357	A
2	1264	1264	198	1263	802	0.0	3.7	9.366	A
3	425	425	676	426	785	0.0	0.7	4.681	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	1.03	0.00	0.31	2.15	3.13
2	3.79	0.00	2.49	8.32	11.59
3	0.71	0.00	0.00	1.58	2.32

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	276	1032	0.267	276	0.0	0.3	3.961	A
			2	2,3	402	1033	0.390	400	0.0	0.7	4.627	A
	Exit	1	1		779			779	0.0	0.0	0.000	A
2	Entry	1	1	3	462	1040	0.444	463	0.0	0.7	5.526	A
			2	1,3	803	1025	0.782	800	0.0	3.0	11.536	B
	Exit	1	1		802			802	0.0	0.0	0.000	A
3	Entry	1	1	1,2	252	898	0.280	252	0.0	0.4	4.794	A
			2	2	174	851	0.204	174	0.0	0.3	4.519	A
	Exit	1	1		785			785	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	0.31	0.00	0.00	0.72	0.93
			2	0.73	0.00	0.00	1.62	2.06
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.71	0.00	0.00	1.72	2.44
			2	3.07	0.00	1.76	6.91	8.12
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.40	0.00	0.00	1.00	1.52
			2	0.30	0.00	0.00	0.99	1.37
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FB Full Build-out, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	3.83	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
D11	2041_FB Full Build-out	AM	FB_FBO	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	✓	598	100.000
3		FLAT	✓	530	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	365	140
	2	339	0	259
	3	206	324	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	0.4	1.0	A	508	508
2	4.24	0.8	2.4	A	597	597
3	3.57	0.5	1.6	A	531	531

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	508	508	324	509	545	0.0	0.4	3.630	A
2	597	597	139	596	695	0.0	0.8	4.242	A
3	531	531	338	531	397	0.0	0.5	3.566	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.38	0.00	0.00	0.80	0.98
2	0.83	0.00	0.02	1.87	2.42
3	0.51	0.00	0.00	0.99	1.62

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	1124	0.180	203	0.0	0.1	3.437	A
			2	2,3	306	1124	0.272	306	0.0	0.3	3.758	A
	Exit	1	1		545			545	0.0	0.0	0.000	A
2	Entry	1	1	3	161	1131	0.142	161	0.0	0.2	3.413	A
			2	1,3	436	1131	0.386	435	0.0	0.7	4.551	A
	Exit	1	1		695			695	0.0	0.0	0.000	A
3	Entry	1	1	1,2	347	1196	0.290	348	0.0	0.3	3.760	A
			2	2	184	1196	0.154	183	0.0	0.2	3.206	A
	Exit	1	1		397			397	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	0.12	0.00	0.00	-0.01	0.62
			2	0.26	0.00	0.00	0.63	0.89
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.16	0.00	0.00	0.35	0.71
			2	0.67	0.00	0.00	1.58	3.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.29	0.00	0.00	0.69	0.91
			2	0.23	0.00	0.00	0.57	0.81
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FB Full Build-out, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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
D12	2041_FB Full Build-out	PM	FB_FBO	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	✓	896	100.000
3		FLAT	✓	413	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	381	213
	2	491	0	405
	3	104	309	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	3.84	0.6	1.6	A	599	599
2	5.38	1.4	3.6	A	896	896
3	3.44	0.2	0.8	A	406	406

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	599	599	312	601	596	0.0	0.6	3.836	A
2	896	896	211	894	702	0.0	1.4	5.379	A
3	406	406	500	408	605	0.0	0.2	3.442	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.58	0.00	0.00	0.94	1.59
2	1.44	0.00	0.60	2.99	3.62
3	0.23	0.00	0.00	0.57	0.84

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	226	1128	0.200	226	0.0	0.2	3.484	A
			2	2,3	373	1128	0.331	374	0.0	0.3	4.043	A
	Exit	1	1		596			596	0.0	0.0	0.000	A
2	Entry	1	1	3	271	1105	0.245	272	0.0	0.3	3.925	A
			2	1,3	624	1105	0.565	622	0.0	1.2	6.037	A
	Exit	1	1		702			702	0.0	0.0	0.000	A
3	Entry	1	1	1,2	242	1133	0.214	243	0.0	0.1	3.566	A
			2	2	164	1133	0.145	164	0.0	0.1	3.258	A
	Exit	1	1		605			605	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	0.24	0.00	0.00	0.61	0.89
			2	0.35	0.00	0.00	0.73	0.90
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.28	0.00	0.00	0.70	0.95
			2	1.16	0.00	0.27	2.63	3.24
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.13	0.00	0.00	1.00	1.00
			2	0.10	0.00	0.00	1.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FT Full Build-out, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	4.32	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
D13	2041_FT Full Build-out	AM	FT_FBO	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	✓	761	100.000
2		FLAT	✓	756	100.000
3		FLAT	✓	787	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	620	141
	2	418	0	338
	3	206	581	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	4.39	0.8	1.9	A	775	775
2	4.67	0.9	3.2	A	757	757
3	3.89	0.9	2.7	A	778	778

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	775	775	577	778	621	0.0	0.8	4.393	A
2	757	757	147	760	1208	0.0	0.9	4.672	A
3	778	778	422	776	486	0.0	0.9	3.895	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.84	0.00	0.14	1.66	1.94
2	0.94	0.00	0.05	2.41	3.19
3	0.90	0.00	0.02	2.11	2.74

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	349	1031	0.339	351	0.0	0.4	4.150	A
			2	2,3	426	1031	0.413	427	0.0	0.5	4.590	A
	Exit	1	1		621			621	0.0	0.0	0.000	A
2	Entry	1	1	3	217	1128	0.192	218	0.0	0.1	3.571	A
			2	1,3	540	1128	0.479	542	0.0	0.8	5.132	A
	Exit	1	1		1208			1208	0.0	0.0	0.000	A
3	Entry	1	1	1,2	459	1163	0.395	457	0.0	0.6	4.109	A
			2	2	319	1163	0.274	319	0.0	0.3	3.595	A
	Exit	1	1		486			486	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	0.38	0.00	0.00	0.78	0.94
			2	0.47	0.00	0.00	0.96	1.56
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.14	0.00	0.00	1.00	1.00
			2	0.80	0.00	0.00	2.10	2.66
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.59	0.00	0.00	1.39	1.90
			2	0.31	0.00	0.00	0.72	0.95
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FT Full Build-out, 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	Demand Sets	D1 - EXAM, AM	Demand Set 13: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct?
Warning	Demand Sets	D2 - EXPM, PM	Demand Set 14: Scenario Name includes Time Period Name ('PM'). Are you sure this is correct?
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	6.87	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
D14	2041_FT Full Build-out	PM	FT_FBO	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	✓	758	100.000
2		FLAT	✓	1440	100.000
3		FLAT	✓	570	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	545	213
	2	763	0	677
	3	104	466	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	4.26	0.9	2.3	A	739	739
2	9.30	3.8	9.5	A	1462	1462
3	4.02	0.8	2.5	A	569	569

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	739	739	460	739	867	0.0	0.9	4.260	A
2	1462	1462	216	1465	983	0.0	3.8	9.296	A
3	569	569	759	567	922	0.0	0.8	4.019	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.85	0.00	0.12	1.66	2.32
2	3.78	0.00	2.81	7.38	9.48
3	0.83	0.00	0.00	1.93	2.49

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	299	1074	0.279	298	0.0	0.4	3.898	A
			2	2,3	440	1074	0.410	441	0.0	0.5	4.514	A
	Exit	1	1		867			867	0.0	0.0	0.000	A
2	Entry	1	1	3	558	1103	0.506	559	0.0	0.8	5.657	A
			2	1,3	904	1103	0.820	906	0.0	3.0	11.461	B
	Exit	1	1		983			983	0.0	0.0	0.000	A
3	Entry	1	1	1,2	324	1034	0.313	323	0.0	0.4	4.172	A
			2	2	246	1034	0.238	244	0.0	0.4	3.825	A
	Exit	1	1		922			922	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	0.40	0.00	0.00	0.80	0.97
			2	0.46	0.00	0.00	0.87	1.19
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.76	0.00	0.00	1.78	2.39
			2	3.02	0.00	1.92	5.97	7.98
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.44	0.00	0.00	0.96	1.49
			2	0.40	0.00	0.00	0.85	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.0.1.4646 [] © Copyright TRL Limited, 2024
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk
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Filename: Bolton GO Access - 1h.j9
Path: G:\0 DEMASIMULATIONS\01 BA Group\7694-01 Bolton\Analysis\01_2024 June\ARCADY
Report generation date: 27/06/2024 13:33:48

- »2031_FBPh2, AM
- »2031_FBPh2, PM
- »2031_FTPH2, AM
- »2031_FTPH2, PM
- »2041_FB_Full Build-out, AM
- »2041_FB_Full Build-out, PM
- »2041_FT_Full Build-out, AM
- »2041_FT_Full Build-out, PM

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] - 2031_FBPh2																
Arm 1	0.1	0.4	3.95		A	3.82	A	%	0.2	1.1	3.63		A	3.57	A	%
Arm 2	0.4	1.6	4.01		A				0.6	1.7	3.64		A			
Arm 3	0.6	2.2	3.69		A				0.1	0.5	3.34		A			
[Lane Simulation] - 2031_FTPH2																
Arm 1	0.3	1.4	3.99		A	3.47	A	%	0.2	0.9	3.67		A	3.73	A	%
Arm 2	0.4	1.5	3.48		A				1.0	2.7	3.99		A			
Arm 3	0.3	2.0	3.09		A				0.3	0.9	3.08		A			
[Lane Simulation] - 2041_FB_Full Build-out																
Arm 1	0.1	0.6	3.46		A	3.29	A	%	0.3	1.0	3.65		A	3.41	A	%
Arm 2	0.5	1.7	3.51		A				0.6	1.8	3.51		A			
Arm 3	0.4	1.4	3.10		A				0.2	0.7	2.77		A			
[Lane Simulation] - 2041_FT_Full Build-out																
Arm 1	0.5	1.7	4.49		A	3.84	A	%	0.6	2.5	4.30		A	4.29	A	%
Arm 2	0.4	1.6	3.91		A				1.2	3.5	4.62		A			
Arm 3	0.6	1.7	3.26		A				0.3	1.0	3.33		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.

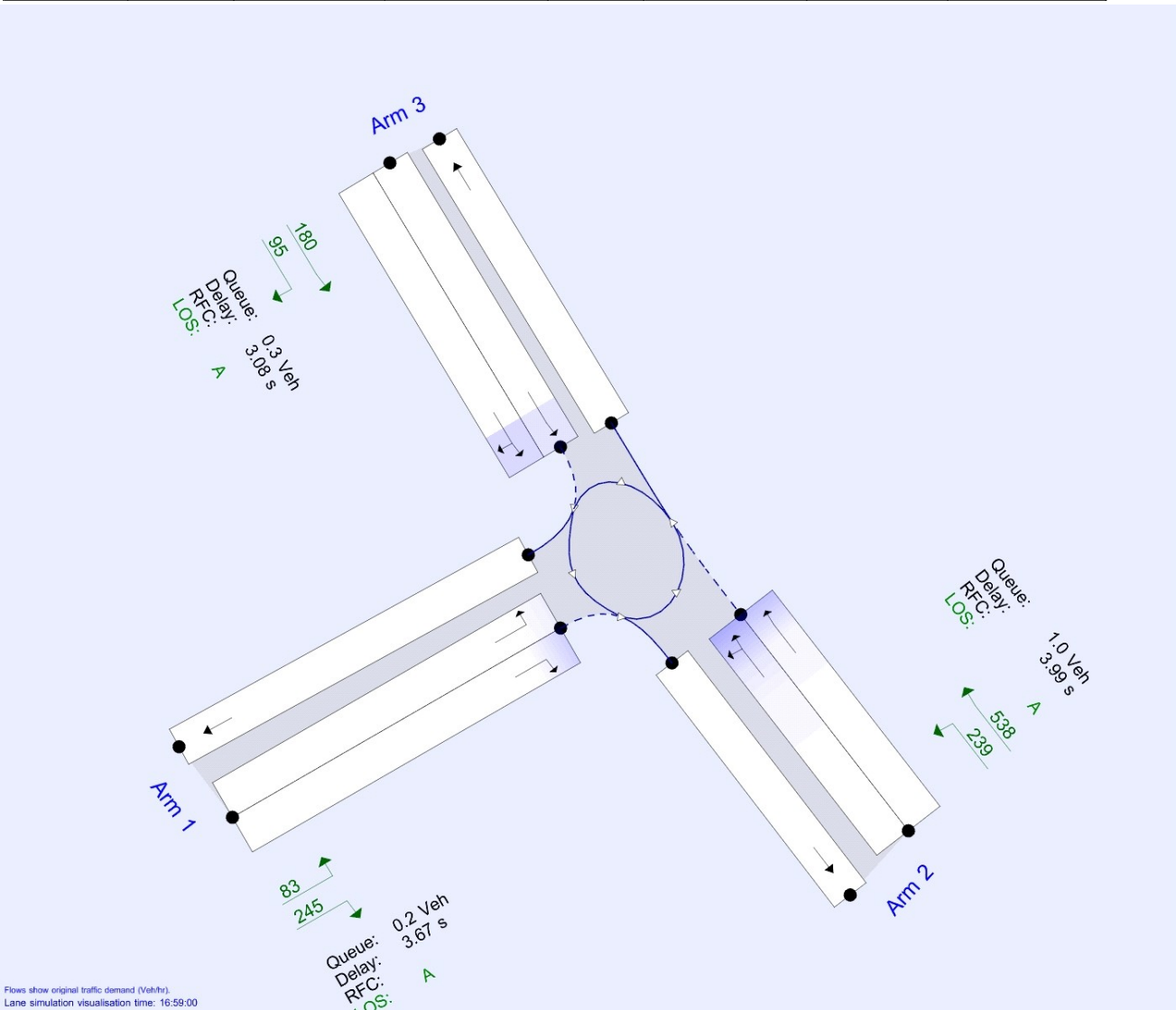
File summary

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	✓	1174272367	101	1.70

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D1	2031_FBPh2	AM	FLAT	08:00	09:00	60	✓	✓
D2	2031_FBPh2	PM	FLAT	16:00	17:00	60	✓	✓
D3	2031_FTPH2	AM	FLAT	08:00	09:00	60	✓	✓
D4	2031_FTPH2	PM	FLAT	16:00	17:00	60	✓	✓
D5	2041_FB_Full Build-out	AM	FLAT	08:00	09:00	60	✓	✓
D6	2041_FB_Full Build-out	PM	FLAT	16:00	17:00	60	✓	✓
D7	2041_FT_Full Build-out	AM	FLAT	08:00	09:00	60	✓	✓
D8	2041_FT_Full Build-out	PM	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

2031_FBPh2, 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	3.82	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

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	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D1	2031_FBPh2	AM	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	✓	43	100.000
2		FLAT	✓	297	100.000
3		FLAT	✓	477	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	34	9
	2	92	0	205
	3	33	444	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	12	6
	2	8	0	25
	3	4	22	9

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	3.95	0.1	0.4	A	43	43
2	4.01	0.4	1.6	A	289	289
3	3.69	0.6	2.2	A	478	478

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	43	43	443	43	125	0.0	0.1	3.954	A
2	289	289	8	290	477	0.0	0.3	4.011	A
3	477	477	91	477	206	0.0	0.5	3.694	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.08	0.00	0.00	0.00	0.39
2	0.36	0.00	0.00	1.04	1.57
3	0.62	0.00	0.00	1.50	2.22

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	34	953	0.036	34	0.0	0.1	4.041	A
			2	3	8	1017	0.008	8	0.0	0.0	3.633	A
	Exit	1	1		125			125	0.0	0.0	0.000	A
2	Entry	1	1	3	105	942	0.111	105	0.0	0.1	3.997	A
			2	1,3	184	1018	0.181	184	0.0	0.2	4.019	A
	Exit	1	1		477			477	0.0	0.0	0.000	A
3	Entry	1	1	1,2	254	1093	0.232	253	0.0	0.3	3.731	A
			2	2	223	1056	0.211	223	0.0	0.2	3.654	A
	Exit	1	1		206			206	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	0.06	0.00	0.00	0.00	0.17
			2	0.02	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	0.09	0.00	0.00	0.00	0.39
			2	0.27	0.00	0.00	0.79	1.35
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.34	0.00	0.00	1.10	1.43
			2	0.28	0.00	0.00	1.64	1.64
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FBPh2, 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	3.57	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D2	2031_FBPh2	PM	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	✓	148	100.000
2		FLAT	✓	561	100.000
3		FLAT	✓	188	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	117	31
	2	23	0	538
	3	8	180	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	3.63	0.2	1.1	A	153	153
2	3.64	0.6	1.7	A	557	557
3	3.34	0.1	0.5	A	190	190

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	153	153	184	152	30	0.0	0.2	3.631	A
2	557	557	32	559	303	0.0	0.6	3.645	A
3	190	190	23	191	569	0.0	0.1	3.339	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.22	0.00	0.00	0.59	1.12
2	0.60	0.00	0.00	0.93	1.72
3	0.09	0.00	0.00	0.00	0.47

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	120	1096	0.110	119	0.0	0.2	3.675	A
			2	3	33	1067	0.030	32	0.0	0.1	3.462	A
	Exit	1	1		30			30	0.0	0.0	0.000	A
2	Entry	1	1	3	267	1099	0.242	268	0.0	0.3	3.633	A
			2	1,3	290	1101	0.264	291	0.0	0.3	3.656	A
	Exit	1	1		303			303	0.0	0.0	0.000	A
3	Entry	1	1	1,2	96	1104	0.088	97	0.0	0.0	3.324	A
			2	2	93	1090	0.085	94	0.0	0.0	3.355	A
	Exit	1	1		569			569	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	0.17	0.00	0.00	0.37	0.84
			2	0.05	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	0.27	0.00	0.00	0.61	0.82
			2	0.33	0.00	0.00	0.80	1.25
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.06	0.00	0.00	0.00	-0.01
			2	0.03	0.00	0.00	0.00	0.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FTPH2, 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	3.47	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D3	2031_FTPH2	AM	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	✓	326	100.000
2		FLAT	✓	363	100.000
3		FLAT	✓	503	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	236	90
	2	158	0	205
	3	59	444	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	3.99	0.3	1.4	A	341	341
2	3.48	0.4	1.5	A	368	368
3	3.09	0.3	2.0	A	499	499

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	341	341	438	341	225	0.0	0.3	3.994	A
2	368	368	91	368	687	0.0	0.4	3.482	A
3	499	499	163	499	297	0.0	0.3	3.095	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.32	0.00	0.00	0.81	1.39
2	0.38	0.00	0.00	0.94	1.49
3	0.35	0.00	0.00	0.80	2.00

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	249	1082	0.230	249	0.0	0.2	4.181	A
			2	3	92	1082	0.085	91	0.0	0.1	3.506	A
	Exit	1	1		225			225	0.0	0.0	0.000	A
2	Entry	1	1	3	118	1148	0.103	118	0.0	0.1	3.239	A
			2	1,3	250	1148	0.218	251	0.0	0.2	3.595	A
	Exit	1	1		687			687	0.0	0.0	0.000	A
3	Entry	1	1	1,2	268	1263	0.212	269	0.0	0.2	3.163	A
			2	2	231	1263	0.183	231	0.0	0.2	3.015	A
	Exit	1	1		297			297	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	0.22	0.00	0.00	0.58	2.00
			2	0.10	0.00	0.00	0.00	0.39
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.14	0.00	0.00	1.00	1.00
			2	0.24	0.00	0.00	0.59	0.93
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.19	0.00	0.00	0.46	0.76
			2	0.16	0.00	0.00	1.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2031_FTPPh2, 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	3.73	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D4	2031_FTPPh2	PM	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	✓	328	100.000
2		FLAT	✓	777	100.000
3		FLAT	✓	275	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	245	83
	2	239	0	538
	3	95	180	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	3.67	0.2	0.9	A	347	347
2	3.99	1.0	2.7	A	790	790
3	3.08	0.3	0.9	A	283	283

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	347	347	185	349	343	0.0	0.2	3.675	A
2	790	790	86	790	447	0.0	1.0	3.994	A
3	283	283	245	282	630	0.0	0.3	3.085	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.22	0.00	0.00	0.56	0.87
2	0.95	0.00	0.19	1.79	2.65
3	0.26	0.00	0.00	0.66	0.94

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	261	1175	0.222	263	0.0	0.2	3.832	A
			2	3	86	1175	0.073	86	0.0	0.0	3.215	A
	Exit	1	1		343			343	0.0	0.0	0.000	A
2	Entry	1	1	3	315	1150	0.274	314	0.0	0.4	3.618	A
			2	1,3	475	1150	0.413	475	0.0	0.5	4.241	A
	Exit	1	1		447			447	0.0	0.0	0.000	A
3	Entry	1	1	1,2	188	1231	0.152	187	0.0	0.2	3.184	A
			2	2	96	1231	0.078	95	0.0	0.1	2.897	A
	Exit	1	1		630			630	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	0.17	0.00	0.00	0.38	0.77
			2	0.05	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.42	0.00	0.00	0.87	1.39
			2	0.53	0.00	0.00	1.10	1.66
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.19	0.00	0.00	0.45	0.84
			2	0.07	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FB_Full Build-out, 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	3.29	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D5	2041_FB_Full Build-out	AM	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	✓	83	100.000
2		FLAT	✓	399	100.000
3		FLAT	✓	529	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	66	17
	2	178	0	221
	3	64	465	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	3.46	0.1	0.6	A	81	81
2	3.51	0.5	1.7	A	412	412
3	3.10	0.4	1.4	A	534	534

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	81	81	473	80	239	0.0	0.1	3.461	A
2	412	412	17	410	537	0.0	0.5	3.507	A
3	534	534	175	537	252	0.0	0.4	3.098	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.12	0.00	0.00	-0.01	0.62
2	0.48	0.00	0.00	0.95	1.66
3	0.40	0.00	0.00	0.87	1.39

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	64	1069	0.059	64	0.0	0.1	3.526	A
			2	3	17	1069	0.016	17	0.0	0.0	3.215	A
	Exit	1	1		239			239	0.0	0.0	0.000	A
2	Entry	1	1	3	133	1174	0.113	132	0.0	0.2	3.168	A
			2	1,3	279	1174	0.237	278	0.0	0.3	3.662	A
	Exit	1	1		537			537	0.0	0.0	0.000	A
3	Entry	1	1	1,2	285	1258	0.227	288	0.0	0.2	3.160	A
			2	2	249	1258	0.198	249	0.0	0.2	3.025	A
	Exit	1	1		252			252	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	0.07	0.00	0.00	0.00	0.19
			2	0.05	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	0.17	0.00	0.00	0.29	0.80
			2	0.31	0.00	0.00	0.72	0.95
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.20	0.00	0.00	0.49	0.78
			2	0.20	0.00	0.00	0.49	0.85
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FB_Full Build-out, 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	3.41	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D6	2041_FB_Full Build-out	PM	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	✓	284	100.000
2		FLAT	✓	617	100.000
3		FLAT	✓	204	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	224	60
	2	43	0	574
	3	15	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	0.3	1.0	A	283	283
2	3.51	0.6	1.8	A	611	611
3	2.77	0.2	0.7	A	208	208

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	283	283	191	284	67	0.0	0.3	3.653	A
2	611	611	61	612	414	0.0	0.6	3.514	A
3	208	208	51	208	622	0.0	0.2	2.773	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.26	0.00	0.00	0.66	0.99
2	0.59	0.00	0.00	1.29	1.80
3	0.16	0.00	0.00	0.33	0.75

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	223	1173	0.190	223	0.0	0.2	3.787	A
			2	3	61	1173	0.052	61	0.0	0.0	3.164	A
	Exit	1	1		67			67	0.0	0.0	0.000	A
2	Entry	1	1	3	288	1159	0.249	289	0.0	0.2	3.459	A
			2	1,3	323	1159	0.279	324	0.0	0.4	3.565	A
	Exit	1	1		414			414	0.0	0.0	0.000	A
3	Entry	1	1	1,2	112	1306	0.086	112	0.0	0.1	2.771	A
			2	2	97	1306	0.074	96	0.0	0.1	2.776	A
	Exit	1	1		622			622	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	0.22	0.00	0.00	0.53	0.86
			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	0.24	0.00	0.00	0.60	0.85
			2	0.36	0.00	0.00	0.80	2.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.06	0.00	0.00	0.00	1.00
			2	0.10	0.00	0.00	1.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FT_Full Build-out, 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	3.84	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D7	2041_FT_Full Build-out	AM	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	✓	441	100.000
2		FLAT	✓	479	100.000
3		FLAT	✓	561	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	322	119
	2	257	0	222
	3	96	465	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	4.49	0.5	1.7	A	446	446
2	3.91	0.4	1.6	A	468	468
3	3.26	0.6	1.7	A	564	564

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	446	446	464	446	354	0.0	0.5	4.493	A
2	468	468	120	468	790	0.0	0.4	3.907	A
3	564	564	256	562	333	0.0	0.6	3.256	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.50	0.00	0.00	1.11	1.74
2	0.40	0.00	0.00	0.90	1.59
3	0.61	0.00	0.00	1.30	1.69

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	325	1072	0.303	326	0.0	0.4	4.740	A
			2	3	121	1072	0.112	120	0.0	0.1	3.818	A
	Exit	1	1		354			354	0.0	0.0	0.000	A
2	Entry	1	1	3	128	1137	0.112	129	0.0	0.1	3.317	A
			2	1,3	340	1137	0.299	340	0.0	0.3	4.131	A
	Exit	1	1		790			790	0.0	0.0	0.000	A
3	Entry	1	1	1,2	317	1227	0.258	317	0.0	0.3	3.343	A
			2	2	246	1227	0.201	245	0.0	0.3	3.144	A
	Exit	1	1		333			333	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	0.38	0.00	0.00	0.85	1.49
			2	0.13	0.00	0.00	1.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.10	0.00	0.00	1.00	1.00
			2	0.30	0.00	0.00	0.79	1.33
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.33	0.00	0.00	0.73	0.95
			2	0.29	0.00	0.00	0.68	0.88
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

2041_FT_Full Build-out, 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	4.29	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D8	2041_FT_Full Build-out	PM	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	✓	560	100.000
2		FLAT	✓	890	100.000
3		FLAT	✓	313	100.000

Origin-Destination Data

Demand (Veh/hr)

		To		
		1	2	3
From	1	0	395	165
	2	356	0	534
	3	138	175	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	4.30	0.6	2.5	A	553	553
2	4.62	1.2	3.5	A	898	898
3	3.33	0.3	1.0	A	311	311

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	553	553	178	556	492	0.0	0.6	4.299	A
2	898	898	164	896	570	0.0	1.2	4.624	A
3	311	311	360	311	700	0.0	0.3	3.327	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.56	0.00	0.00	1.38	2.49
2	1.20	0.00	0.40	2.56	3.49
3	0.31	0.00	0.00	0.72	0.95

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	391	1178	0.332	391	0.0	0.5	4.587	A
			2	3	162	1178	0.138	164	0.0	0.1	3.596	A
	Exit	1	1		492			492	0.0	0.0	0.000	A
2	Entry	1	1	3	333	1122	0.297	333	0.0	0.4	3.926	A
			2	1,3	564	1122	0.503	563	0.0	0.8	5.041	A
	Exit	1	1		570			570	0.0	0.0	0.000	A
3	Entry	1	1	1,2	215	1187	0.181	215	0.0	0.2	3.429	A
			2	2	95	1187	0.080	96	0.0	0.1	3.100	A
	Exit	1	1		700			700	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	0.47	0.00	0.00	0.94	2.49
			2	0.10	0.00	0.00	0.00	0.49
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
2	Entry	1	1	0.39	0.00	0.00	0.82	2.00
			2	0.81	0.00	0.00	1.76	2.65
	Exit	1	1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.23	0.00	0.00	1.00	1.00
			2	0.08	0.00	0.00	0.00	0.33
	Exit	1	1	0.00	0.00	0.00	0.00	0.00

APPENDIX H: Signal Warrants



APPENDIX H1:
Signal Warrants – Phase 1 (2031)



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?

Rural

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	0	5	9	0	0	1	0	19	0	34	0	0	10
8:00	1	9	16	0	0	2	0	32	0	58	0	0	10
9:00	1	10	18	0	0	2	0	37	0	67	0	0	10
10:00	0	5	9	0	0	1	0	19	0	34	0	0	10
15:00	1	16	29	0	0	1	0	12	0	23	0	0	10
16:00	2	28	51	0	0	1	0	21	0	39	0	0	10
17:00	2	31	57	0	0	2	0	25	0	45	0	0	10
18:00	1	16	29	0	0	1	0	12	0	23	0	0	10
Total	8	119	217	0	0	11	0	177	0	322	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 susceptible 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	NO
1. Minimum Vehicular Volume	A Total Volume	22	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	35	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	14	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	88	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	22	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	14	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		8	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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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?

Rural

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 susceptible 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

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Intersection: Humber Station Rd & Street EE

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	4	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	36	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	4	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	36	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		9	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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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?

Rural

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	1	22	24	0	0	2	0	60	0	0	0	0	10
8:00	2	40	43	1	0	4	0	102	0	0	0	0	10
9:00	2	45	49	1	0	5	0	120	0	0	0	0	10
10:00	1	22	24	0	0	2	0	60	0	0	0	0	10
15:00	3	83	78	0	0	1	0	32	0	0	0	0	10
16:00	6	149	139	0	0	2	0	54	1	0	0	0	10
17:00	6	167	155	0	0	3	0	64	1	0	0	0	10
18:00	3	83	78	0	0	1	0	32	0	0	0	0	10
Total	24	611	590	3	0	22	0	524	2	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 susceptible 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

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Intersection: Humber & Steet Y

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	37 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	3 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	36 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	21 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	3 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	21 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		1 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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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?

Rural

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	0	328	0	0	0	0	0	295	14	0	0	46	10
8:00	0	525	0	0	0	0	0	485	23	0	0	76	10
9:00	0	655	0	0	0	0	0	591	28	0	0	92	10
10:00	0	328	0	0	0	0	0	295	14	0	0	46	10
15:00	0	371	0	0	0	0	0	365	45	0	0	29	10
16:00	0	595	0	0	0	0	0	600	75	0	0	48	10
17:00	0	743	0	0	0	0	0	730	91	0	0	58	10
18:00	0	371	0	0	0	0	0	365	45	0	0	29	10
Total	0	3,916	0	0	0	0	0	3,727	337	0	0	424	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: King & East Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	29	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	20	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	29	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	20	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		51	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Street Y & Street I

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?

Rural

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	2	3	1	0	0	6	0	9	0	4	0	0	10
8:00	4	5	2	0	0	11	0	16	0	7	0	0	10
9:00	4	6	2	0	0	13	0	18	0	8	0	0	10
10:00	2	3	1	0	0	6	0	9	0	4	0	0	10
15:00	6	9	4	0	0	4	0	6	0	2	0	0	10
16:00	11	16	7	0	0	7	0	10	0	4	0	0	10
17:00	13	18	7	0	0	8	0	11	0	5	0	0	10
18:00	6	9	4	0	0	4	0	6	0	2	0	0	10
Total	48	68	28	0	0	60	0	85	0	35	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 susceptible 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

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Intersection: Street Y & Street I

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	8 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	10 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	6 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	29 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	8 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	6 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		2 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Street Y & Street JJ

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?

Rural

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	0	5	9	0	0	1	0	19	0	34	0	0	10
8:00	1	9	16	0	0	2	0	32	0	58	0	0	10
9:00	1	10	18	0	0	2	0	37	0	67	0	0	10
10:00	0	5	9	0	0	1	0	19	0	34	0	0	10
15:00	1	16	29	0	0	1	0	12	0	23	0	0	10
16:00	2	28	51	0	0	1	0	21	0	39	0	0	10
17:00	2	31	57	0	0	2	0	25	0	45	0	0	10
18:00	1	16	29	0	0	1	0	12	0	23	0	0	10
Total	8	119	217	0	0	11	0	177	0	322	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 susceptible 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

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Intersection: Street Y & Street JJ

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	22 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	35 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	14 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	88 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	22 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	14 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		8 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 1 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?

Rural

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	28	216	0	0	0	0	0	327	14	112	0	46	10
8:00	44	346	0	0	0	0	0	538	23	179	0	76	10
9:00	55	432	0	0	0	0	0	654	28	224	0	92	10
10:00	28	216	0	0	0	0	0	327	14	112	0	46	10
15:00	88	294	0	0	0	0	0	349	45	77	0	29	10
16:00	142	471	0	0	0	0	0	573	75	124	0	48	10
17:00	177	588	0	0	0	0	0	697	91	155	0	58	10
18:00	88	294	0	0	0	0	0	349	45	77	0	29	10
Total	651	2,857	0	0	0	0	0	3,815	337	1,060	0	424	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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](#)

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[Proposed Collision](#)

[GO TO Justification:](#)

Intersection: Phase 1 King & West Site access

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	86 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	99 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	86 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Justification 2	99 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. 4-Hr Volume		100 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

APPENDIX H2:
Signal Warrants – Phase 2 (2031)



Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 2 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	0	406	0	0	0	0	0	334	20	0	0	75	10
8:00	0	650	0	0	0	0	0	550	33	0	0	123	10
9:00	0	812	0	0	0	0	0	669	40	0	0	149	10
10:00	0	406	0	0	0	0	0	334	20	0	0	75	10
15:00	0	424	0	0	0	0	0	418	66	0	0	48	10
16:00	0	679	0	0	0	0	0	686	108	0	0	78	10
17:00	0	849	0	0	0	0	0	835	131	0	0	95	10
18:00	0	424	0	0	0	0	0	418	66	0	0	48	10
Total	0	4,652	0	0	0	0	0	4,244	483	0	0	689	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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](#)

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[Proposed Collision](#)

[GO TO Justification:](#)

Intersection: Phase 2 King & East Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	98	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	34	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	96	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	13	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	34	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	13	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		86	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 2 Street Y & Street I

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	1	12	1	0	44	5	11	45	0	6	14	4	10
8:00	2	22	1	0	77	9	19	78	0	10	24	6	10
9:00	3	24	2	0	89	10	22	91	0	12	27	7	10
10:00	1	12	1	0	44	5	11	45	0	6	14	4	10
15:00	4	40	3	0	26	3	7	29	0	11	47	12	10
16:00	8	71	5	0	46	6	12	49	0	19	82	21	10
17:00	9	80	5	0	53	6	14	58	0	22	94	23	10
18:00	4	40	3	0	26	3	7	29	0	11	47	12	10
Total	34	301	20	0	406	47	102	424	0	96	349	88	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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									
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									
Net 8 Hour Volume of Delayed Pedestrians									34

Results Sheet

[Input Sheet](#)
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[Proposed Collision](#)
[GO TO Justification:](#)

Intersection: Phase 2 Street Y & Street I

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	32 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	70 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	15 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	93 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	32 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	15 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		25 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Street Y & Street JJ

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	0	35	19	0	17	1	13	158	0	25	5	4	10
8:00	0	62	35	0	30	1	22	271	0	42	8	7	10
9:00	0	70	39	0	34	2	26	316	0	49	10	8	10
10:00	0	35	19	0	17	1	13	158	0	25	5	4	10
15:00	1	107	24	0	9	1	8	104	0	24	18	14	10
16:00	1	191	43	0	16	1	14	178	0	41	31	24	10
17:00	1	214	49	0	18	1	16	208	0	47	36	27	10
18:00	1	107	24	0	9	1	8	104	0	24	18	14	10
Total	4	820	252	0	149	7	120	1,496	0	276	131	103	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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](#)

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[Proposed Collision](#)

[GO TO Justification:](#)

Intersection: Street Y & Street JJ

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	58 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	49 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	47 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	84 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	49 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	47 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		29 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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	10	77	96	2	2	26	1	143	0	53	1	2	10
8:00	17	138	171	3	3	45	1	244	1	90	2	3	10
9:00	19	155	192	3	4	52	1	285	1	105	2	3	10
10:00	10	77	96	2	2	26	1	143	0	53	1	2	10
15:00	31	218	71	3	8	18	2	80	1	63	1	1	10
16:00	56	389	127	5	14	31	3	137	2	109	1	2	10
17:00	62	436	143	6	15	36	4	160	2	127	2	2	10
18:00	31	218	71	3	8	18	2	80	1	63	1	1	10
Total	236	1,709	967	27	56	251	13	1,272	8	663	11	16	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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](#)

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[Proposed Collision](#)

[GO TO Justification:](#)

Intersection: Humber Station & Street E

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	82 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	74 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	72 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	97 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	74 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	72 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		62 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 2 Emil Kolb & Street Y

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?

2 or more

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	79	103	0	45	0	118	0	222	29	0	0	0	10
8:00	106	138	0	60	0	186	0	351	47	0	0	0	10
9:00	158	205	0	90	0	236	0	444	59	0	0	0	10
10:00	79	103	0	45	0	118	0	222	29	0	0	0	10
15:00	120	269	0	41	0	123	0	90	47	0	0	0	10
16:00	194	438	0	67	0	290	0	213	112	0	0	0	10
17:00	239	538	0	83	0	245	0	180	95	0	0	0	10
18:00	120	269	0	41	0	123	0	90	47	0	0	0	10
Total	1,094	2,063	0	472	0	1,439	0	1,813	466	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 susceptible 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: Phase 2 Emil Kolb & Street Y

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	86 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	82 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	85 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	82 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		92 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 2_ 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	0	93	16	0	0	0	14	323	0	57	0	12	10
8:00	0	248	43	0	0	0	22	528	0	92	0	33	10
9:00	0	186	33	0	0	0	27	647	0	113	0	24	10
10:00	0	93	16	0	0	0	14	323	0	57	0	12	10
15:00	0	346	65	0	0	0	23	125	0	36	0	13	10
16:00	0	546	102	0	0	0	41	222	0	64	0	21	10
17:00	0	692	129	0	0	0	47	251	0	72	0	26	10
18:00	0	346	65	0	0	0	23	125	0	36	0	13	10
Total	0	2,549	470	0	0	0	211	2,546	0	526	0	155	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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: Phase 2_ Gore Rd & North Site access

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	89 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	33 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	85 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	87 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	33 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	85 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		90 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 2 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	0	182	0	1	0	0	0	302	0	0	0	0	10
8:00	0	325	0	1	0	0	0	517	0	0	0	0	10
9:00	0	364	0	1	0	0	0	604	0	0	0	0	10
10:00	0	182	0	1	0	0	0	302	0	0	0	0	10
15:00	0	374	0	0	0	0	0	214	1	0	0	0	10
16:00	0	668	0	0	0	0	0	365	0	1	0	0	10
17:00	0	748	0	0	0	0	0	427	1	0	0	0	10
18:00	0	374	0	0	0	0	0	214	1	0	0	0	10
Total	0	3,217	0	4	0	0	0	2,945	3	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 susceptible 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](#)
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[GO TO Justification:](#)

Intersection: Phase 2 Humber Station Rd & Street EE

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	79	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	79	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	14	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	14	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		0	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience	73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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	3	136	55	4	95	9	28	210	1	41	31	37	10
8:00	6	243	98	7	166	16	48	358	1	70	54	65	10
9:00	6	272	109	8	190	18	56	419	1	82	61	73	10
10:00	3	136	55	4	95	9	28	210	1	41	31	37	10
15:00	12	271	101	1	60	5	49	121	3	40	101	26	10
16:00	22	484	181	3	106	8	84	207	4	68	177	46	10
17:00	24	542	202	3	121	9	99	242	5	80	203	51	10
18:00	12	271	101	1	60	5	49	121	3	40	101	26	10
Total	88	2,356	902	31	893	79	441	1,886	19	461	759	360	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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](#)
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[GO TO Justification:](#)

Intersection: Humber & Steet Y

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	90 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	75 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	90 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	75 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		88 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 2 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	35	235	0	0	0	0	0	389	20	172	0	77	10
8:00	56	376	0	0	0	0	0	640	33	275	0	127	10
9:00	70	469	0	0	0	0	0	778	40	343	0	155	10
10:00	35	235	0	0	0	0	0	389	20	172	0	77	10
15:00	104	309	0	0	0	0	0	399	66	116	0	48	10
16:00	166	494	0	0	0	0	0	657	108	185	0	79	10
17:00	207	617	0	0	0	0	0	799	131	232	0	96	10
18:00	104	309	0	0	0	0	0	399	66	116	0	48	10
Total	777	3,042	0	0	0	0	0	4,451	483	1,610	0	708	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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: Phase 2 King & West Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	90	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	93	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	90	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Justification 2	93	%	<input type="checkbox"/>	<input type="checkbox"/>
4. 4-Hr Volume		100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience	73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

APPENDIX H3:
Signal Warrants – Full Build-Out (2041)



Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT 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	0	121	24	0	0	0	21	402	0	104	0	14	10
8:00	0	323	65	0	0	0	35	657	0	170	0	37	10
9:00	0	243	49	0	0	0	43	804	0	208	0	28	10
10:00	0	121	24	0	0	0	21	402	0	104	0	14	10
15:00	0	436	80	0	0	0	25	175	0	70	0	24	10
16:00	0	688	126	0	0	0	44	309	0	124	0	38	10
17:00	0	872	159	0	0	0	50	349	0	140	0	48	10
18:00	0	436	80	0	0	0	25	175	0	70	0	24	10
Total	0	3,241	607	0	0	0	264	3,272	0	991	0	227	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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: FT Gore Rd & North Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	99 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	60 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	95 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	60 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	95 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		100 %		<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT 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	0	146	25	0	0	0	8	498	0	105	0	12	10
8:00	0	389	67	0	0	0	13	814	0	172	0	31	10
9:00	0	292	51	0	0	0	16	997	0	210	0	24	10
10:00	0	146	25	0	0	0	8	498	0	105	0	12	10
15:00	0	565	76	0	0	0	22	223	0	73	0	17	10
16:00	0	892	120	0	0	0	38	395	0	129	0	27	10
17:00	0	1,130	152	0	0	0	43	446	0	145	0	34	10
18:00	0	565	76	0	0	0	22	223	0	73	0	17	10
Total	0	4,126	594	0	0	0	169	4,094	0	1,011	0	174	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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: FT Gore Rd & South Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	58	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	99	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	58	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	99	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT 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	11	379	0	0	0	0	0	344	23	106	0	49	10
8:00	18	607	0	0	0	0	0	565	38	169	0	81	10
9:00	23	758	0	0	0	0	0	688	47	211	0	99	10
10:00	11	379	0	0	0	0	0	344	23	106	0	49	10
15:00	40	432	0	0	0	0	0	470	82	70	0	31	10
16:00	65	691	0	0	0	0	0	772	135	111	0	51	10
17:00	81	863	0	0	0	0	0	939	164	139	0	62	10
18:00	40	432	0	0	0	0	0	470	82	70	0	31	10
Total	290	4,540	0	0	0	0	0	4,592	594	982	0	454	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: FT King & East Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	68	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	96	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	68	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	96	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT 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	11	285	0	0	0	0	0	370	23	106	0	52	10
8:00	18	456	0	0	0	0	0	608	38	169	0	85	10
9:00	23	570	0	0	0	0	0	740	47	211	0	104	10
10:00	11	285	0	0	0	0	0	370	23	106	0	52	10
15:00	40	402	0	0	0	0	0	419	82	70	0	31	10
16:00	65	644	0	0	0	0	0	689	135	111	0	51	10
17:00	81	805	0	0	0	0	0	838	164	139	0	63	10
18:00	40	402	0	0	0	0	0	419	82	70	0	31	10
Total	290	3,849	0	0	0	0	0	4,451	594	982	0	470	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: FT King & West Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	99	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	68	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	94	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	68	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	94	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Street Y & Street I

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	8	21	1	2	114	13	13	94	8	9	116	7	10
8:00	14	38	3	3	200	22	23	161	14	15	203	13	10
9:00	16	42	3	4	229	25	27	189	17	18	233	15	10
10:00	8	21	1	2	114	13	13	94	8	9	116	7	10
15:00	12	74	5	6	121	14	8	61	5	14	157	13	10
16:00	21	133	9	11	212	24	13	104	9	24	275	24	10
17:00	24	149	10	13	243	29	15	122	10	28	315	27	10
18:00	12	74	5	6	121	14	8	61	5	14	157	13	10
Total	114	553	37	47	1,354	154	121	887	78	131	1,573	119	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: Street Y & Street I

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	81 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	31 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	81 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	31 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		80 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT Street Y & Street JJ

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	11	20	18	1	88	6	15	92	5	14	122	8	10
8:00	19	36	32	2	153	11	26	158	9	24	212	14	10
9:00	21	40	36	2	175	12	31	184	10	28	243	16	10
10:00	11	20	18	1	88	6	15	92	5	14	122	8	10
15:00	10	71	18	4	117	7	9	59	3	17	136	15	10
16:00	18	126	33	7	205	12	15	100	5	29	239	27	10
17:00	20	141	37	8	234	14	18	117	6	34	273	31	10
18:00	10	71	18	4	117	7	9	59	3	17	136	15	10
Total	119	524	209	28	1,176	74	139	860	46	178	1,483	135	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: FT Street Y & Street JJ

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	80 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	33 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	80 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	33 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		83 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT Emil Kolb & Street Y

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?

2 or more

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	129	111	0	60	0	161	0	232	48	0	0	0	10
8:00	173	150	0	80	0	255	0	367	75	0	0	0	10
9:00	257	222	0	119	0	322	0	465	95	0	0	0	10
10:00	129	111	0	60	0	161	0	232	48	0	0	0	10
15:00	178	267	0	83	0	197	0	88	69	0	0	0	10
16:00	289	434	0	134	0	466	0	207	163	0	0	0	10
17:00	356	534	0	165	0	395	0	175	138	0	0	0	10
18:00	178	267	0	83	0	197	0	88	69	0	0	0	10
Total	1,688	2,096	0	783	0	2,155	0	1,855	706	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 susceptible 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

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Intersection: FT Emil Kolb & Street Y

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	95	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	97	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	79	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	98	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	95	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	79	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		100	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT 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	11	92	180	2	2	27	1	160	0	66	1	2	10
8:00	19	164	321	3	4	47	1	274	1	113	1	4	10
9:00	22	184	359	4	4	55	1	320	1	133	2	4	10
10:00	11	92	180	2	2	27	1	160	0	66	1	2	10
15:00	38	259	115	3	7	18	2	90	1	99	1	1	10
16:00	68	463	206	5	13	31	4	154	2	170	1	2	10
17:00	77	518	230	6	15	36	4	180	3	199	1	3	10
18:00	38	259	115	3	7	18	2	90	1	99	1	1	10
Total	285	2,030	1,704	29	54	261	16	1,428	10	946	8	19	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: FT Humber Station & Street E

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	91	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	84	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	83	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	84	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Justification 2	83	%	<input type="checkbox"/>	<input type="checkbox"/>
4. 4-Hr Volume		94	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

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Proposed Collision

GO TO Justification:

What are the intersecting roadways?

FT 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	0	294	0	7	0	0	0	355	1	0	0	0	10
8:00	0	525	0	13	0	0	0	607	2	0	0	0	10
9:00	0	589	0	15	0	0	0	710	3	0	0	0	10
10:00	0	294	0	7	0	0	0	355	1	0	0	0	10
15:00	0	528	0	2	0	0	0	326	8	0	0	0	10
16:00	0	943	0	4	0	0	0	558	14	0	0	0	10
17:00	0	1,056	0	5	0	0	0	652	16	0	0	0	10
18:00	0	528	0	2	0	0	0	326	8	0	0	0	10
Total	0	4,758	0	57	0	0	0	3,888	53	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 susceptible 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

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Intersection: FT Humber Station Rd & Street EE

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	92	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	3	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	92	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	23	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	3	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	23	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		7	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>

5. Collision Experience		73	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Input Data Sheet

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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	35	195	69	15	126	29	42	229	5	72	38	66	10
8:00	62	349	124	27	221	49	71	392	8	123	67	118	10
9:00	69	391	138	30	253	57	83	458	10	144	76	132	10
10:00	35	195	69	15	126	29	42	229	5	72	38	66	10
15:00	52	327	175	20	78	20	85	129	6	79	134	34	10
16:00	93	584	313	36	136	35	145	221	11	135	235	61	10
17:00	104	654	350	40	155	41	170	258	13	158	268	68	10
18:00	52	327	175	20	78	20	85	129	6	79	134	34	10
Total	502	3,022	1,413	202	1,173	280	723	2,047	64	862	991	578	80

Justification 5: Collision Experience

Preceding Months	Number of Collisions*
1-12	4
13-24	3
25-36	4

* Include only collisions that are susceptible 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

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Intersection: Humber & Steet Y

Count Date: 2022

Summary Results

	Justification	Compliance	Signal Justified?	
			YES	NO
1. Minimum Vehicular Volume	A Total Volume	100 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Crossing Volume	100 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	87 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Combination	A Justificaton 1	100 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Justification 2	87 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. 4-Hr Volume		100 %	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5. Collision Experience		73 %	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met	<input type="checkbox"/>	<input checked="" type="checkbox"/>