



May 17, 2022

c/o Aaron Wisson
Argo Macville I Corporation
Argo Macville II Corporation
Robert Speirs
Argo Macville V Corporation
Argo Humberking Corporation

RE: Traffic Compliance Letter – Argo Macville I, II,III,V, and Argo Humberking Plan of Subdivision

Dear Mr. Wisson:

BA Group has been retained by Argo Macville I Corporation, Argo Macville II Corporation, Robert Speirs, Argo Macville V Corporation and Argo Humberking Corporation (herein referred to as the 'Owners') to provide transportation advisory services for the applications for Draft Plan of Subdivision (21T-22001) and for Amendment to the Zoning By-Law (RZ 2022-0002) which were originally submitted in March 2022. These applications seek planning approvals to implement redevelopment of the lands legally described as Part of Lots 11, 12 and 13, Concession 4 (Albion), Town of Caledon (the 'Subject Lands') and are generally located in between The Gore Road and Humber Station Road, north of King Street.

1.0 PLANNING APPLICATION CONTEXT

It is important to note that the original applications submitted in March 2022 related to the ROPA 30 lands only consisted of approximately 30.37 ha (75.05 ac) and were generally in the eastern portion of the future Caledon Station Secondary Plan lands. Since the applications were submitted in March 2022, the Region of Peel 2051 Official Plan was approved by the Province (Nov., 2022) and surrounding lands have been added to the 2051 Urban Area, including additional lands owned by the Owners noted above. Accordingly, the overall Subject Lands now consist of 107.19 ha (264.87 ac). and are now part of the subject Draft Plan of Subdivision and Rezoning applications.

The Subject Lands are entirely within the Region of Peel's Urban Area (ROP, Nov 2022) with the eastern portion of the Subject Lands being within the Region's Major Transit Station Area (MTSA). As well, the Subject Lands are currently part of the Caledon Station Secondary Plan process (POPA-2021-0002). The effect of the Secondary Plan will be to apply land use designations to the Subject Lands, including Low Density Residential, Medium Density Residential, Mixed Use, Institutional, Open Space Policy Area. The subject Draft Plan of Subdivision and Zoning By-Law Amendment for the Subject Lands will ensure the creation of a compact, pedestrian and transit-oriented development through implementation of the Secondary Plan policies.

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 eastern portion of the Subject Lands.

BA Consulting Group Ltd.

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ENVIRONMENTS BAGROUP.COM**

This MZO established zoning for the eastern portion of the Subject Lands as a 'Mixed Use Residential Zone'. This Zone permits a range of detached, semi-detached and townhouse dwellings as well as a range of mid-rise residential and commercial uses.

2.0 THIS LETTER

This Traffic Compliance letter has been prepared on behalf of the Owner for of a Draft Plan of Subdivision ('DPS') and Zoning By-law Amendment ('ZBA' or 'Amendment') resubmission to facilitate the development of the Draft Plan of Subdivision consisting of a mixture of land uses, various built forms and densities.

This letter provides a summary of the DPS as it relates to transportation.

The transportation items to be examined in this letter are set out below:

- Compliance with the traffic generation estimates in the Caledon Station Secondary Plan Transportation Study (formerly named Macville Secondary Plan) and preliminary phasing assessment;
- On-Street Parking Allocation; and,
- Waste Management Strategy.

A copy of the draft Plan of Subdivision and latest Caledon Station Secondary Plan (May 2023) is provided in **Attachment A**.

3.0 BACKGROUND

3.1 TRANSPORTATION STUDIES

3.1.1 Region of Peel Transportation Master Plan

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

3.1.2 Town of Caledon Multi Modal Transportation Master Plan

The Town of Caledon has prepared a draft Official Plan and draft Multi Modal Transportation Master Plan (MMTMP) that includes urban boundary expansion and an MTSA associated with a Caledon GO Station. The draft Official Plan and MMTMP are undergoing revisions to be completed in 2023 that will enable the Town to:

- Undertake additional public and agency consultation;
- Provide Caledon's Growth Concept directly to the province; and,
- Innovate around key areas.



3.1.3 Caledon Station Secondary Plan Transportation Study

A submission to the Town of Caledon to establish a Secondary Plan for the Caledon Station Community in Bolton was made in February 2021 (Town File : POPA 2021-0002). As part of that process, BA Group prepared the Macville Community Secondary Plan – Transportation Study (dated February 11, 2021) on behalf of the Bolton Option 3 Landowners Group. The Secondary Plan submission was revised in October 2021 to only relate to the ROPA 30 lands. Following Provincial approval of the Region of Peel 2051 Official Plan whereby all of the Secondary Plan lands were brought into the new 2051 Urban Area, the Secondary Plan was again resubmitted and now relates to all of the Secondary Plan lands in Caledon Station.

A revised Secondary Plan - Transportation Study, that included a new report section dedicated to the operations review of the extensive internal road network, was prepared in January 2022 and submitted alongside the initial draft Plan of Subdivision application in March 2022.

The Secondary Plan has undergone revisions since March 2022 that reflect changes that respond to and address:

- Ongoing collaboration with municipal staff; and,
- comments from municipal staff and public consultation.

The updated Secondary Plan - Transportation Study (May 2023) is submitted alongside the current draft Plan of Subdivision application.

3.2 DRAFT PLAN OF SUBDIVISION

The Subject Lands, a portion of the overall Secondary Plan lands, include the provision for:

- 2,275 single detached and townhouse units as well
- Additional blocks for mid-rise residential, mixed-use, parks and schools.

Consistent with the Secondary Plan Road network, the draft Plan of Subdivision continues to protect for the provision of an extensive cycling and pedestrian friendly road network, including provision for a “Multi-Modal Ring Road” and collector road connections to Gore Road and King Street.

The hierarchy, road network connections with the arterial road system, and overall development density within the Subject Lands remain consistent with the latest Caledon Station Secondary Plan. The updated Secondary Plan Transportation Study submitted alongside this application confirms the recommended internal road network appropriately meets the ultimate needs of the Secondary Plan development.

The Draft Plan of Subdivision protects for 35.5 metre rights-of-way along the extent of Gore Road and King Road, consistent with the Region of Peel Official Plan requirements of 30 metres plus additional property dedication up to 35.5 metres (Policy 7.10.13).

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

Within the Subject Lands, the DPS protects for collector road and local road rights-of-way consistent with those developed as part of the Caledon Station Secondary Plan.



3.2.1 Phasing Assessment

While phasing of the Secondary Plan lands is subject to a Development Staging and Sequencing Plan (DSSP), a traffic analysis scenario was considered for the Subject Lands as part of this DPS should the 2,275 low-rise units proceed as a first phase of development.

We have, for the purpose of this assessment, assumed that mid-rise and mixed-use blocks within the DPS will be required to submit traffic compliance letters at a later date (Site Plan Application) to demonstrate that their development statistics, traffic generation, and transportation elements continue to conform with the overall Secondary Plan Transportation Study assumptions, recognizing there would be greater detail on building design for mid-rise and mixed-use buildings at a later date. Estimated land use densities for mid-rise and mixed-use buildings and trip generation have been considered in the overall road design and Transportation Study conducted for the Secondary Plan.

Transit and active transportation are essential elements to the proposed Caledon Station Secondary Plan. As such, we recommend early implementation of bus transit services during initial phases of the Caledon Station Secondary Plan development, such as:

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

Once GO transit is provided to Caledon Station, local bus routes can readily integrate with the Intermodal Hub within the MTSA. While every effort is recommended to put transit in place early on, a mode split reduction was not applied for the DPS traffic assessment contained herein, to reflect a conservative assumption that an early phase of development may occur in advance of extensive buildout of the GO transit terminal.

Roads within the DPS are also proposed to include active transportation facilities at the outset of development to promote and support early adoption of alternative modes of travel.

A brief description of the traffic assessment for 2,275 low-rise units on the Subject Lands is described below.



4.0 TRAFFIC VOLUME PROJECTIONS

4.1 SCOPE

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

- Existing Conditions
- Future Background Conditions (10 year horizon – 2031)
- Future Total Conditions (10 year horizon – 2031)

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

- King Street / Street JJ (Signalized);
- The Gore Road / Street A (Signalized); and
- The Gore Road / Street DDD (Unsignalized).

Existing lane configurations are shown in **Figure 1** and future lane configurations are shown in **Figure 2**.

4.2 EXISTING TRAFFIC VOLUMES

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

Existing traffic volumes are shown in **Figure 3** and the raw data is attached in **Attachment B**.

TABLE 1 EXISTING TRAFFIC DATA SOURCES

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



4.3 FUTURE BACKGROUND TRAFFIC VOLUMES

4.3.1 Background Development Growth

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

4.3.2 Corridor Growth

Adopted corridor growth rates are based on the Region of Peel's Travel Demand Forecasting Model, as outlined in **Table 2**. Corridor growth traffic volumes are shown in **Figure 4**.

TABLE 2 ADOPTED CORRIDOR GROWTH RATES

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

Notes:

- The Region of Peel has updated their 2051 Official Plan (November 2022) to include Settlement Area Boundary Expansion (SABE) and an MTSA associated with a Caledon GO Station. The Region's latest Transportation Master Plan (RTMP) update is currently ongoing and will include SABE and other recent planning decisions. Growth rates along regional corridors were provided based on the Region's current forecasting model (2019 RTMP).

4.3.3 Future Background Traffic Volumes

The future background traffic volumes were determined by adding existing traffic volumes and corridor growth traffic volumes and are shown in **Figure 5** for the 2031 analysis horizon year.

4.4 SITE TRAFFIC FORECASTS

4.4.1 Site Vehicle Trip Generation

Base residential vehicle trip generation rates were adopted based on the ITE 11th Edition and applied to the proposed development, as shown in **Table 3**. A further mode split reduction was not applied for this traffic assessment, to reflect a conservative assumption that the first phase of development may occur in advance of extensive buildout of the GO transit terminal. Residential site traffic volumes are shown in **Figure 6**.

TABLE 3 SITE TRIP GENERATION

Land Use	Number	AM Peak Hour			PM Peak Hour		
		In	Out	2-Way	In	Out	2-Way
Detached Dwelling	2,275 dwellings	0.18	0.52	0.70	0.59	0.35	0.94
		414	1,178	1,593	1,347	791	2,139

4.4.2 Site Vehicle Trip Distribution

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 4**.

TABLE 4 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

4.4.3 Future Total Traffic Volumes

Future total traffic volumes were determined by adding the future background traffic volumes with the site traffic volumes and are shown in **Figure 7** for the 2031 analysis horizon year.



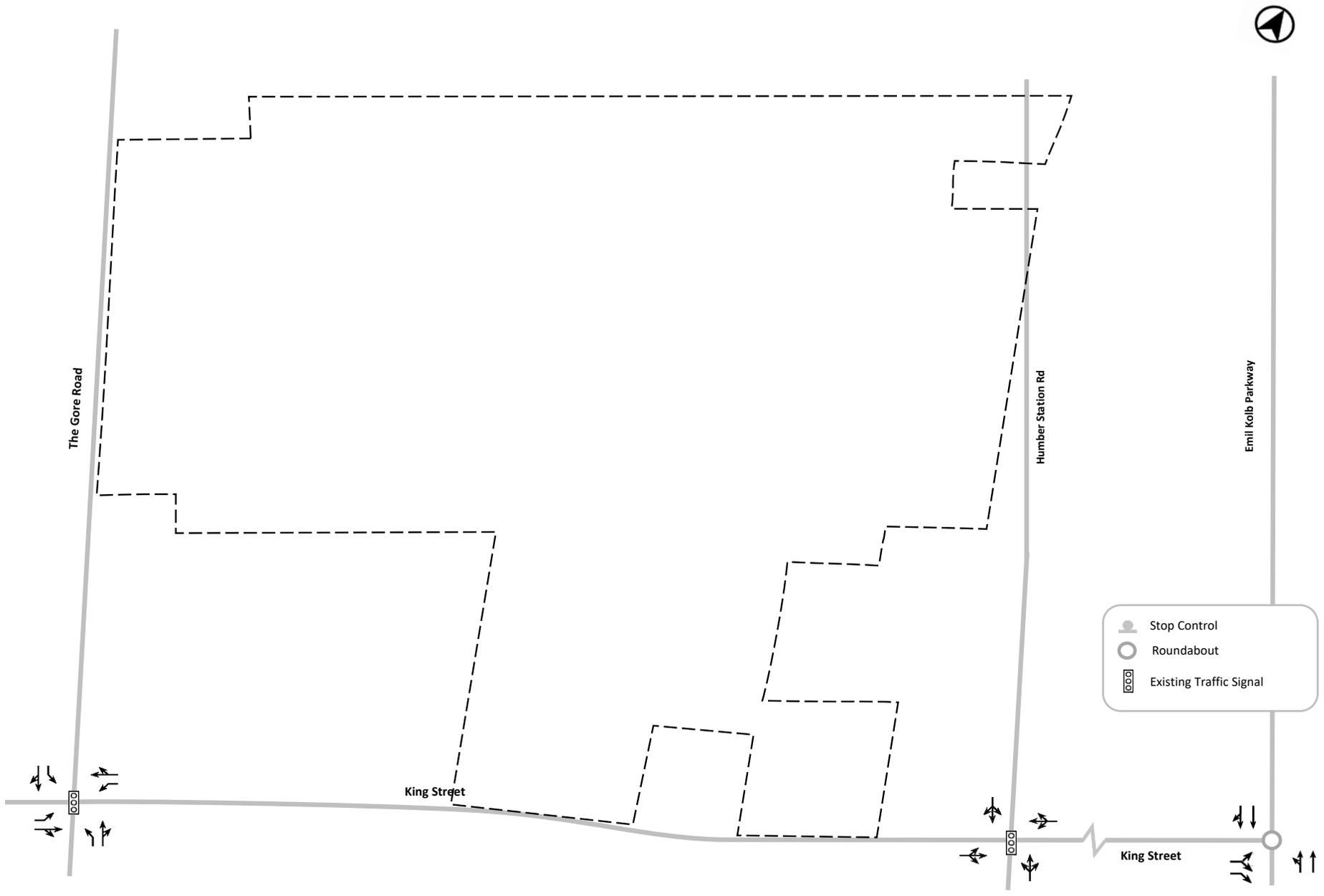


FIGURE 1 EXISTING LANE CONFIGURATIONS
CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS



FIGURE 2 FUTURE LANE CONFIGURATIONS
CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

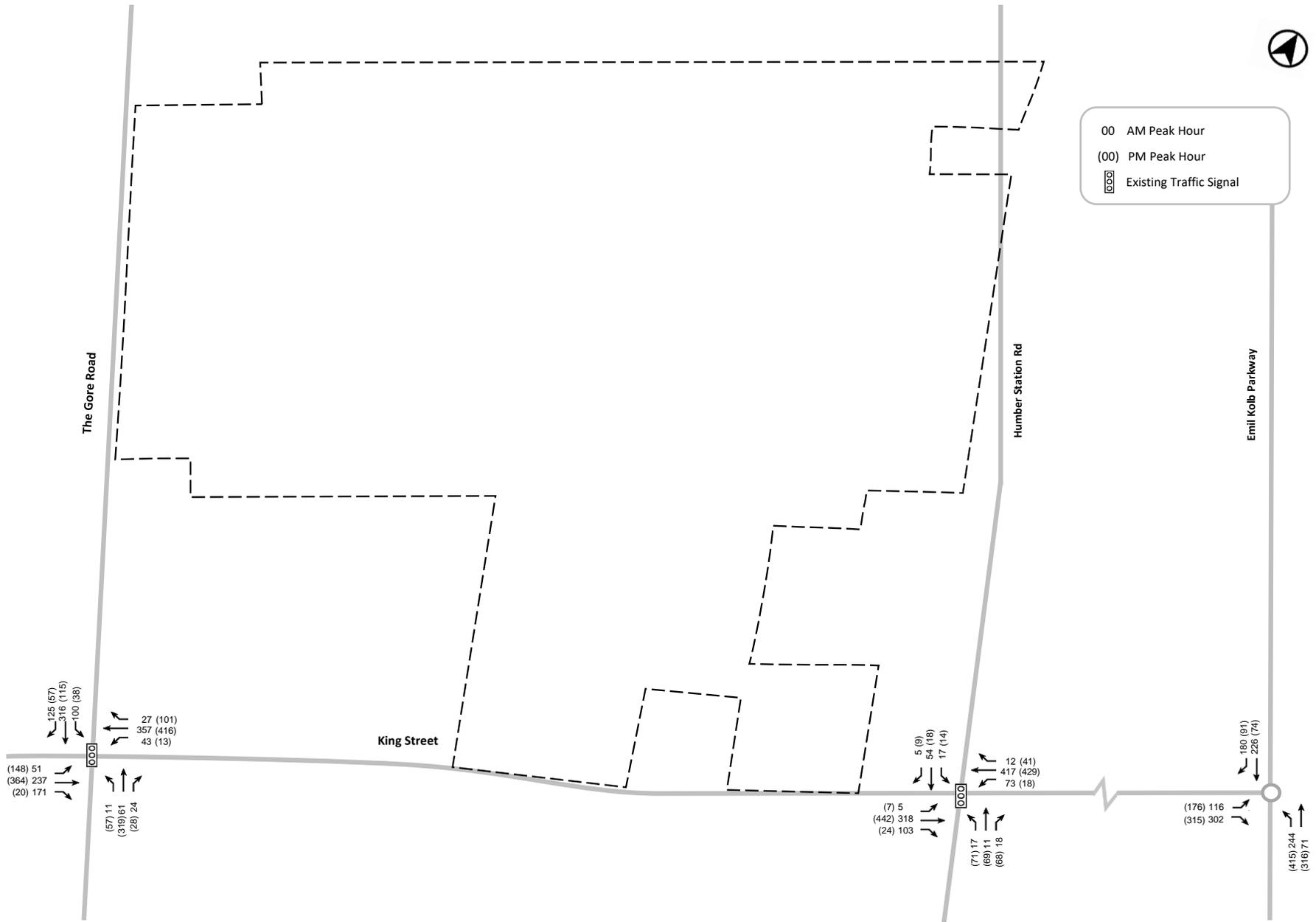


FIGURE 3 EXISTING TRAFFIC VOLUMES
 CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

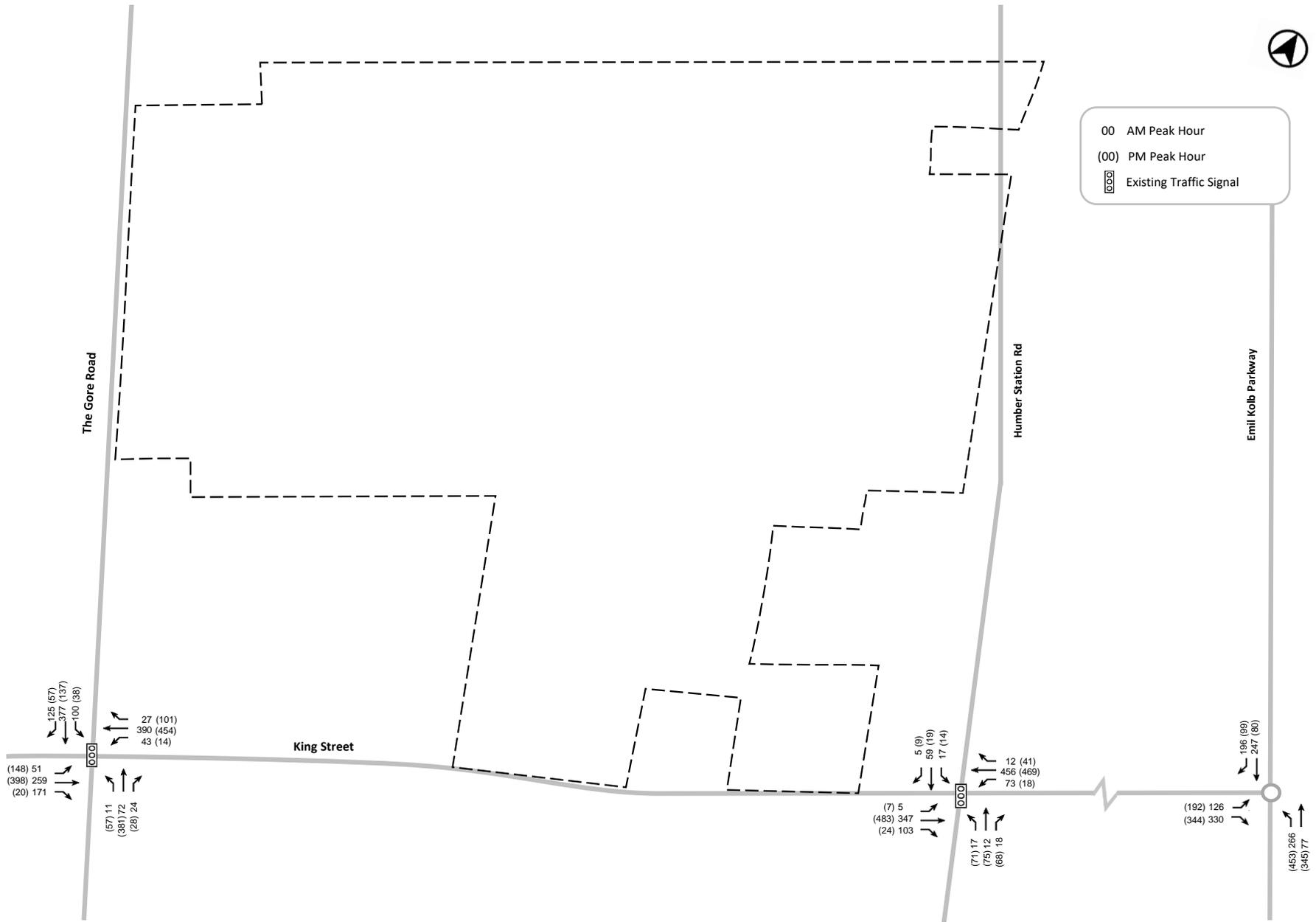


FIGURE 5 FUTURE BACKGROUND TRAFFIC VOLUMES (2031)
 CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS



FIGURE 6 RESIDENTIAL SITE TRAFFIC VOLUMES (2031)
 CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

5.0 OPERATION ANALYSIS

5.1 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 **Attachment C** and detailed analysis worksheets are attached in **Attachment D**.

5.2 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 **Attachment B**. Analyses were undertaken using these signal timing plans.

A summary of Existing Operations, Future Background Operations and Future Total Operations are illustrated in **Figure 8** to **Figure 10**.

Analysis operations indicate that the existing road network can accommodate an initial phase of development (equivalent to 2,275 units) with the following recommended road improvements:

- Left turning lanes along The Gore Road at its intersection with Street A;
- Left turning lanes along King Street at its intersection with Street JJ;
- Left and right turning lanes at the existing Humber Station Road / King Street intersection (signalized);
- Right turning lanes at the existing King Street / The Gore Road intersection (signalized);

The recommended road improvements identified above can acceptably accommodate the estimated traffic for an initial phase of development (2,275 low-rise units) do not exceed, and protect for the ultimate recommended road improvements along Gore Road and at King Street / Humber Station Road that are identified to support full build-out of the Secondary Plan.

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FIGURE 8 EXISTING INTERSECTION OPERATIONS

CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

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FIGURE 9A FUTURE BACKGROUND INTERSECTION OPERATIONS (2031) - No Improvements

CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS



FIGURE 9B FUTURE BACKGROUND INTERSECTION OPERATIONS (2031) - With Improvements

CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

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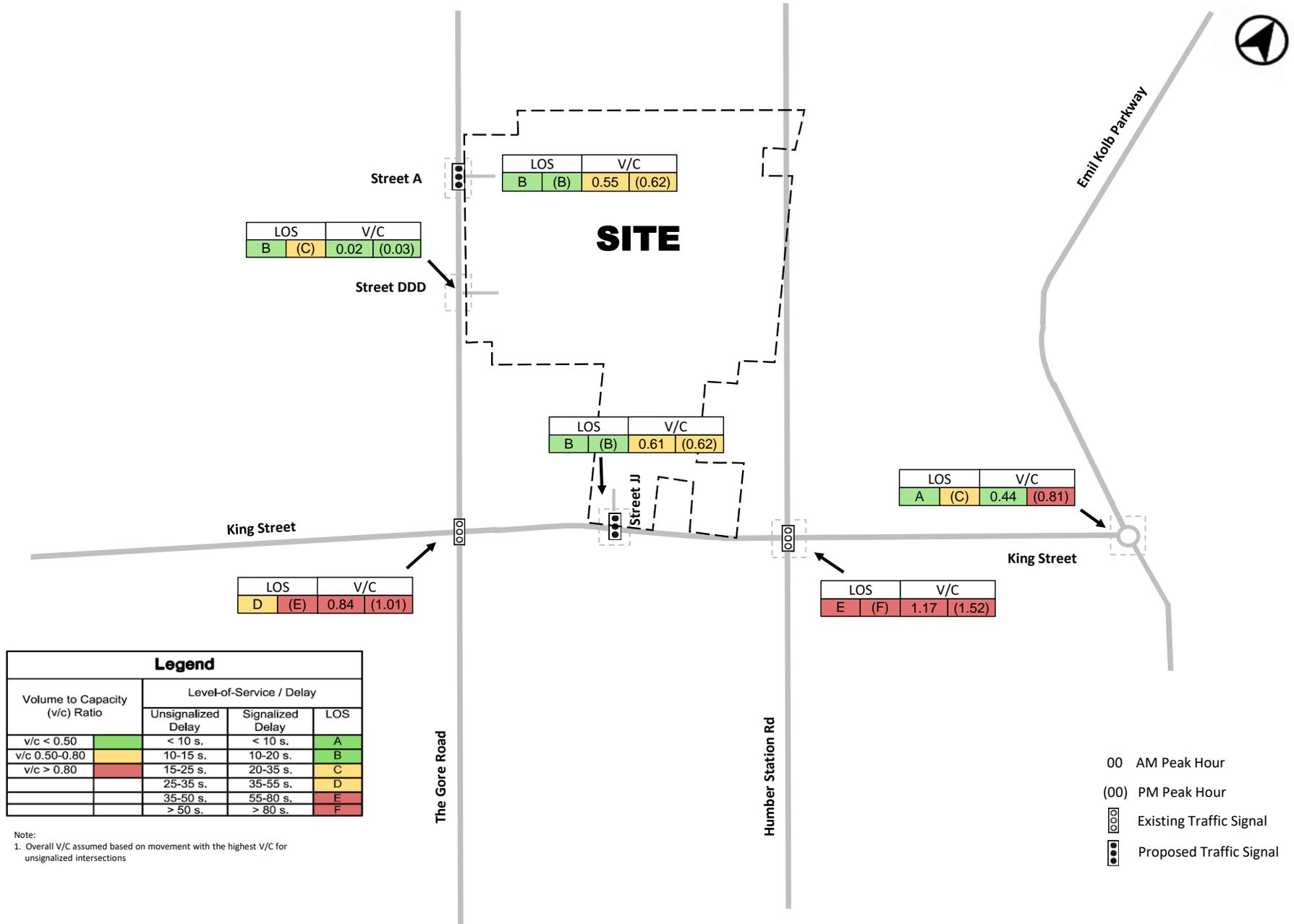


FIGURE 10A FUTURE TOTAL INTERSECTION OPERATIONS - No Improvements

CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

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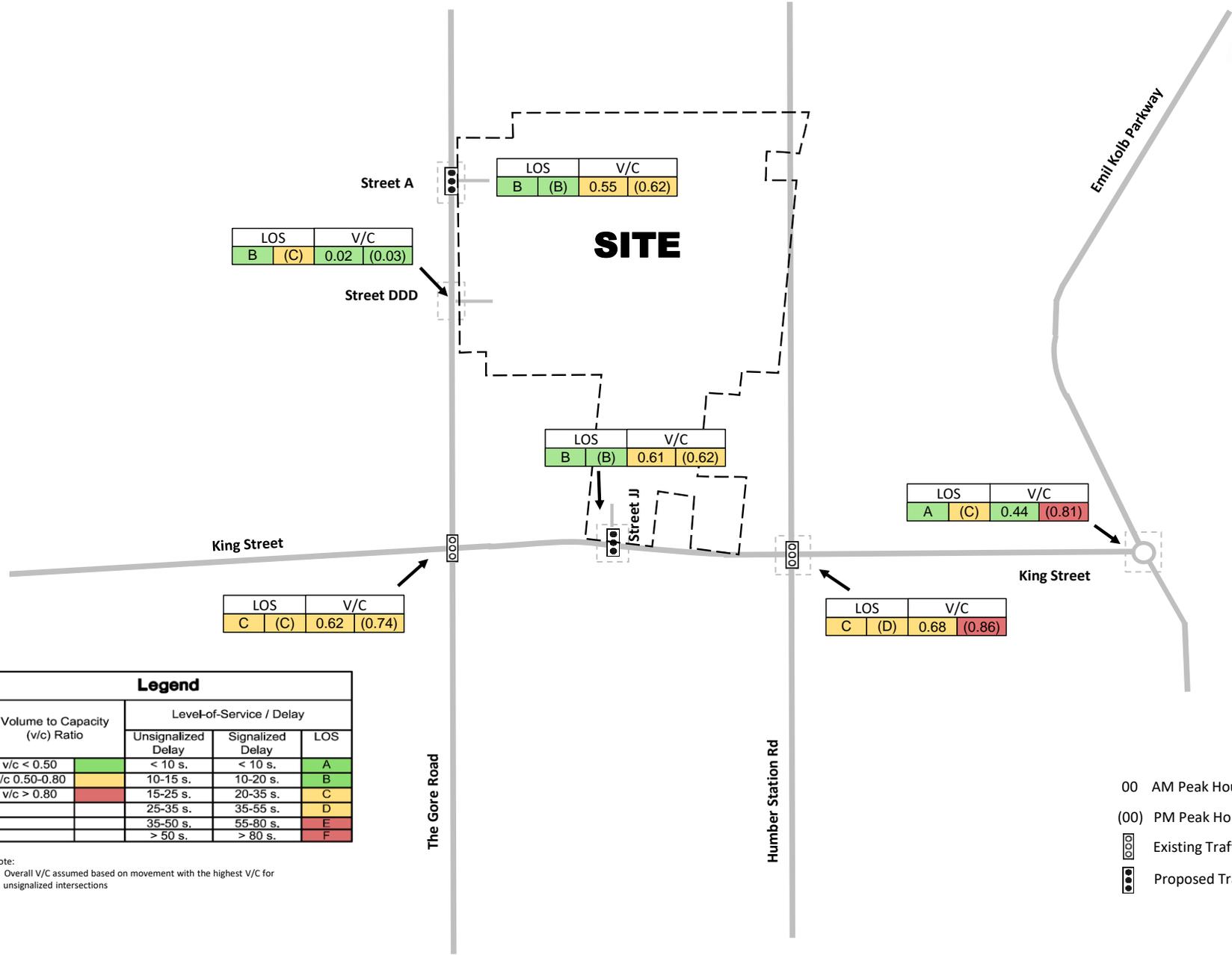


FIGURE 10B FUTURE TOTAL INTERSECTION OPERATIONS - With Improvements

CALEDON STATION SECONDARY PLAN - MACVILLE DRAFT PLAN 2,275 UNITS

6.0 SIGNAL WARRANTS

Signal warrant analyses were undertaken for the proposed signalized intersections along The Gore Road and King Street, and are attached in **Attachment E**. A summary of the signal warrant analyses is provided in **Table 5**.

TABLE 5 SUMMARY OF SIGNAL WARRANT ANALYSES

Intersection	Justified?	Justification
King St / Street JJ	Yes	Justification 4 (4-hour)
The Gore Road / Street A	Yes	Justification 3 (Combination) and Justification 4 (4-hour)

The collector/arterial intersections within the phase assessed are justified for signalization by either Justification 3, or 4. Justification 3 is typically considered only after remedial measures designed to reduce delay have failed and Justification 4 is focussed on (among other characteristics) commuter-dominated roadways – with heavy demands for two or more hours in the AM/PM peaks, but considerably reduced demand for the remainder of the day. The arterial roadways in this study area are representative of commuter dominated activity during the peak periods. Given this study does not represent the Development Staging and Sequencing Plan and is subject to coordination with ongoing RTMP and MMTMP analysis – signal warrants are also recommended to be conducted again for each stage of phasing to determine timing of signal implementation relative to development and area growth.

The Collector / Regional intersections of King Street / Street JJ and The Gore Road / Street A warrant signals under the traffic assessment conducted for 2,275 units low-rise units.

7.0 ON-STREET PARKING SUPPLY

An on-street Parking Supply plan has been provided in Drawing PP-01 in **Attachment F** of this letter for the Subject Lands.

The parking allocation on PP-01 provides an estimate of on-street parking supply based on:

- anticipated areas identified for one-sided on-street parking (as identified by road cross-sections and plan layout);
- typical allocation of on-street parking between side-by-side driveways (see sample calculation in PP-01); and,
- typical allocation of on-street parking along uninterrupted street frontage (see sample calculation in PP-01).

Based on the estimated on-street parking supply, approximately 1,640 on-street parking spaces may be achieved through the DPS, equivalent to 0.72 spaces per low-rise freehold unit (single detached and town lots). Changes to this estimate can reasonably be expected once further details on driveways, hydrants and further services are established.

We expect that mid-rise and mixed-use blocks within the draft Plan of Subdivision will be required to submit a parking supply strategy for their respective land uses and site design as part of their subsequent site plan applications. Mid-rise and mixed-use blocks are expected to accommodate the parking needs of their respective uses 'on-site' or, through the provision of a parking strategy and parking needs assessment at site plan application, demonstrate how they intend to meet estimated demands.

The estimate of 1,640 on-street spaces (approximately 0.72 spaces per low-rise unit) identified on the parking allocation plan indicates there will be excess capacity on-street for the low-rise freehold units being contemplated within the Subject Lands.

8.0 WASTE MANAGEMENT

The road cross-sections proposed as part of the Caledon Station Secondary Plan have pavement widths equal to or exceeding the 7.9 metre local / 5.4 metre laneway identified in the Town of Caledon Standard Design Drawing cross-sections. Given conformance with the Town's standard pavement width, our expectation is that curbside municipal collection for low-rise units throughout the Subject Lands can reasonably be accommodated in a manner consistent with typical Waste Management procedures for a new subdivision.

We expect that mid-rise and mixed-use blocks within the Draft Plan of Subdivision will be required to submit a waste management strategy for their respective land uses and site design as part of their subsequent site plan applications. Mid-rise and mixed-use blocks are expected to accommodate the loading needs of their respective uses 'on-site' or, through the provision of a waste management strategy at site plan application demonstrating how they intend to meet estimated demands.

Road cross-sections are designed to meet or exceed the pavement widths within the Town's municipal design standards within the Secondary Plan area and are expected to receive curbside municipal collection in a manner consistent with typical Waste Management procedures for a new subdivision.

9.0 SUMMARY

The transportation considerations for the Draft Plan of Subdivision for the Subject Lands are as follows:

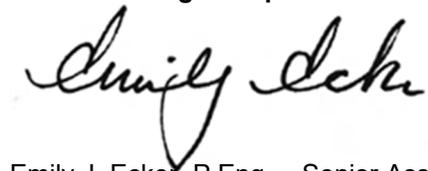
- While Phasing of the Secondary Plan lands is subject to a Development Staging and Sequencing Plan, the following recommended road improvements can acceptably accommodate the estimated traffic for an initial phase of development (2,275 low-rise units):
 - Left turning lanes along The Gore Road at its intersection with Street A;
 - Left turning lanes along King Street at its intersection with Street JJ;
 - Left and right turning lanes at the existing Humber Station Road / King Street intersection (signalized);
 - Right turning lanes at the existing King Street / The Gore Road intersection (signalized);Road improvements also do not exceed, and protect for, the recommended road improvements along Gore Road and at King Street / Humber Station Road that are identified to support full build-out of the Secondary Plan.
- The Collector / Regional intersections of King Street / Street JJ and The Gore Road / Street A warrant signals under the traffic assessment conducted for 2,275 units low-rise units.
- The estimate of 1,640 on-street spaces (approximately 0.72 spaces per low-rise unit) identified on the parking allocation plan indicates there will be excess capacity on-street for the low-rise freehold units being contemplated within the Subject Lands.
- Road cross-sections are designed to meet or exceed the pavement widths within the Town's municipal design standards within the Secondary Plan area and are expected to receive curbside

municipal collection in a manner consistent with typical Waste Management procedures for a new subdivision.

- Roads within the DPS are subject to future detailed design and coordination with area growth related findings of the RTMP and MMTMP studies that are currently underway.
- Transit and active transportation are essential elements to proposed Caledon Station Secondary Plan. As such, we recommend early implementation of bus transit, active transportation facilities to promote and support early adoption of alternative modes of travel.

Sincerely,

BA Consulting Group Ltd.



Emily J. Eckel, P.Eng. – Senior Associate

cc. Scott Gibbons, Luke Richardson, Christie Jeong, Mohebullah Afzali



Attachment A:
Draft Plan of Subdivision



DRAFT PLAN OF SUBDIVISION ARGO MACVILLE I CORPORATION, ARGO MACVILLE II CORPORATION, ARGO MACVILLE V CORPORATION, & ROBERT SPEIRS FILE# 21T-22001

PART OF LOTS 11,12 AND 13,
CONCESSION 4
(TOWNSHIP OF ALBION)
TOWN OF CALEDON
REGIONAL MUNICIPALITY OF PEEL

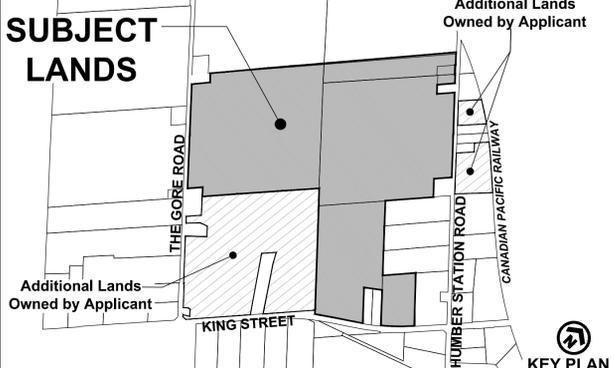
SURVEYORS CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED Brednik DATE: MAY 15, 2023
MONIKA BUDZIAK, OLS
J. D. BARNES LIMITED
EMAIL: mbudziak@jdbarnes.com

ADDITIONAL INFORMATION
(UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G,J & L ARE SHOWN ON THE DRAFT AND KEY PLANS.
H) MUNICIPAL AND PIPED WATER TO BE PROVIDED
I) SANDY LOAM AND CLAY LOAM
K) SANITARY AND STORM SEWERS TO BE PROVIDED

LAND USE SCHEDULE	LAND USE	LOTS / BLOCKS	AREA (ha)	AREA (ac)	UNITS
SINGLE DETACHED - 15.24m (50') (17m DEPTH)			2.05	5.07	76
SINGLE DETACHED - 12.8m (42')			3.47	8.57	91
SINGLE DETACHED - 12.8m (42') (17m DEPTH)			3.34	8.25	146
SINGLE DETACHED - 11.6m (38')		1-580	5.02	12.40	158
SINGLE DETACHED - 11.0m (36')			1.78	4.40	60
SINGLE DETACHED - 10.4m (34')			1.66	4.10	49
BACK-TO-BACK TOWNHOUSES - 6.4m (21')		581-618	3.89	9.61	410
BACK-TO-BACK TOWNHOUSES - 5.6m (18')		619-652	3.21	7.93	388
STREET TOWNHOUSES - 7.6m (25')		653-668	1.25	3.09	52
REAR LANE TOWNHOUSES - 6.05m (20')		669-824	10.68	26.39	815
DUAL FRONTAGE TOWNHOUSES - 6.1m (20')		825-829	0.42	1.04	30
MEDIUM DENSITY RESIDENTIAL		830-845	16.32	40.33	
MIXED USE		846-850	2.17	5.36	
RESIDENTIAL RESERVE		851-886	1.09	2.69	
ELEMENTARY SCHOOL		887-889	5.47	13.52	
PARK		890-904	5.37	13.27	
WALKWAYS		905-907	0.05	0.12	
SWM POND		908	2.09	5.16	
ROAD WIDENING		909-911	0.57	1.41	
0.3m RESERVE			0.06	0.15	
22.0m R.O.W. - (Length - 4.700m)			10.45	25.82	
18.0m R.O.W. - (Length - 12.901m)			23.33	57.65	
16.0m R.O.W. - (Length - 74m)			0.12	0.30	
14.0m R.O.W. - (Length - 500m)			0.70	1.73	
8.0m Laneway - (Length - 3,167m)			2.63	6.50	
TOTAL		952	107.19	264.87	2,275

NOTES
-STREET 'C' / THE GORE ROAD DAYLIGHT TRIANGLE: 15m x 15m
-STREET 'G' / THE GORE ROAD DAYLIGHT TRIANGLE: 15m x 15m
-COLLECTOR / COLLECTOR DAYLIGHT TRIANGLE: 7.5m x 7.5m
-PUBLIC LANE / TO COLLECTOR/LOCAL DAYLIGHT TRIANGLE: 3m x 3m
-LOCAL / COLLECTOR DAYLIGHT ROUNDINGS: 5m
-ALL INTERSECTIONS ARE 90 DEGREES UNLESS OTHERWISE NOTED



Attachment B:
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
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	1523
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)

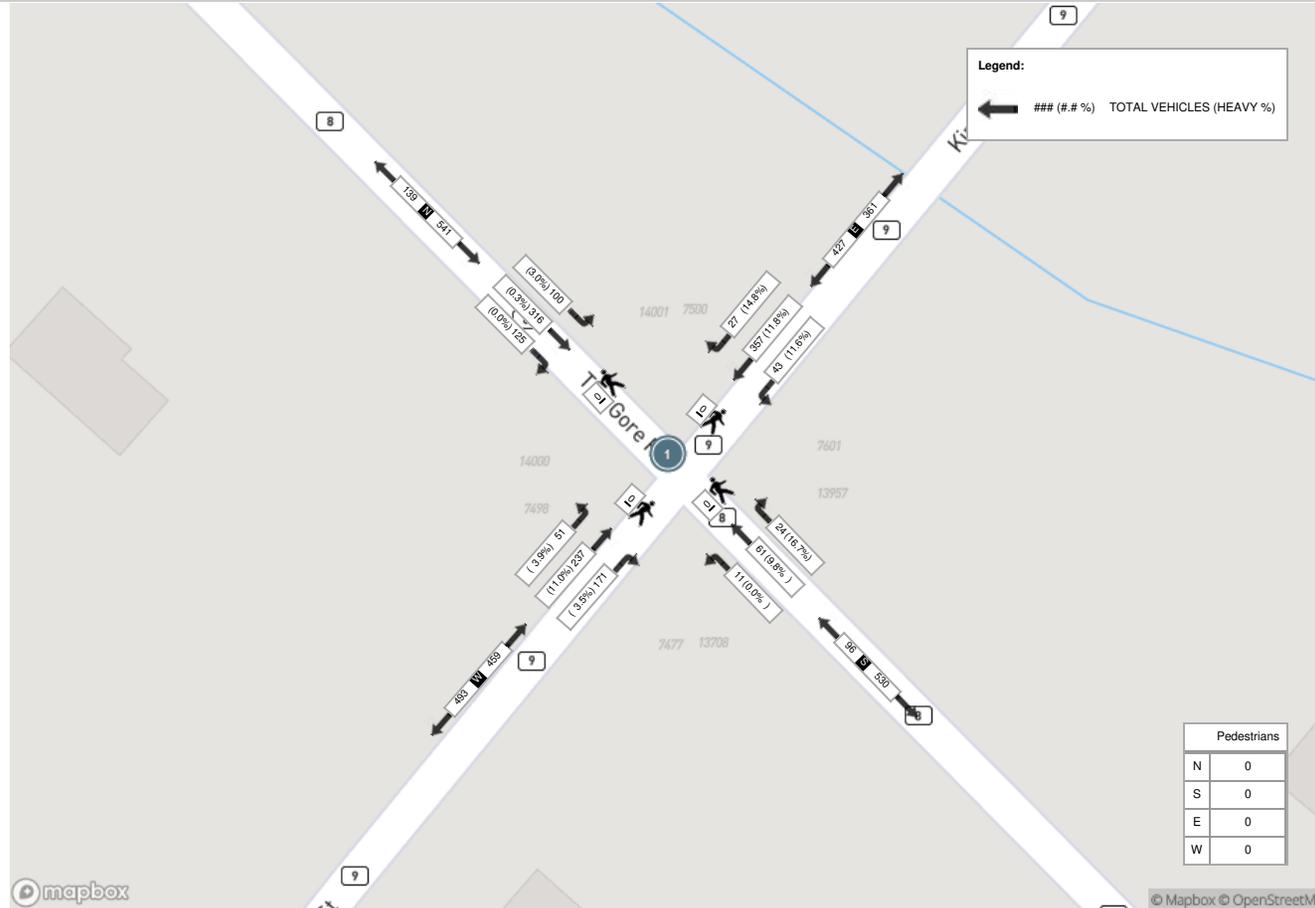
Start Time	N Approach GORE RD						E Approach KING ST						S Approach GORE RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:30:00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

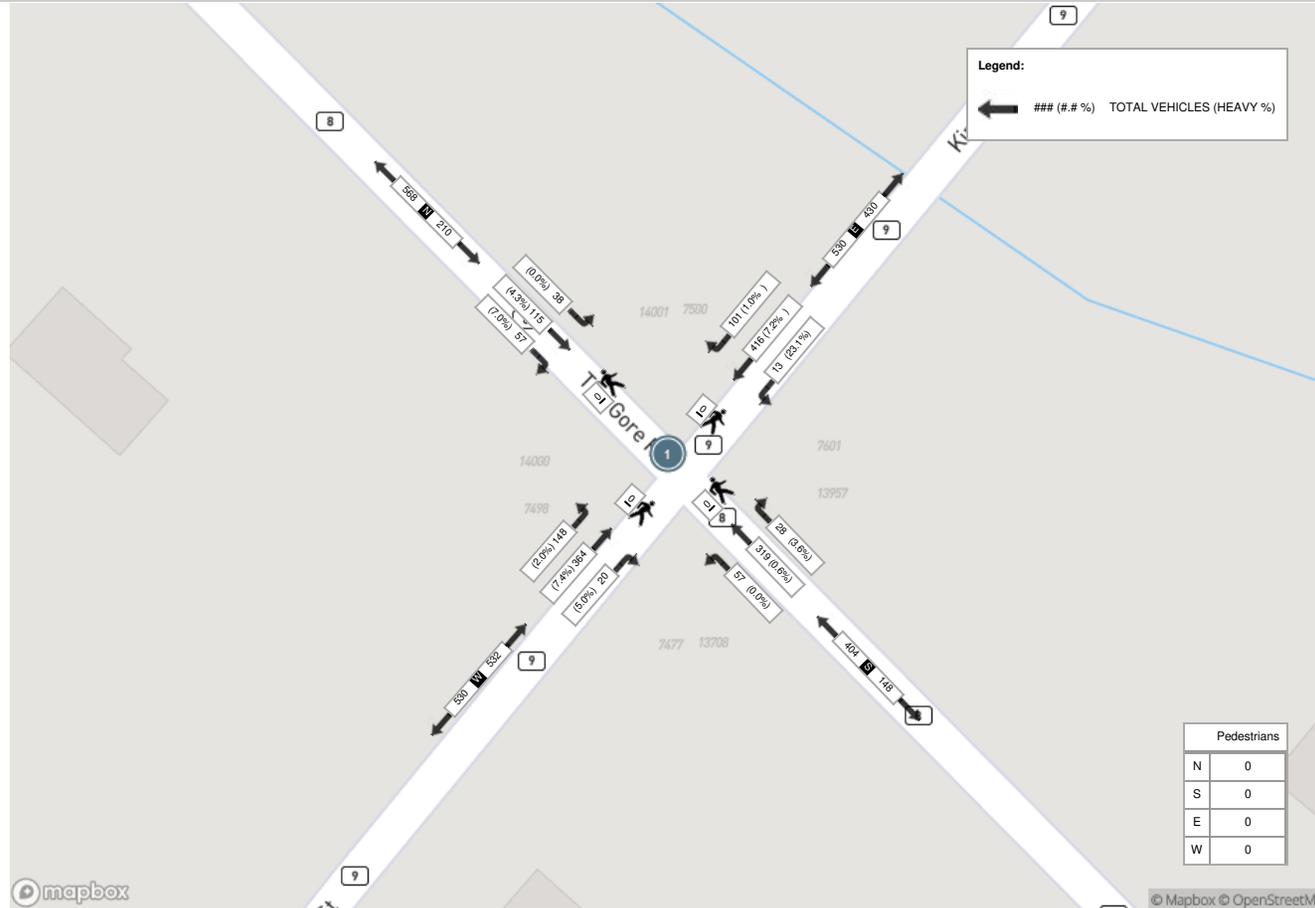
Peak Hour: 07:30 AM - 08:30 AM Weather: Broken Clouds (5.22 °C)



mapbox

© Mapbox © OpenStreetMap

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)

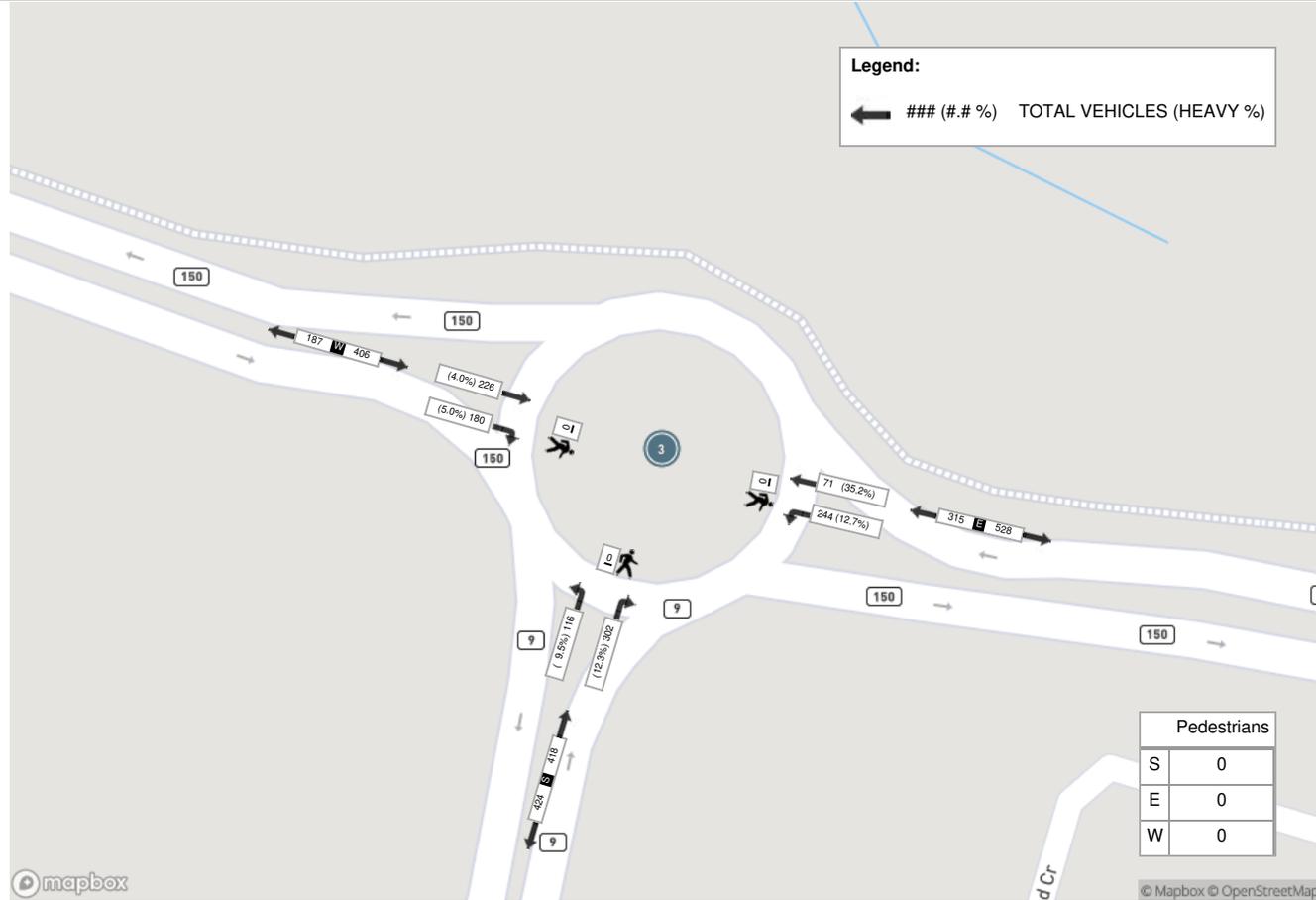
Start Time	E Approach EMIL KOLB PKWY					S Approach KING ST					W Approach EMIL KOLB PKWY				Int. Total (15 min)	
	Thru	Left	UTurn	Peds	Approach Total	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds		Approach Total
07:15:00	12	56	0	0	68	64	17	0	0	81	40	47	0	0	87	236
07:30:00	21	60	0	0	81	80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



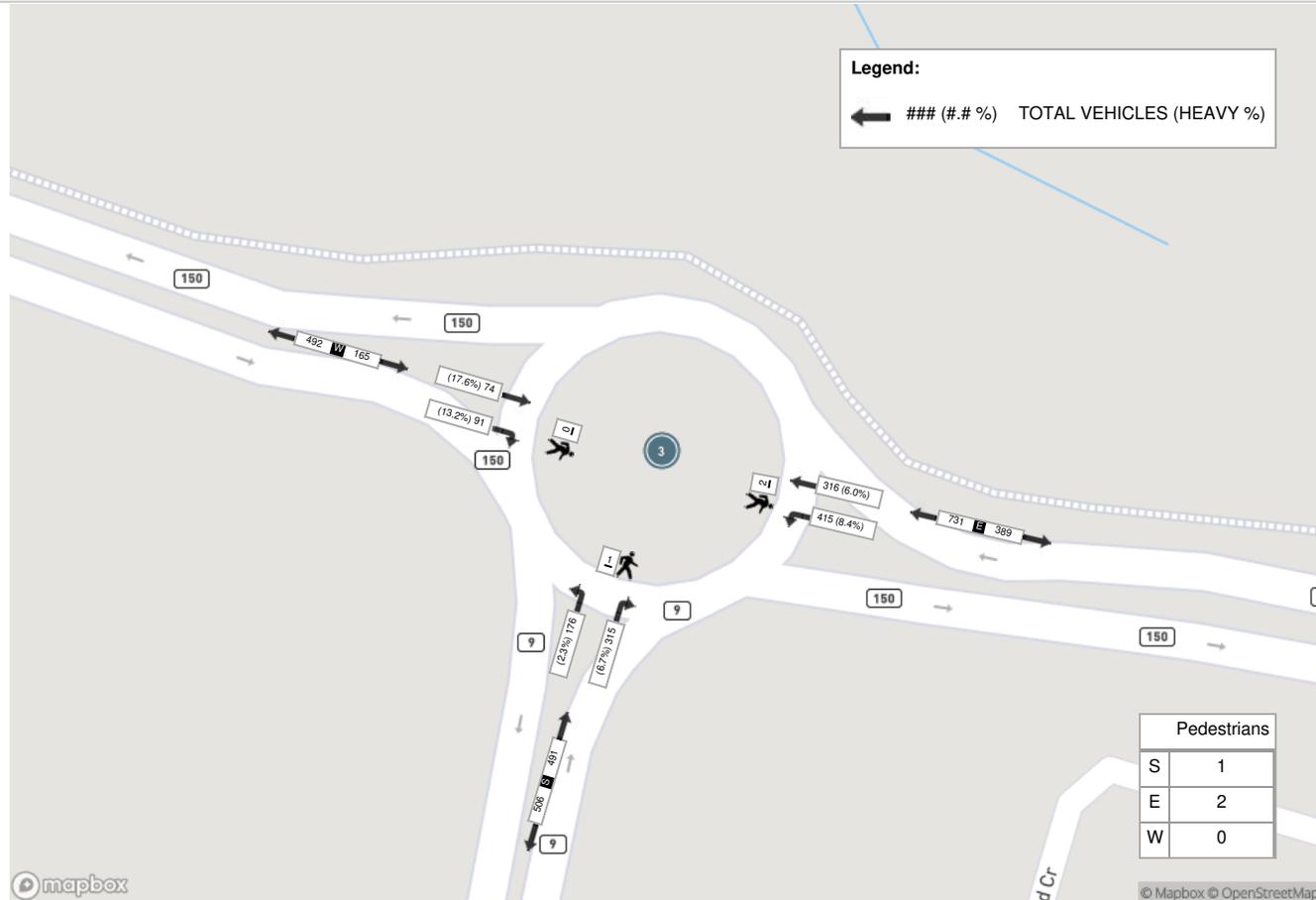
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)

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%	2.6%	38.2%	4%	0%		44.8%	4.1%	3.8%	4.3%	0%		12.2%	5.5%	31.3%	0.7%	0%		37.5%	-	-	
Heavy	8	1	17	0		-	36	104	30	0		-	31	2	38	0		-	24	82	3	0		-	-	-	
Heavy %	22.9%	0.8%	27%	0%		-	34.6%	6.7%	18.3%	0%		-	18.8%	1.3%	21.8%	0%		-	10.7%	6.5%	11.1%	0%		-	-	-	
Bicycles	0	1	0	0		-	0	2	0	0		-	0	1	5	0		-	0	0	0	0		-	-	-	
Bicycle %	0%	0.8%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0.6%	2.9%	0%		-	0%	0%	0%	0%		-	-	-	



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

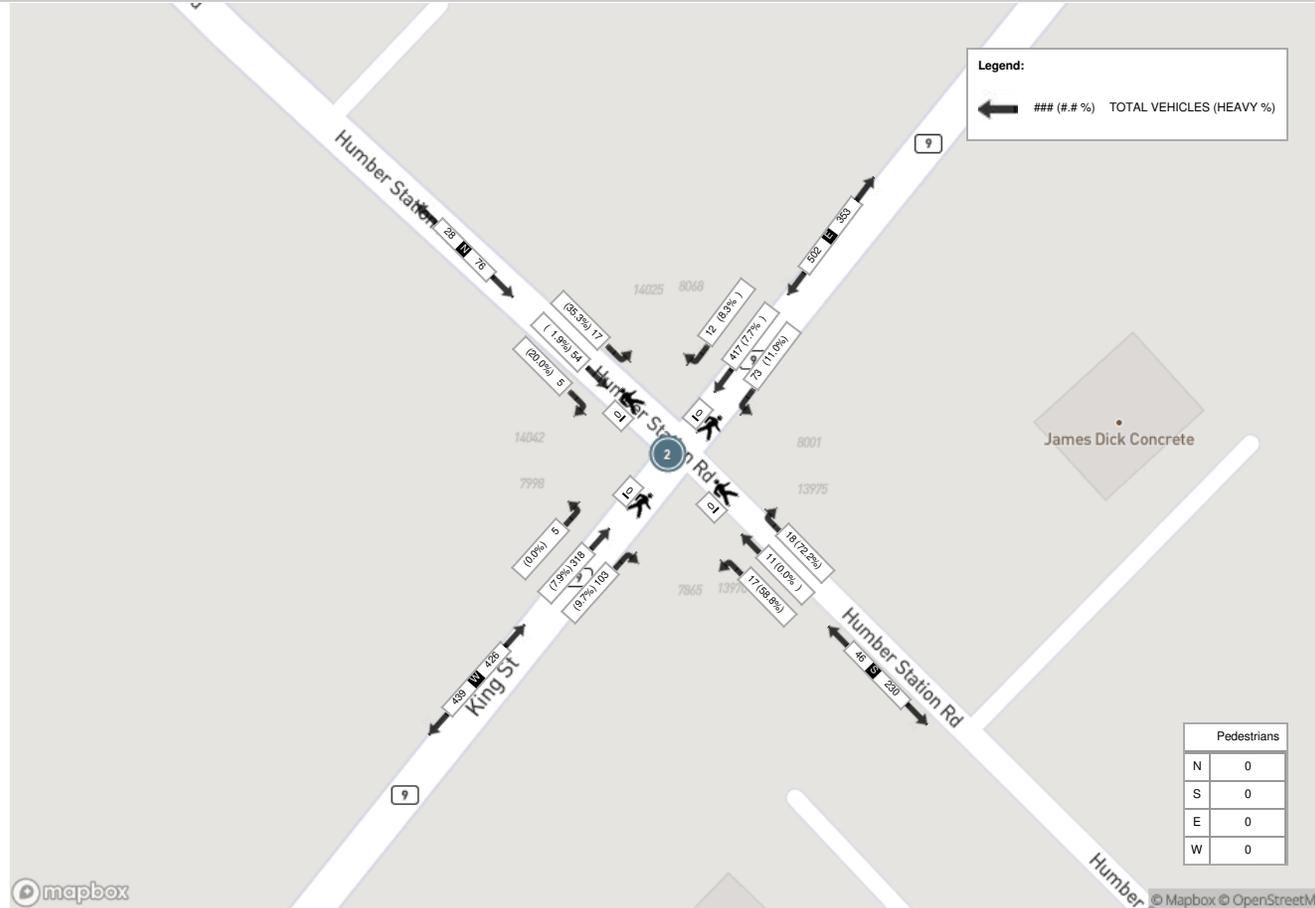
Start Time	N Approach HUMBER STATION RD						E Approach KING ST						S Approach HUMBER STATION RD						W Approach KING ST						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds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



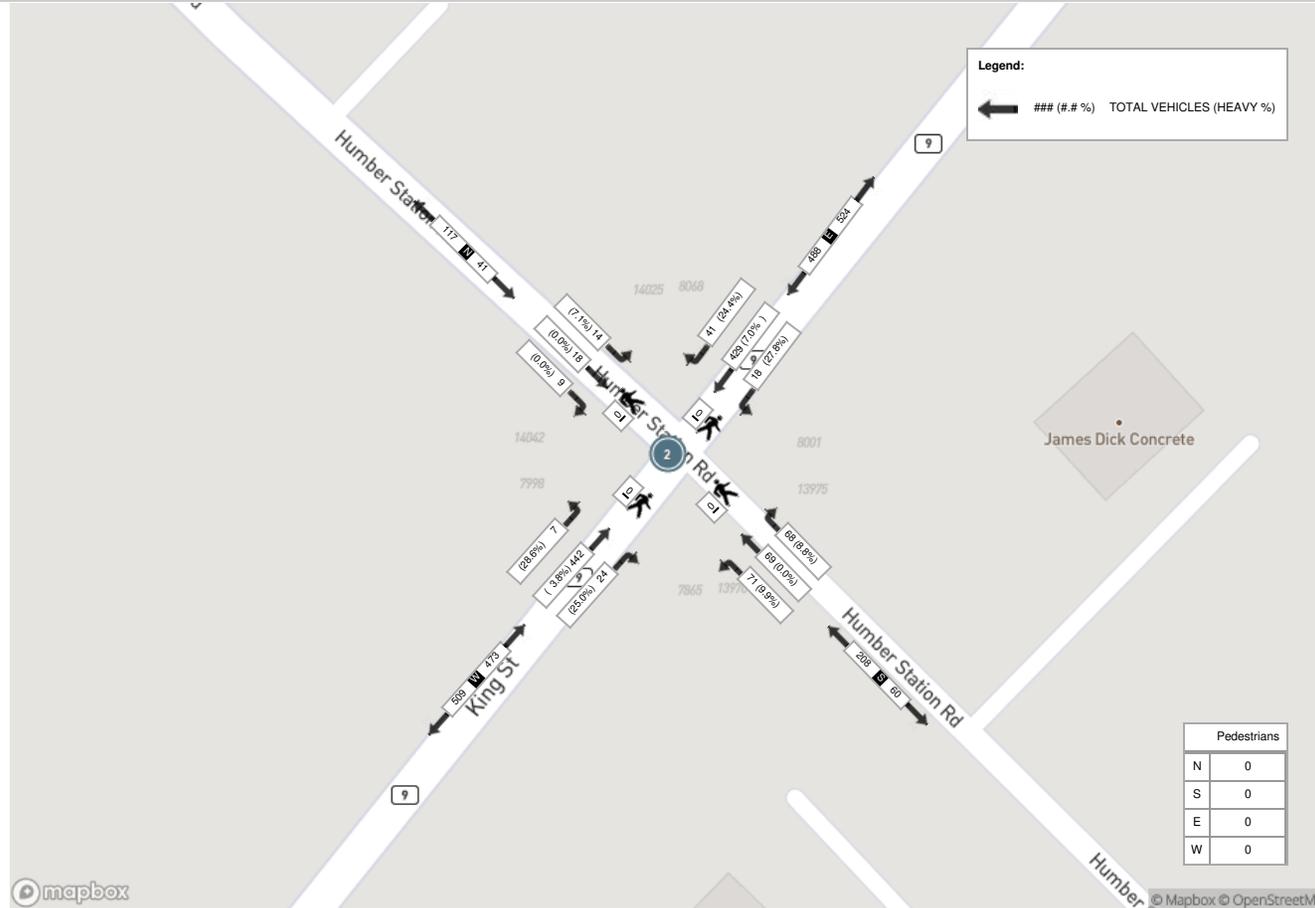
Peak Hour: 04:15 PM - 05:15 PM Weather: Overcast Clouds (16.43 °C)

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)



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



REGIONAL MUNICIPALITY OF PEEL

Traffic Signal Timing Parameters

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

Location **King Street & Humber Station Road**

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

<p>System Control Yes</p> <p>Semi-Actuated Mode Yes</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #e6f2ff;"> <th>TIME (M-F)</th> <th>PEAK</th> <th>CYCLE LENGTH (s)</th> <th>OFFSET (s)</th> </tr> </thead> <tbody> <tr> <td style="background-color: #e6f2ff;">06:00-09:00</td> <td style="background-color: #e6f2ff;">AM</td> <td style="background-color: #e6f2ff;">110</td> <td style="background-color: #e6f2ff;">36</td> </tr> <tr> <td style="background-color: #e6f2ff;">09:00-15:00</td> <td style="background-color: #e6f2ff;">OFF</td> <td style="background-color: #e6f2ff;">70</td> <td style="background-color: #e6f2ff;">36</td> </tr> <tr> <td style="background-color: #e6f2ff;">15:00-19:00</td> <td style="background-color: #e6f2ff;">PM</td> <td style="background-color: #e6f2ff;">80</td> <td style="background-color: #e6f2ff;">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

Attachment C:
Analysis Summary Tables

SIGNALIZED INTERSECTIONS

Movement	Existing Conditions					Future Background without improvements					Future Background with improvements				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St															
EBL	0.12 (0.41)	9.5 (13.1)	A (B)	3.6 (11.0)	10.9 (30.7)	0.13 (0.38)	17.6 (12.3)	B (B)	6.8 (13.0)	17.4 (25.3)	0.11 (0.31)	12.9 (10.1)	B (B)	5.7 (12.2)	15.4 (25.5)
EBT	0.42 (0.40)	12.3 (10.9)	B (B)	29.4 (27.9)	61.1 (57.5)	0.53 (0.42)	23.9 (15.2)	C (B)	67.4 (46.4)	116.0 (92.9)	0.26 (0.39)	14.2 (14.0)	B (B)	31.7 (41.4)	59.2 (90.8)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.01)	12.8 (10.1)	B (B)	0.0 (0.0)	12.3 (0.0)
NBL	0.11 (0.24)	20.6 (22.1)	C (C)	1.3 (6.7)	5.1 (16.1)	0.15 (0.33)	29.7 (37.3)	C (D)	1.9 (11.3)	6.4 (22.8)	0.15 (0.30)	36.2 (37.9)	D (D)	2.1 (11.5)	7.0 (22.1)
NBT	0.13 (0.67)	20.4 (28.1)	C (C)	6.9 (45.6)	16.9 (72.7)	0.15 (0.85)	28.9 (55.3)	C (E)	13.6 (94.1)	23.4 (123.9)	0.15 (0.81)	35.3 (53.1)	D (D)	13.9 (88.3)	23.5 (113.1)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.02)	34.0 (34.5)	C (C)	0.0 (0.0)	0.0 (0.0)
SBL	0.27 (0.21)	21.6 (21.9)	C (C)	11.9 (4.4)	23.9 (12.1)	0.28 (0.46)	30.6 (41.5)	C (D)	18.1 (7.8)	29.1 (19.3)	0.36 (0.44)	38.0 (42.0)	D (D)	20.3 (7.9)	33.2 (18.7)
SBT	0.78 (0.30)	32.2 (22.3)	C (C)	59.2 (16.6)	92.5 (32.1)	0.85 (0.40)	49.0 (37.4)	D (D)	110.7 (35.6)	137.1 (53.5)	0.79 (0.29)	50.5 (37.3)	D (D)	86.8 (27.5)	110.1 (41.0)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.04)	34.7 (34.7)	C (C)	0.0 (0.0)	13.6 (1.3)
WBL	0.09 (0.03)	9.3 (7.7)	A (A)	3.0 (0.8)	9.6 (3.7)	0.10 (0.03)	12.9 (12.8)	B (B)	4.2 (1.1)	11.4 (4.1)	0.07 (0.03)	8.2 (12.3)	A (B)	3.3 (1.1)	9.4 (4.1)
WBT	0.40 (0.52)	12.0 (12.6)	B (B)	31.9 (40.0)	62.6 (81.8)	0.42 (0.62)	16.1 (23.4)	B (C)	55.0 (92.5)	95.1 (146.8)	0.34 (0.48)	10.7 (19.6)	B (B)	40.4 (67.0)	73.1 (119.7)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.07)	7.9 (14.0)	A (B)	0.0 (0.0)	3.6 (9.9)
OVERALL	0.55 (0.57)	19.0 (17.0)	B (B)			0.65 (0.67)	29.8 (30.0)	C (C)			0.48 (0.56)	25.6 (27.2)	C (C)		
Humber Station Rd & King St															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.02)	11.4 (11.0)	B (B)	0.3 (0.5)	2.2 (3.1)
EBT	0.33 (0.52)	5.7 (12.1)	A (B)	25.1 (31.9)	38.6 (72.5)	0.39 (0.45)	7.1 (10.2)	A (B)	28.7 (56.1)	62.4 (102.4)	0.38 (0.48)	16.0 (17.1)	B (B)	31.0 (56.6)	80.1 (130.2)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.08 (0.02)	12.5 (11.3)	B (B)	0.0 (0.0)	7.8 (0.0)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.10 (0.35)	31.4 (36.2)	C (D)	2.9 (13.5)	6.6 (22.2)
NBT	0.21 (0.61)	41.3 (24.7)	D (C)	5.5 (18.7)	16.9 (39.1)	0.17 (0.83)	34.8 (65.7)	C (E)	5.2 (45.9)	14.4 (68.8)	0.07 (0.44)	33.7 (43.0)	C (D)	2.1 (21.6)	9.3 (41.0)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.09 (0.11)	31.6 (43.6)	C (D)	2.9 (2.5)	6.6 (6.6)
SBT	0.35 (0.10)	42.5 (18.1)	D (B)	14.6 (3.0)	29.5 (9.4)	0.29 (0.12)	35.9 (37.0)	D (D)	14.4 (6.4)	25.6 (14.5)	0.19 (0.10)	34.9 (46.1)	C (D)	10.9 (4.2)	20.7 (12.1)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.04)	8.4 (10.3)	A (B)	3.1 (1.4)	13.7 (5.5)
WBT	0.43 (0.52)	6.6 (12.1)	A (B)	35.8 (32.8)	53.5 (74.5)	0.50 (0.46)	8.0 (10.3)	A (B)	39.5 (57.8)	85.0 (105.4)	0.45 (0.44)	14.4 (15.6)	B (B)	29.3 (53.7)	105.8 (121.7)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.01 (0.03)	9.8 (10.8)	A (B)	0.0 (0.0)	0.0 (0.0)
OVERALL	0.41 (0.55)	10.4 (14.5)	B (B)			0.50 (0.60)	10.8 (20.2)	B (C)			0.37 (0.46)	16.5 (20.9)	B (C)		
King St & Street JJ															
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
EBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.29 (0.32)	4.9 (3.7)	A (A)	12.6 (0.0)	50.1 (60.4)	0.29 (0.32)	4.9 (3.7)	A (A)	12.6 (0.0)	50.1 (60.4)
SBLR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
WBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.34 (0.39)	6.1 (2.8)	A (A)	35.2 (0.0)	90.9 (34.8)	0.34 (0.39)	6.1 (2.8)	A (A)	35.2 (0.0)	90.9 (34.8)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
OVERALL	- (-)	- (-)	- (-)			0.29 (0.37)	5.5 (3.2)	A (A)	0.0 (0.0)	0.0 (0.0)	0.29 (0.37)	5.5 (3.2)	A (A)		
The Gore Rd & Street A															
NBTR	- (-)	- (-)	- (-)	- (-)	- (-)	0.11 (0.47)	2.8 (5.1)	A (A)	0.0 (0.0)	19.6 (82.6)	0.11 (0.47)	2.8 (5.1)	A (A)	0.0 (0.0)	19.6 (82.6)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
SBT	- (-)	- (-)	- (-)	- (-)	- (-)	0.45 (0.17)	4.7 (3.0)	A (A)	0.0 (0.0)	89.1 (28.6)	0.45 (0.17)	4.7 (3.0)	A (A)	0.0 (0.0)	89.1 (28.6)
WBLR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)
OVERALL	- (-)	- (-)	- (-)			0.40 (0.42)	4.3 (4.6)	A (A)			0.40 (0.42)	4.3 (4.6)	A (A)		

SIGNALIZED INTERSECTIONS

Movement	Future Total without improvements					Future Total with improvements				
	V/C	Delay (Sec)	LOS	50thQueue	95thQueue	V/C	Delay (Sec)	LOS	50thQueue	95thQueue
The Gore Rd & King St										
EBL	0.29 (0.96)	31.0 (82.1)	C (F)	13.0 (34.3)	26.2 (#83.2)	0.22 (0.59)	23.9 (19.5)	C (B)	10.8 (25.0)	27.4 (42.1)
EBT	0.77 (0.68)	44.3 (34.2)	D (C)	97.1 (94.3)	#148.5 (133.9)	0.38 (0.57)	25.7 (26.6)	C (C)	46.2 (85.0)	85.6 (122.5)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.13 (0.01)	21.9 (17.6)	C (B)	0.0 (0.0)	16.5 (0.0)
NBL	0.21 (0.26)	23.2 (24.3)	C (C)	1.6 (9.2)	6.9 (20.5)	0.15 (0.27)	28.1 (29.8)	C (C)	1.9 (9.9)	6.2 (20.8)
NBT	0.25 (1.01)	21.9 (72.9)	C (E)	23.5 (~186.7)	39.9 (#262.4)	0.18 (0.89)	27.6 (51.5)	C (D)	20.7 (129.1)	30.4 (169.6)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.06 (0.21)	26.3 (28.6)	C (C)	0.0 (8.2)	8.9 (23.6)
SBL	0.23 (0.66)	21.9 (52.4)	C (D)	14.5 (7.4)	26.9 (#28.4)	0.27 (0.59)	28.7 (46.9)	C (D)	17.5 (7.5)	27.7 (#24.7)
SBT	0.93 (0.46)	49.5 (26.6)	D (C)	154.9 (57.8)	#231.4 (85.4)	0.82 (0.39)	43.9 (30.7)	D (C)	120.9 (45.4)	143.5 (65.1)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.19 (0.07)	27.7 (27.1)	C (C)	7.7 (0.0)	21.2 (9.1)
WBL	0.53 (0.32)	23.9 (24.8)	C (C)	22.0 (10.9)	36.3 (20.2)	0.30 (0.23)	14.6 (18.2)	B (B)	17.2 (9.6)	34.5 (19.0)
WBT	0.59 (0.98)	27.2 (70.1)	C (E)	87.2 (140.0)	123.9 (#216.0)	0.46 (0.66)	18.2 (32.6)	B (C)	63.9 (99.8)	109.4 (146.5)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.02 (0.07)	12.6 (21.2)	B (C)	0.0 (0.0)	4.5 (10.9)
OVERALL	0.84 (1.01)	37.3 (56.3)	D (E)			0.62 (0.74)	27.8 (33.1)	C (C)		
Humber Station Rd & King St										
EBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.12 (0.49)	16.0 (23.8)	B (C)	3.5 (11.8)	8.8 (20.8)
EBT	1.07 (1.45)	80.2 (244.2)	F (F)	~182.5 (~276.0)	#256.4 (#353.7)	0.69 (0.76)	28.9 (33.8)	C (C)	87.0 (108.0)	128.9 (177.4)
EBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.34 (0.09)	21.1 (18.8)	C (B)	18.9 (0.0)	41.6 (7.3)
NBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.37 (0.66)	30.5 (34.7)	C (C)	8.4 (28.5)	17.5 (48.8)
NBT	0.42 (1.34)	23.5 (203.9)	C (F)	22.9 (~191.0)	42.0 (#262.4)	0.29 (0.94)	34.9 (69.4)	C (E)	16.4 (100.3)	28.8 (#161.3)
NBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.0 (0.0)	0.0 (0.0)
SBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.61 (0.77)	29.1 (54.0)	C (D)	26.8 (18.5)	44.5 (#46.2)
SBT	1.05 (0.92)	86.5 (62.8)	F (E)	~103.1 (71.2)	#165.5 (#129.9)	0.70 (0.51)	39.7 (41.2)	D (D)	52.5 (41.0)	78.9 (66.0)
SBR	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	- (-)	0.0 (0.0)	0.0 (0.0)
WBL	- (-)	- (-)	- (-)	- (-)	- (-)	0.24 (0.08)	15.7 (21.3)	B (C)	6.6 (2.0)	14.1 (5.6)
WBT	0.97 (1.08)	52.9 (85.3)	D (F)	123.8 (~247.2)	#203.8 (#326.9)	0.65 (0.87)	26.4 (44.7)	C (D)	84.3 (145.6)	128.4 (#213.0)
WBR	- (-)	- (-)	- (-)	- (-)	- (-)	0.05 (0.26)	16.5 (24.0)	B (C)	0.0 (14.2)	2.1 (33.0)
OVERALL	1.17 (1.52)	68.7 (158.8)	E (F)			0.68 (0.86)	28.0 (41.9)	C (D)		
King St & Street JJ										
EBL	0.09 (0.23)	9.9 (8.4)	A (A)	2.7 (5.6)	9.1 (13.2)	0.09 (0.23)	9.9 (8.4)	A (A)	2.7 (5.6)	9.1 (13.2)
EBT	0.41 (0.45)	12.6 (8.9)	B (A)	41.8 (48.6)	77.3 (86.0)	0.41 (0.45)	12.6 (8.9)	B (A)	41.8 (48.6)	77.3 (86.0)
SBLR	0.81 (0.77)	38.0 (47.2)	D (D)	69.5 (51.8)	93.0 (75.4)	0.81 (0.77)	38.0 (47.2)	D (D)	69.5 (51.8)	93.0 (75.4)
WBT	0.50 (0.57)	10.7 (14.9)	B (B)	63.3 (77.8)	112.5 (60.5)	0.50 (0.57)	8.8 (14.9)	A (B)	58.5 (77.8)	105.4 (60.5)
WBR	0.10 (0.30)	7.2 (13.3)	A (B)	6.4 (14.1)	12.8 (24.2)	0.10 (0.30)	5.4 (13.3)	A (B)	6.1 (14.1)	9.4 (24.2)
OVERALL	0.61 (0.62)	18.9 (17.5)	B (B)	0.0 (0.0)	0.0 (0.0)	0.61 (0.62)	18.1 (17.5)	B (B)		
The Gore Rd & Street A										
NBTR	0.17 (0.63)	8.3 (9.3)	A (A)	11.2 (60.9)	42.4 (119.8)	0.17 (0.63)	8.3 (9.3)	A (A)	11.2 (60.9)	42.4 (119.8)
SBL	0.01 (0.09)	4.7 (4.5)	A (A)	0.5 (1.4)	2.4 (5.9)	0.01 (0.09)	4.7 (4.5)	A (A)	0.5 (1.4)	2.4 (5.9)
SBT	0.51 (0.19)	8.6 (4.6)	A (A)	49.8 (12.2)	92.8 (28.6)	0.51 (0.19)	8.6 (4.6)	A (A)	49.8 (12.2)	92.8 (28.6)
WBLR	0.70 (0.57)	40.4 (38.2)	D (D)	39.4 (26.6)	58.9 (41.2)	0.70 (0.57)	40.4 (38.2)	D (D)	39.4 (26.6)	58.9 (41.2)
OVERALL	0.55 (0.62)	15.3 (11.9)	B (B)	0.0 (0.0)	0.0 (0.0)	0.55 (0.62)	15.3 (11.9)	B (B)		

UNSIGNALIZED INTERSECTIONS

Movement	Future Total without improvements				Future Total with improvements			
	LOS	95thQueue	LOS	95thQueue	V/C	Delay	LOS	95thQueue
<i>The Gore Rd & Street DDD</i>								
WBR	0.02 (0.03)	10.50 (10.00)	B (C)	0.50 (0.80)	0.02 (0.03)	10.50 (10.00)	B (C)	0.50 (0.80)

ROUNDAABOUT ANALYSIS- EMIL KOLB & KING STREET

Movement	Scenario: Existing Conditions					Phase 1 Future bacground 2031					Phase 1 Future Total 2031				
	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue	V/C	Delay	LOS	50thQueue	95thQueue
<i>King St & Emil Kolb Parkway</i>															
EB	0.25 (0.28)	3.9 (3.7)	A (A)	3.8 (3.0)	12.8 (12.0)	0.25 (0.29)	3.4 (3.5)	A (A)	3.0 (3.0)	7.5 (11.3)	0.44 (0.40)	4.7 (4.1)	A (A)	8.3 (6.0)	22.5 (23.3)
NB	0.26 (0.50)	4.5 (5.5)	A (A)	3.8 (8.3)	12.0 (24.0)	0.26 (0.51)	4.0 (5.0)	A (A)	3.0 (8.3)	14.3 (27.0)	0.38 (0.81)	5.5 (13.3)	A (B)	6.8 (29.3)	24.8 (84.0)
SB	0.24 (0.12)	3.6 (3.9)	A (A)	4.5 (1.5)	12.8 (8.3)	0.25 (0.12)	3.4 (3.3)	A (A)	2.3 (0.8)	7.5 (7.5)	0.30 (0.22)	4.2 (4.7)	A (A)	4.5 (3.0)	16.5 (11.3)
Overall	0.26 (0.50)	4.0 (4.7)	A (A)			0.26 (0.51)	3.6 (4.3)	A (A)			0.44 (0.81)	4.8 (9.0)	A (A)		

Attachment D:
Analysis Worksheet Output

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

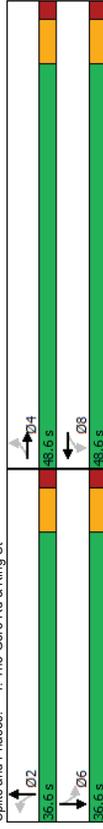
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Lane Width (m)	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	135.0	0	0	140.0	0	0	200.0	0	0	175.0	0	0
Storage Lanes	1	0	0	1	0	0	1	0	0	1	0	0
Taper Length (m)	7.5	0	0	20.0	0	0	7.5	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
Pad Bike Factor												
Frt	0.937			0.989			0.958			0.957		
Frt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1580	1681	0	1700	1788	0	1275	1770	0	1700	1839	0
Frt Permitted	0.493			0.472			0.289			0.702		
Satd. Flow (perm)	820	1681	0	845	1788	0	348	1770	0	1256	1839	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)	60			6			24			26		
Link Speed (k/h)	50			50			50			50		
Link Distance (m)	363.2			560.5			628.5			762.7		
Travel Time (s)	26.2			40.4			45.3			54.9		
Intersection Summary												
Area Type: Other												

Timings
1: The Gore Rd & King St

05-15-2023

	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	51	237	43	357	11	61	100	316				
Traffic Volume (vph)	51	237	43	357	11	61	100	316				
Future Volume (vph)	Perm	NA										
Turn Type	4	8	8	2	2	2	6	6				
Permitted Phases	4	8	8	2	2	2	6	6				
Detector Phase	4	8	8	2	2	2	6	6				
Switch Phase	4	8	8	2	2	2	6	6				
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)	26.6	26.6	26.6	26.6	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	48.6	48.6	36.6	36.6	36.6	36.6	36.6	36.6
Total Split (%)	57.0%	57.0%	57.0%	57.0%	57.0%	57.0%	43.0%	43.0%	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	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	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	6.6	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	Max	Max	Min	Min	Min	Min	Min	Min
Act Effct Green (s)	42.1	42.1	42.1	42.1	42.1	42.1	23.2	23.2	23.2	23.2	23.2	23.2
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	0.54	0.30	0.30	0.30	0.30	0.30	0.30
v/c Ratio	0.12	0.44	0.09	0.40	0.11	0.16	0.27	0.79				
Control Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7				
LOS	B	B	B	B	C	B	C	B	C	B	C	C
Approach Delay	11.8	12.9	12.9	16.5	16.5	16.5	32.5					
Approach LOS	B	B	B	B	B	B	C					
Intersection Summary												
Cycle Length: 85.2												
Actuated Cycle Length: 78.5												
Natural Cycle: 35												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.79												
Intersection Signal Delay: 19.7												
Intersection Capacity Utilization 67.8%												
Analysis Period (min) 15												

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



	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	51	408	43	384	11	85	100	441
Lane Group Flow (vph)	0.12	0.44	0.09	0.40	0.11	0.16	0.27	0.79
v/c Ratio	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	11.3	11.9	11.1	13.0	22.2	15.8	22.9	34.7
Total Delay	3.6	29.4	3.0	31.9	1.3	6.9	11.9	59.2
Queue Length 50th (m)	10.9	61.1	9.6	62.6	5.1	16.9	23.9	92.5
Queue Length 95th (m)	339.2		536.5		604.5		738.7	
Internal Link Dist (m)	135.0	140.0		200.0		175.0		
Turn Bay Length (m)	439	929	453	951	133	692	481	720
Base Capacity (vph)	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.44	0.09	0.40	0.08	0.12	0.21	0.61

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB	
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 (vphpb)	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	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	
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)	1580	1682		1700	1769		1275	1770		1700	1839		
Flt Permitted	0.49	1.00		0.47	1.00		0.26	1.00		0.70	1.00		
Satd. Flow (perm)	819	1682		845	1769		348	1770		1256	1839		
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	51	237	171	43	357	27	11	61	24	100	316	125	
RTOR Reduction (vph)	0	28	0	0	3	0	0	17	0	0	18	0	
Lane Group Flow (vph)	51	380	0	43	381	0	11	68	0	100	423	0	
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		8		2		2		6		
Permitted Phases	4		8		8		2		2		6		
Actuated Green, G (s)	42.1	42.1	42.1	42.1	42.1	42.1	23.2	23.2	23.2	23.2	23.2	23.2	
Effective Green, g (s)	42.1	42.1	42.1	42.1	42.1	42.1	23.2	23.2	23.2	23.2	23.2	23.2	
Actuated g/C Ratio	0.54	0.54	0.54	0.54	0.54	0.54	0.30	0.30	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	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)	439	902	453	948	102	523				371	543		
v/s Ratio Prot	c0.23		0.22		0.22		0.04			0.08		c0.23	
v/c Ratio Perm	0.06		0.05		0.05		0.03			0.08		0.08	
v/c Ratio	0.12	0.42	0.09	0.40	0.11	0.13				0.27		0.78	
Uniform Delay, d1	9.0	10.9	8.9	10.8	20.1	20.3				21.2		25.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.5	1.4	0.4	1.3	0.5	0.1				0.4		6.9	
Delay (s)	9.5	12.3	9.3	12.0	20.6	20.4				21.6		32.2	
Level of Service	A	B	A	B	C	C				C		C	
Approach Delay (s)	12.0		11.8		20.4					30.3			
Approach LOS	B		B		C					C			
Intersection Summary													
HCM 2000 Control Delay	19.0											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55												
Actuated Cycle Length (s)	78.5											Sum of lost time (s)	13.2
Intersection Capacity Utilization	67.8%											ICU Level of Service	C
Analysis Period (min)	15												
c Critical Lane Group													

Lanes and Geometrics

2: Humber Station Rd & King St

05-15-2023

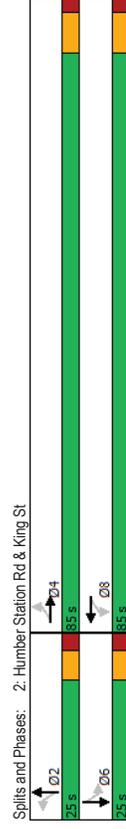
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
Lane Width (m)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Grade (%)	10.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Storage Length (m)	0	0	0	0	0	0	0	0	0	0	0
Storage Lanes	15.0	0	0	0	0	0	0	0	0	0	0
Taper Length (m)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.967	0.997	0.997	0.997	0.997	0.997	0.947	0.947	0.991	0.991	0.991
Flt Protected	0.999	0.993	0.993	0.993	0.993	0.993	0.982	0.982	0.989	0.989	0.989
Satd. Flow (prot)	0	1720	0	0	1816	0	0	1211	0	0	1627
Flt Permitted	0.995	0.880	0.880	0.880	0.880	0.880	0.867	0.867	0.921	0.921	0.921
Satd. Flow (perm)	0	1713	0	0	1609	0	0	1069	0	0	1515
Right Turn on Red	Yes										
Satd. Flow (RTOR)	35	3	3	3	3	3	18	18	3	3	3
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	342.4	840.4	840.4	840.4	840.4	840.4	348.4	348.4	799.7	799.7	799.7
Travel Time (s)	24.7	60.5	60.5	60.5	60.5	60.5	25.1	25.1	53.3	53.3	53.3
Intersection Summary											
Area Type: Other											

Timings

2: Humber Station Rd & King St

05-15-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	5	318	73	417	17	11	17	11	17	54	54
Traffic Volume (vph)	5	318	73	417	17	11	17	11	17	54	54
Future Volume (vph)	Perm	NA	Perm	NA	Perm	NA	Perm	NA	Perm	NA	NA
Turn Type	4	8	8	8	2	2	8	2	2	6	6
Protected Phases	4	8	8	8	2	2	8	2	2	6	6
Detector Phases	4	4	4	4	8	8	2	2	2	6	6
Switch Phase	5.0	5.0	5.0	5.0	14.4	14.4	14.4	14.4	14.4	14.4	14.4
Minimum Initial (s)	22.4	22.4	22.4	22.4	21.4	21.4	21.4	21.4	21.4	21.4	21.4
Minimum Split (s)	85.0	85.0	85.0	85.0	25.0	25.0	25.0	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%	22.7%	22.7%	22.7%
Total Split (s)	5.4	5.4	5.4	5.4	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Yellow Time (s)	2.0	2.0	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.4	2.4
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	7.4	7.4	7.4	7.4	6.4	6.4	6.4	6.4	6.4	6.4	6.4
Total Lost Time (s)	Lead/Lag										
Lead/Lag	Recall Mode										
Lead-Lag Optimize?	Max	Max	Max	Max	Min						
Act Effct Green (s)	77.6	77.6	77.6	77.6	14.5	14.5	14.5	14.5	14.5	14.5	14.5
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.14	0.14	0.14	0.14	0.14	0.14	0.14
v/c Ratio	0.34	0.34	0.34	0.34	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Control Delay	5.4	5.4	5.4	5.4	33.3	33.3	33.3	33.3	33.3	33.3	33.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.4	5.4	5.4	5.4	33.3	33.3	33.3	33.3	33.3	33.3	33.3
LOS	A	A	A	A	C	C	C	C	C	C	C
Approach Delay	5.4	5.4	5.4	5.4	33.3	33.3	33.3	33.3	33.3	33.3	33.3
Approach LOS	A	A	A	A	C	C	C	C	C	C	C
Intersection Summary											
Cycle Length: 110											
Actuated Cycle Length: 105.9											
Natural Cycle: 35											
Control Type: Semi Act-Uncoord											
Maximum v/c Ratio: 0.43											
Intersection Signal Delay: 10.2											
Intersection Capacity Utilization: 79.7%											
Analysis Period (min): 15											



	EBT	WBT	NBT	SBT
Lane Group	426	502	46	76
Lane Group Flow (vph)	0.34	0.43	0.29	0.36
v/c Ratio	5.4	6.8	33.3	45.4
Control Delay	0.0	0.0	0.0	0.0
Queue Delay	5.4	6.8	33.3	45.4
Total Delay	25.1	35.8	5.5	14.6
Queue Length 50th (m)	38.6	53.5	16.9	29.5
Queue Length 95th (m)	318.4	816.4	324.4	715.7
Internal Link Dist (m)				
Turn Bay Length (m)	1264	1179	202	268
Base Capacity (vph)	0	0	0	0
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.34	0.43	0.23	0.28

Intersection Summary

Protected Phases	4	8	8	2	6
Permitted Phases	4	8	8	2	6
Actuated Green, G (s)	77.6	77.6	77.6	14.5	14.5
Effective Green, g (s)	77.6	77.6	77.6	14.5	14.5
Actuated g/C Ratio	0.73	0.73	0.73	0.14	0.14
Clearance Time (s)	7.4	7.4	7.4	6.4	6.4
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1255	1179	146	207	207
v/s Ratio Prot	0.24	c0.31	0.03	c0.05	c0.05
v/c Ratio Perm	0.33	0.43	0.21	0.35	0.35
Uniform Delay, d1	5.0	5.5	40.6	41.5	41.5
Progression Factor	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.7	1.1	0.7	1.0	1.0
Delay (s)	5.7	6.6	41.3	42.5	42.5
Level of Service	A	A	D	D	D
Approach Delay (s)	5.7	6.6	41.3	42.5	42.5
Approach LOS	A	A	D	D	D

Intersection Summary

HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	105.9	Sum of lost time (s)	13.8
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

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

Intersection Summary

HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	105.9	Sum of lost time (s)	13.8
Intersection Capacity Utilization	78.7%	ICU Level of Service	D
Analysis Period (min)	15		

Lanes and Geometrics
1: The Gore Rd & King St

05-15-2023

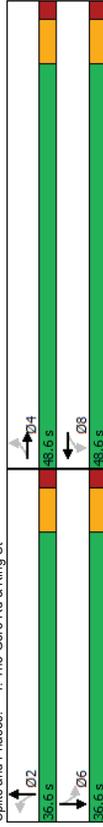
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	364	364	364	364	364	364	364	364	364	364	364	364
Lane Width (m)	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7	3.5	3.7	3.7
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	135.0	0	0	140.0	0	0	200.0	0	0	175.0	0	0
Storage Lanes	1	0	0	1	0	0	1	0	0	1	0	0
Taper Length (m)	7.5	0	0	20.0	0	0	7.5	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
Pad Bike Factor												
Frt	0.992			0.971			0.988			0.950		0.950
Flt Protected	0.950			0.950			0.950			0.950		0.950
Satd. Flow (prot)	1580	1738	0	1700	1753	0	1275	1877	0	1700	1825	1825
Flt Permitted	0.394			0.502			0.649			0.375		0.375
Satd. Flow (perm)	655	1738	0	898	1753	0	871	1877	0	671	1825	1825
Right Turn on Red			Yes			Yes			Yes		Yes	Yes
Satd. Flow (RTOR)		5		20			6			32		32
Link Speed (k/h)		50					50			50		50
Link Distance (m)		363.2		560.5			628.5			762.7		762.7
Travel Time (s)		26.2		40.4			45.3			54.9		54.9
Intersection Summary												
Area Type: Other												

Timings
1: The Gore Rd & King St

05-15-2023

	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	148	364	13	416	57	319	38	115				
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										
Protected Phases	4			8			2			6		
Permitted Phases	4	8	8	8	8	2	2	2	2	6	6	6
Detector Phase												
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	18.6	18.6	18.6	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	26.6	26.6	26.6	26.6
Total Split (s)	48.6	48.6	48.6	48.6	48.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6
Total Split (%)	57.0%	57.0%	57.0%	57.0%	57.0%	43.0%	43.0%	43.0%	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	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	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	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode												
Act Effct Green (s)	42.1	42.1	42.1	42.1	42.1	20.6	20.6	20.6	20.6	20.6	20.6	20.6
Actuated g/C Ratio	0.55	0.55	0.55	0.55	0.55	0.27	0.27	0.27	0.27	0.27	0.27	0.27
v/c Ratio	0.41	0.40	0.03	0.53	0.24	0.68	0.21	0.33				
Control Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6				
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Total Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6				
LOS	B	B	A	B	C	C	C	C	B	C	B	B
Approach Delay		12.5		13.1		30.4		20.4				
Approach LOS		B		B		C		C				
Intersection Summary												
Cycle Length: 85.2												
Actuated Cycle Length: 75.9												
Natural Cycle: 60												
Control Type: Semi Act-Uncoord												
Maximum v/c Ratio: 0.68												
Intersection Signal Delay: 18.0												
Intersection Capacity Utilization 92.2%												
Analysis Period (min) 15												

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



	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	148	384	13	517	57	347	38	172
v/c Ratio	0.41	0.40	0.03	0.53	0.24	0.68	0.21	0.33
Control Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	11.6	9.0	13.2	24.2	31.5	24.3	19.6
Queue Length 50th (m)	11.0	27.9	0.8	40.0	6.7	45.6	4.4	16.6
Queue Length 95th (m)	30.7	57.5	3.7	81.8	16.1	72.7	12.1	32.1
Internal Link Dist (m)	339.2			536.5		604.5		738.7
Turn Bay Length (m)	135.0		140.0		200.0		175.0	
Base Capacity (vph)	362	965	497	980	345	746	265	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.40	0.03	0.53	0.17	0.47	0.14	0.23

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
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 (vph/b)	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	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	
Flt	1.00	0.99		1.00	0.97		1.00	0.99		1.00	0.95	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	1580	1739		1700	1752		1275	1877		1700	1826	1826	
Flt Permitted	0.39	1.00		0.50	1.00		0.65	1.00		0.38	1.00	1.00	
Satd. Flow (perm)	655	1739		898	1752		870	1877		672	1826	1826	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	148	364	20	13	416	101	57	319	28	38	115	57	
RTOR Reduction (vph)	0	2	0	0	9	0	0	4	0	0	23	0	
Lane Group Flow (vph)	148	382	0	13	508	0	57	343	0	38	149	0	
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	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	20.6	
Effective Green, g (s)	42.1	42.1		42.1	42.1		20.6	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	0.27	
Clearance Time (s)	6.6	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	
Lane Grp Cap (vph)	363	964		498	971		236	509		182	495		
v/s Ratio Prot	0.23			c0.29			c0.18				0.08		
v/c Ratio Perm	0.41	0.40		0.03	0.52		0.24	0.67		0.21	0.30		
Uniform Delay, d1	9.7	9.6		7.6	10.6		21.6	24.6		21.4	21.9		
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2	3.4	1.2		0.1	2.0		0.5	3.5		0.6	0.3		
Delay (s)	13.1	10.9		7.7	12.6		22.1	28.1		21.9	22.3		
Level of Service	B	B		A	B		C	C		C	C		
Approach Delay (s)	11.5			12.5			27.3			22.2			
Approach LOS	B			B			C			C			
Intersection Summary													
HCM 2000 Control Delay	17.0											HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57												
Actuated Cycle Length (s)	75.9											Sum of lost time (s)	13.2
Intersection Capacity Utilization	92.2%											ICU Level of Service	F
Analysis Period (min)	15												
c Critical Lane Group													

Lanes and Geometrics

2: Humber Station Rd & King St

05-15-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	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
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	10.0	0.0	10.0	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	0	0	0
Taper Length (m)	15.0	0.0	15.0	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
Pad Bike Factor											
Frt	0.993	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989	0.989
Flt Protected	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
Satd. Flow (prot)	0	1754	0	0	1814	0	0	1274	0	0	1487
Flt Permitted	0.992	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975
Satd. Flow (perm)	0	1742	0	0	1772	0	0	1127	0	0	1310
Right Turn on Red		Yes									
Satd. Flow (RTOR)	4	7	7	7	7	7	7	7	7	7	9
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	342.4	840.4	840.4	840.4	840.4	840.4	840.4	840.4	840.4	840.4	799.7
Travel Time (s)	24.7	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	53.3
Intersection Summary											
Area Type: Other											

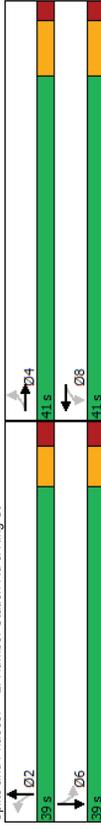
Timings

2: Humber Station Rd & King St

05-15-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	4	4	4	8	8	8	2	2	2	6	6
Traffic Volume (vph)	7	442	18	429	71	69	14	18	14	18	18
Future Volume (vph)	7	442	18	429	71	69	14	18	14	18	18
Turn Type	Perm	NA	NA								
Protected Phases	4	4	4	8	8	8	2	2	2	6	6
Permitted Phases	4	4	4	8	8	8	2	2	2	6	6
Detector Phase	4	4	4	8	8	8	2	2	2	6	6
Switch Phase	4	4	4	8	8	8	2	2	2	6	6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	14.4	14.4	14.4	14.4	14.4
Minimum Split (s)	22.4	22.4	22.4	22.4	22.4	22.4	21.4	21.4	21.4	21.4	21.4
Total Split (s)	41.0	41.0	41.0	41.0	41.0	41.0	39.0	39.0	39.0	39.0	39.0
Total Split (%)	51.3%	51.3%	51.3%	51.3%	51.3%	51.3%	48.8%	48.8%	48.8%	48.8%	48.8%
Yellow Time (s)	5.4	5.4	5.4	5.4	5.4	5.4	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	2.4	2.4	2.4	2.4	2.4
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.4	6.4	6.4	6.4	6.4
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode	Max	Max	Max	Max	Max	Max	Min	Min	Min	Min	Min
Act Effct Green (s)	33.7	33.7	33.7	33.7	33.7	33.7	16.8	16.8	16.8	16.8	16.8
Actuated g/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.26	0.26	0.26	0.26	0.26
v/C Ratio	0.52	0.52	0.52	0.52	0.52	0.52	0.65	0.65	0.65	0.65	0.65
Control Delay	13.2	13.2	13.2	13.2	13.2	13.2	27.3	27.3	27.3	27.3	27.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.2	13.2	13.2	13.2	13.2	13.2	27.3	27.3	27.3	27.3	27.3
LOS	B	B	B	B	B	B	C	C	C	C	B
Approach Delay	13.2	13.2	13.2	13.2	13.2	13.2	27.3	27.3	27.3	27.3	27.3
Approach LOS	B	B	B	B	B	B	C	C	C	C	B
Intersection Summary											
Cycle Length: 80											
Actuated Cycle Length: 64.3											
Natural Cycle: 35											
Control Type: Semi Act-Uncoord											
Maximum v/C Ratio: 0.65											
Intersection Signal Delay: 15.7											
Intersection Capacity Utilization 62.3%											
Analysis Period (min) 15											

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



Queues
2: Humber Station Rd & King St

05-15-2023

	EBT	WBT	NBT	SBT
Lane Group	473	488	208	41
Lane Group Flow (vph)	0.52	0.52	0.65	0.12
v/c Ratio	13.2	13.2	27.3	15.4
Control Delay	0.0	0.0	0.0	0.0
Queue Delay	13.2	13.2	27.3	15.4
Total Delay	31.9	32.8	18.7	3.0
Queue Length 50th (m)	72.5	74.5	39.1	9.4
Queue Length 95th (m)	318.4	816.4	324.4	715.7
Internal Link Dist (m)				
Turn Bay Length (m)	914	931	590	670
Base Capacity (vph)	0	0	0	0
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.52	0.35	0.06

Intersection Summary

Existing - PM Peak 11:09 am 05-02-2023

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

05-15-2023

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

Intersection Summary

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

Existing - PM Peak 11:09 am 05-02-2023

Lanes and Geometrics

1: The Gore Rd & King St

05-16-2023

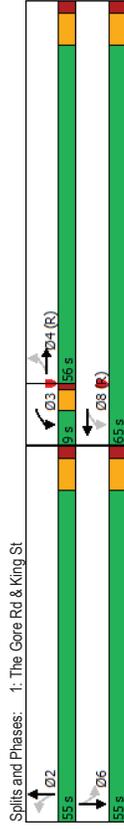
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
Lane Width (m)	0.0	0.0	0.0	139.9	0	1	0	1	0	1	0
Grade (%)	0.0	0.0	0.0	0.99	0.99	0.99	0.97	0.96	0.89	0.96	0.963
Storage Length (m)	0.0	0.0	0.0	0.950	0.950	0.950	0.174	0.223	0	1085	1784
Storage Lanes	1	0	0	1	1	1	0	0	0	1	0
Taper Length (m)	0.0	0.0	0.0	7.6	7.6	7.6	0	0	0	7.6	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
Pad Bike Factor	0.93	0.94	0.96	0.99	0.99	0.99	0.97	0.96	0.89	0.96	0.963
Frt	0.950	0.950	0.950	0.950	0.950	0.950	0.174	0.223	0	1085	1784
Flt Protected	1562	1589	0	1681	1753	0	1261	1722	0	1681	1784
Satd. Flow (prot)	0.518	0.375	0	0.375	0.375	0	0.174	0.223	0	0.695	0.695
Satd. Flow (perm)	796	1589	0	636	1753	0	223	1722	0	1085	1784
Right Turn on Red	Yes										
Satd. Flow (RTOR)	34	48	4	4	4	4	17	17	50	50	17
Link Speed (k/h)	363.2	207.4	207.4	628.6	628.6	628.6	578.8	578.8	578.8	578.8	578.8
Travel Time (s)	27.2	14.9	14.9	45.3	45.3	45.3	41.7	41.7	41.7	41.7	41.7
Intersection Summary											
Area Type: Other											

Timings

1: The Gore Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	51	259	43	390	11	72	100	377	100	377	100
Traffic Volume (vph)	51	259	43	390	11	72	100	377	100	377	100
Future Volume (vph)	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Turn Type	4	3	8	2	2	6	6	6	6	6	6
Protected Phases	4	4	3	8	2	2	2	2	2	2	2
Detector Phases	4	4	3	8	2	2	2	2	2	2	2
Switch Phase	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6
Minimum Initial (s)	30.6	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Minimum Split (s)	56.0	56.0	9.0	65.0	55.0	55.0	55.0	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%	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	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	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
Total Lost Time (s)	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	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	C-Min	C-Min	None	C-Min							
Act Effct Green (s)	59.3	59.3	70.5	67.9	38.9	38.9	38.9	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	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	0.28	0.85	0.85
Control Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2	30.4	50.2	50.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2	30.4	50.2	50.2
LOS	C	C	B	B	C	C	C	C	C	C	D
Approach Delay	24.5	17.4	17.4	23.2	46.9	46.9	46.9	46.9	46.9	46.9	46.9
Approach LOS	C	B	B	C	C	C	C	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: 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											



	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	51	430	43	417	11	96	100	502
Lane Group Flow (vph)	0.13	0.54	0.10	0.42	0.15	0.17	0.28	0.85
v/c Ratio	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	21.9	24.8	13.4	17.8	30.7	22.3	30.4	50.2
Total Delay	17.4	116.0	11.4	95.1	6.4	23.4	29.1	137.1
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		139.9	183.4	199.9	604.6	175.0	554.8
Turn Bay Length (m)	395	807	430	994	89	705	441	730
Base Capacity (vph)	0	0	0	0	0	0	0	0
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

Permitted Phases	4	8	8	2	2	6
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
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 (vph/b)	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
Frb. ped/bikes	1.00	0.94	1.00	0.98	1.00	0.99	1.00	0.96	1.00	0.89	1.00	0.96
Frb. ped/bikes	0.93	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.89	1.00	0.96
Frt	1.00	0.94	1.00	0.98	1.00	0.99	1.00	0.96	1.00	0.89	1.00	0.96
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.99	1.00	0.96	1.00	0.89	1.00	0.96
Satd. Flow (prot)	1452	1589	1655	1754	1655	1754	1261	1723	1487	1784	1784	1784
Flt Permitted	0.52	1.00	1.00	0.38	1.00	1.00	0.17	1.00	0.89	1.00	1.00	1.00
Satd. Flow (perm)	792	1589	1654	1754	1654	1754	231	1723	1095	1784	1784	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
Conf. Peds. (#/hr)	50	50	50	50	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	Perm	NA	Perm	NA
Protected Phases	4	8	8	2	2	6						
Permitted Phases	4	8	8	2	2	6						
Actuated Green, G (s)	58.5	67.9	67.9	67.9	67.9	38.9	38.9	38.9	38.9	38.9	38.9	38.9
Effective Green, g (s)	58.5	67.9	67.9	67.9	67.9	38.9	38.9	38.9	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	0.32	0.32	0.32	0.32
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)	386	774	415	992	74	558	354	578				
v/s Ratio Prot	c0.26	0.00	c0.24	0.05	0.09							
v/s Ratio Perm	0.06	0.05	0.05	0.15	0.15	0.28	0.85					
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

05-16-2023

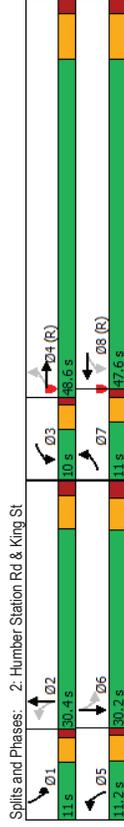
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	347	456	17	12	17	59					
Traffic Volume (vph)	5	347	73	456	17	12	17	59			
Future Volume (vph)	5	347	73	456	17	12	17	59			
Lane Width (m)	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.7
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	50.0	25.0	50.0	25.0	0.0	0.0	0.0	50.0	0.0	50.0	0.0
Storage Lanes	0	0	0	0	0	0	0	0	0	0	0
Taper Length (m)	7.6	7.6	0.0	0.0	0.0	0.0	0.0	7.6	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
Pad Bike Factor	0.97	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.97
Frt	0.969	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.997	0.992
Flt Protected	0.999	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.990
Satd. Flow (prot)	0	1674	0	1811	0	0	1163	0	0	1626	0
Flt Permitted	0.995	0.882	0.882	0.887	0.887	0.887	0.887	0.887	0.887	0.887	0.935
Satd. Flow (perm)	0	1667	0	1596	0	0	1015	0	0	1504	0
Right Turn on Red	Yes										
Satd. Flow (RTOR)	19	1	1	18	18	3					
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	329.7	840.4	348.5	348.5	348.5	347.2					
Travel Time (s)	23.7	60.5	25.1	25.1	25.1	25.0					
Intersection Summary											
Area Type:	Other										

Timings

2: Humber Station Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	5	347	73	456	17	12	17	59			
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	pm+pt	NA	NA
Protected Phases	7	4	3	8	5	2	1	6			
Permitted Phases	4	8	8	2	6						
Detector Phase	7	4	3	8	5	2	1	6			
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4
Minimum Initial (s)	11.0	31.4	10.0	31.4	11.2	30.0	11.0	30.2			
Minimum 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	0.0	0.0	0.0	0.0			
Total Lost Time (s)	7.4	7.4	7.4	7.4	6.0	6.2					
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None	None	Min
Act Effct Green (s)	68.2	68.2	68.2	68.2	18.4	18.2					
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.18	0.18					
v/C Ratio	0.40	0.50	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	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										



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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4		4			4				4		
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frbp. ped/bikes	0.97	1.00	1.00	1.00	1.00	0.95	0.95	0.99	0.99	0.99	0.99	0.99	
Frbp. ped/bikes	1.00	0.99	0.99	1.00	0.99	0.97	0.97	0.97	0.97	0.98	0.98	0.98	
Frt	1.00	0.97	1.00	1.00	0.95	0.95	0.98	0.98	0.98	0.99	0.99	0.99	
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Satd. Flow (prot)	1675	1798	1798	1798	1798	1798	1798	1798	1798	1798	1798	1798	
Flt Permitted	1.00	0.88	0.88	1.00	0.88	0.88	0.89	0.89	0.89	0.89	0.89	0.89	
Satd. Flow (perm)	1668	1597	1597	1597	1597	1597	1016	1016	1016	1016	1504	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	
Conf. Peds. (#/hr)	50	50	50	50	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											
Protected Phases	7	4	3	8	5	2	1	2	1	6	6	6	
Permitted Phases	4		8		2		6						
Actuated Green, G (s)	68.2	68.2	68.2	68.2	68.2	68.2	18.4	18.4	18.4	18.2	18.2	18.2	
Effective Green, g (s)	68.2	68.2	68.2	68.2	68.2	68.2	18.4	18.4	18.4	18.2	18.2	18.2	
Actuated g/C Ratio	0.68	0.68	0.68	0.68	0.68	0.68	0.18	0.18	0.18	0.18	0.18	0.18	
Clearance Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.0	6.0	6.0	6.2	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)	1137	1089	1089	1089	1089	1089	186	186	186	273	273	273	
v/s Ratio Prot	0.27	0.34	0.34	0.34	0.34	0.34	0.03	0.03	0.03	0.05	0.05	0.05	
v/s Ratio Perm	0.39	0.50	0.50	0.50	0.50	0.50	0.17	0.17	0.17	0.29	0.29	0.29	
Uniform Delay, d1	6.9	7.6	7.6	7.6	7.6	7.6	34.4	34.4	34.4	35.3	35.3	35.3	
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	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.6	0.6	0.6	
Delay (s)	7.1	8.0	8.0	8.0	8.0	8.0	34.8	34.8	34.8	35.9	35.9	35.9	
Level of Service	A	A	A	A	A	A	C	C	C	D	D	D	
Approach Delay (s)	7.1	8.0	8.0	8.0	8.0	8.0	34.8	34.8	34.8	35.9	35.9	35.9	
Approach LOS	A	A	A	A	A	A	C	C	C	D	D	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
10: The Gore Rd & Street A

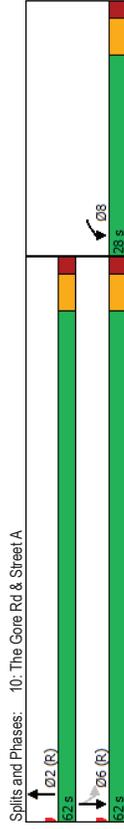
05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		P		R	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.4	3.7	
Grade (%)	0%	0%	0%	0%	0%	
Storage Length (m)	0.0	0.0	0.0	50.0		
Taper Length (m)	1	0	0	7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Pad 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		Yes	
Satd. Flow (RTOR)	50		50		50	
Link Speed (k/h)	319.0		265.4		374.2	
Link Distance (m)	23.0		19.1		26.9	
Travel Time (s)						
Intersection Summary	Other					

Timings
10: The Gore Rd & Street A

05-16-2023

Lane Group	NBT	SBT	Ø8
Lane Configurations	P	R	
Traffic Volume (vph)	166	646	
Future Volume (vph)	166	646	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases	2	6	
Detector Phase			
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	31.0
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	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Min	C-Min	None
Act Effect 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%			
ICU Level of Service B			
Analysis Period (min) 15			



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

10: The Gore Rd & Street A

05-16-2023



	NBT	SBT
Lane Group	166	646
Lane Group Flow (vph)	0.10	0.40
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)	19.6	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

05-16-2023



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T		T	T
Traffic Volume (vph)	0	0	166	0	0	646
Future Volume (vph)	0	0	166	0	0	646
Ideal Flow (vphpb)	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
Frbp. ped/bikes			1.00			1.00
Frbp. ped/bikes			1.00			1.00
Flt			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	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	50	50
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2		6	6
Permitted Phases					6	
Actuated Green, G (s)			69.2		69.2	69.2
Effective Green, g (s)			69.2		69.2	69.2
Actuated g/C Ratio			0.77		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)			1447		1447	1447
v/s Ratio Prot			0.09		c0.34	
v/s Ratio Perm						0.45
v/c Ratio			0.11		3.7	0.45
Uniform Delay, d1			2.6		1.00	3.7
Progression Factor			0.99		1.00	1.00
Incremental Delay, d2			0.2		1.0	4.7
Delay (s)			2.8		4.7	4.7
Level of Service			A		A	A
Approach Delay (s)	0.0		2.8		4.7	4.7
Approach LOS	A		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

1: The Gore Rd & King St

05-16-2023

	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Lane Width (m)	0.0	0.0	139.9	0.0	139.9	25.0	199.9	0.0	175.0	0.0	50.0	0.0
Grade (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Storage Length (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Storage Lanes	1	0	1	1	1	0	1	1	0	1	1	0
Taper Length (m)	0.0	0.0	7.6	0.0	7.6	0.0	7.6	0.0	7.6	0.0	7.6	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
Pad Bike Factor	0.99	0.99	0.94	0.97	0.91	0.99	0.99	0.99	0.96	0.96	0.96	0.96
Frt	0.950	0.950	0.950	0.973	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Flt Protected	1562	1728	0	1681	1709	0	1261	1865	0	1681	1760	0
Satd. Flow (perm)	0.299	0.505	0.505	0.505	0.505	0.505	0.505	0.505	0.505	0.505	0.505	0.505
Right Turn on Red	492	1728	0	839	1709	0	665	1865	0	323	1760	0
Satd. Flow (RTOR)	3	Yes	Yes	12	12	3	3	3	3	18	18	18
Link Speed (k/h)	48	48	48	50	50	50	50	50	50	50	50	50
Link Distance (m)	363.2	363.2	207.4	628.6	628.6	45.3	45.3	45.3	45.3	45.3	45.3	45.3
Travel Time (s)	27.2	27.2	14.9	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7
Intersection Summary												
Area Type: Other												

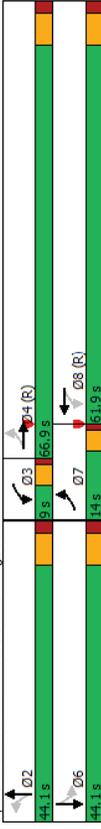
Timings

1: The Gore Rd & King St

05-16-2023

	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	148	398	14	454	57	381	137	381	137	381	137	137
Traffic Volume (vph)	148	398	14	454	57	381	137	381	137	381	137	137
Future Volume (vph)	148	398	14	454	57	381	137	381	137	381	137	137
Turn Type	pm-plt	NA	pm-plt	NA	pm-plt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	7	4	3	8	2	6	6	6	6	6	6	6
Permitted Phases	4	8	2	2	2	2	2	2	2	2	2	2
Detector Phase	7	4	3	8	2	2	2	2	2	2	2	2
Switch Phase	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 Initial (s)	11.0	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Minimum Split (s)	14.0	66.9	9.0	61.9	44.1	44.1	44.1	44.1	44.1	44.1	44.1	44.1
Total Split (s)	11.7%	55.8%	7.5%	51.6%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%	36.8%
Total Split (%)	3.0	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Yellow Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Time (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
Lost Time Adjust (s)	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost Time (s)	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Lead/Lag	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	Yes	Yes
Recall Mode	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min
Act Effct Green (s)	78.5	72.1	70.7	62.6	30.9	30.9	30.9	30.9	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	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	0.42	0.42	0.42	0.42
Control Delay	11.6	16.0	9.4	25.2	40.0	58.3	54.5	35.1	35.1	35.1	35.1	35.1
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	11.6	16.0	9.4	25.2	40.0	58.3	54.5	35.1	35.1	35.1	35.1	35.1
LOS	B	B	A	C	D	E	D	D	D	D	D	D
Approach Delay	14.8	B	24.8	C	56.1	38.3	38.3	38.3	38.3	38.3	38.3	38.3
Approach LOS	B	B	C	C	E	D	D	D	D	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: 75												
Control Type: Actuated-Coordinated												
Maximum v/C Ratio: 0.85												
Intersection Signal Delay: 31.4												
Intersection Capacity Utilization 96.3%												
ICU Level of Service F												
Analysis Period (min) 15												

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



1: The Gore Rd & King St

05-16-2023

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
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		139.9		199.9		175.0	
Turn Bay Length (m)	413		1039		533		897	
Base Capacity (vph)	0		0		0		0	
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	0.36	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

05-16-2023

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	148	398	20	14	454	101	57	381	28
Traffic Volume (vph)	148	398	20	14	454	101	57	381	28
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.7	3.7	3.4	3.7
Lane Width	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	0.99	1.00	0.97	1.00	0.99	1.00	0.96	1.00
Frbp. ped/bikes	0.99	1.00	0.97	1.00	0.91	1.00	0.96	1.00	1.00
Frbp. ped/bikes	1.00	0.99	1.00	0.97	1.00	0.99	1.00	0.96	1.00
Flt	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.96
Flt Protected	1550	1727	1626	1708	1151	1865	1610	1760	1760
Satd. Flow (prot)	0.30	1.00	0.51	1.00	0.55	1.00	0.19	1.00	1.00
Flt Permitted	487	1727	865	1708	666	1865	324	1760	1760
Satd. Flow (perm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	148	398	20	14	454	101	57	381	28
Adj. Flow (vph)	0	1	0	0	6	0	2	0	0
RTOR Reduction (vph)	148	417	0	14	549	0	57	407	0
Lane Group Flow (vph)	50	50	50	50	50	50	50	50	50
Conf. Peds. (#/hr)	13%	10%	3%	5%	8%	0%	40%	0%	14%
Heavy Vehicles (%)	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt
Turn Type	7	4	3	8	8	2	2	6	6
Protected Phases	4	8	8	8	2	2	6	6	6
Permitted Phases	75.9	69.7	64.8	62.6	30.9	30.9	30.9	30.9	30.9
Actuated Green, G (s)	75.9	69.7	64.8	62.6	30.9	30.9	30.9	30.9	30.9
Effective Green, g (s)	0.63	0.58	0.54	0.52	0.26	0.26	0.26	0.26	0.26
Actuated g/C Ratio	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6
Clearance Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	390	1003	481	891	171	480	83	453	453
Lane Grp Cap (vph)	c0.03	0.24	0.00	c0.32	c0.22	c0.22	0.12	0.10	0.10
v/s Ratio Prot	0.21	0.02	0.02	0.09	0.09	0.09	0.12	0.10	0.10
v/s Ratio Perm	0.38	0.42	0.03	0.62	0.33	0.85	0.46	0.40	0.40
Uniform Delay, d1	11.7	13.9	12.8	20.2	36.2	42.3	37.5	36.9	36.9
Progression Factor	1.00	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	1.3	4.0	0.6	0.6
Delay (s)	12.3	15.2	12.8	23.4	37.3	55.3	41.5	37.4	37.4
Level of Service	B	B	B	C	D	E	D	D	D
Approach Delay (s)	14.4	14.4	23.2	23.2	53.1	53.1	38.1	38.1	38.1
Approach LOS	B	B	C	C	D	D	D	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

05-16-2023

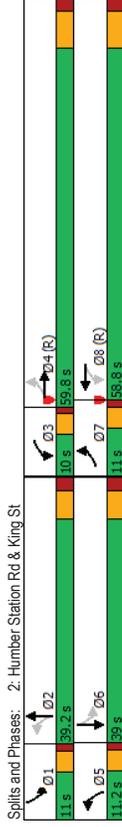
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	50.0	0	25.0	50.0	0	25.0	0.0	0.0	0.0	50.0	0.0
Storage Lanes	0	0	0	0	0	0	0	0	0	0	0
Taper Length (m)	7.6	0	0	7.6	0	0	0	0	0	7.6	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
Pad Bike Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Frt	0.994	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990	0.990
Flt Protected	0.999	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
Satd. Flow (prot)	0	1743	0	0	1795	0	0	1299	0	0	1450
Flt Permitted	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993	0.993
Satd. Flow (perm)	0	1732	0	0	1752	0	0	1047	0	0	1268
Right Turn on Red	Yes										
Satd. Flow (RTOR)	3	5	5	5	5	5	5	5	5	5	5
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	329.7	840.4	840.4	840.4	840.4	840.4	840.4	840.4	840.4	840.4	840.4
Travel Time (s)	23.7	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5	60.5
Intersection Summary											
Area Type: Other											

Timings

2: Humber Station Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	4	4	4	4	4	4	4	4	4	4	4
Traffic Volume (vph)	7	483	18	469	71	75	14	19	19	14	19
Future Volume (vph)	7	483	18	469	71	75	14	19	19	14	19
Turn Type	pm+pt	NA	pm+pt								
Protected Phases	7	4	3	8	5	2	1	6	6	6	6
Permitted Phases	4	8	8	2	2	2	1	6	6	6	6
Detector Phase	7	4	3	8	5	2	1	6	6	6	6
Switch Phase	7	4	3	8	5	2	1	6	6	6	6
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)	11.0	31.4	10.0	31.4	11.2	30.2	11.0	30.2	11.0	30.2	30.2
Total Split (s)	11.0	59.8	10.0	58.8	11.2	39.2	11.0	39.0	11.0	39.0	39.0
Total Split (%)	9.2%	49.8%	8.3%	49.0%	9.3%	32.7%	9.2%	32.5%	9.2%	32.5%	32.5%
Yellow Time (s)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.2	1.0	2.2	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
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag								
Lead-Lag Optimize?	Yes										
Recall Mode	None	C-Min	None	C-Min	None						
Act Effect Green (s)	79.1	79.1	79.1	79.1	79.1	27.3	27.3	27.3	27.3	27.3	27.3
Actuated g/C Ratio	0.66	0.66	0.66	0.66	0.66	0.23	0.23	0.23	0.23	0.23	0.23
v/C Ratio	0.45	0.45	0.45	0.45	0.45	0.85	0.85	0.85	0.85	0.85	0.85
Control Delay	12.8	12.9	12.9	12.9	12.9	66.9	66.9	66.9	66.9	66.9	66.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	12.9	12.9	12.9	12.9	66.9	66.9	66.9	66.9	66.9	66.9
LOS	B	B	B	B	B	E	E	E	E	E	E
Approach Delay	12.8	12.9	12.9	12.9	12.9	66.9	66.9	66.9	66.9	66.9	66.9
Approach LOS	B	B	B	B	B	E	E	E	E	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: 0.85											
Intersection Signal Delay: 22.2											
Intersection Capacity Utilization 68.8%											
Analysis Period (min) 15											



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

	EBT	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	483	24	18	469	41	71	75	68	14	19	9
Traffic Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	9
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpb)	3.4	3.7	3.7	3.4	3.4	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Lane Width	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.96	0.96	0.96	0.97	0.97	0.97
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.98	0.98	0.98
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.97	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Flt Protected	1742	1791	1791	1791	1791	1791	1180	1180	1180	1414	1414	1414
Satd. Flow (prot)	0.99	0.98	0.98	0.98	0.98	0.98	0.87	0.87	0.87	0.89	0.89	0.89
Flt Permitted	1731	1751	1751	1751	1751	1751	1048	1048	1048	1277	1277	1277
Satd. Flow (perm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	7	483	24	18	469	41	71	75	68	14	19	9
Adj. Flow (vph)	0	1	0	0	2	0	0	15	0	0	7	0
RTOR Reduction (vph)	0	513	0	0	526	0	0	199	0	0	35	0
Lane Group Flow (vph)	50	50	50	50	50	50	50	50	50	50	50	50
Conf. Peds. (#/hr)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Heavy Vehicles (%)	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA
Turn Type	7	4	3	8	5	2	2	1	1	6	6	6
Protected Phases	4	8	8	8	2	2	2	2	2	6	6	6
Permitted Phases	79.1	79.1	79.1	79.1	79.1	79.1	27.3	27.3	27.3	27.3	27.3	27.3
Actuated Green, G (s)	79.1	79.1	79.1	79.1	79.1	79.1	27.3	27.3	27.3	27.3	27.3	27.3
Effective Green, g (s)	0.66	0.66	0.66	0.66	0.66	0.66	0.23	0.23	0.23	0.23	0.23	0.23
Actuated g/C Ratio	7.4	7.4	7.4	7.4	7.4	7.4	6.2	6.2	6.2	6.2	6.2	6.2
Clearance Time (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
Vehicle Extension (s)	1141	1154	1154	1154	1154	1154	238	238	238	290	290	290
Lane Grp Cap (vph)	v/s Ratio Prot	0.30	c0.30	c0.30	c0.19	c0.19	0.03	0.03	0.03	0.03	0.03	0.03
v/s Ratio Perm	0.45	0.46	0.46	0.46	0.46	0.46	0.83	0.83	0.83	0.12	0.12	0.12
v/c Ratio	9.9	10.0	10.0	10.0	10.0	10.0	44.2	44.2	44.2	36.8	36.8	36.8
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.3	0.3	0.3	0.3	0.3	0.3	21.5	21.5	21.5	0.2	0.2	0.2
Incremental Delay, d2	10.2	10.3	10.3	10.3	10.3	10.3	65.7	65.7	65.7	37.0	37.0	37.0
Delay (s)	B	B	B	B	B	B	E	E	E	D	D	D
Level of Service	B	B	B	B	B	B	E	E	E	D	D	D
Approach Delay (s)	B	B	B	B	B	B	E	E	E	D	D	D
Approach LOS	B	B	B	B	B	B	E	E	E	D	D	D

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	483	24	18	469	41	71	75	68	14	19	9
Traffic Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	9
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpb)	3.4	3.7	3.7	3.4	3.4	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Lane Width	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	7.4
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.96	0.96	0.96	0.97	0.97	0.97
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.98	0.98	0.98
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.96	0.96	0.96	0.97	0.97	0.97
Frt	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98	0.98	0.98	0.98
Flt Protected	1742	1791	1791	1791	1791	1791	1180	1180	1180	1414	1414	1414
Satd. Flow (prot)	0.99	0.98	0.98	0.98	0.98	0.98	0.87	0.87	0.87	0.89	0.89	0.89
Flt Permitted	1731	1751	1751	1751	1751	1751	1048	1048	1048	1277	1277	1277
Satd. Flow (perm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	7	483	24	18	469	41	71	75	68	14	19	9
Adj. Flow (vph)	0	1	0	0	2	0	0	15	0	0	7	0
RTOR Reduction (vph)	0	513	0	0	526	0	0	199	0	0	35	0
Lane Group Flow (vph)	50	50	50	50	50	50	50	50	50	50	50	50
Conf. Peds. (#/hr)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	25%
Heavy Vehicles (%)	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA
Turn Type	7	4	3	8	5	2	2	1	1	6	6	6
Protected Phases	4	8	8	8	2	2	2	2	2	6	6	6
Permitted Phases	79.1	79.1	79.1	79.1	79.1	79.1	27.3	27.3	27.3	27.3	27.3	27.3
Actuated Green, G (s)	79.1	79.1	79.1	79.1	79.1	79.1	27.3	27.3	27.3	27.3	27.3	27.3
Effective Green, g (s)	0.66	0.66	0.66	0.66	0.66	0.66	0.23	0.23	0.23	0.23	0.23	0.23
Actuated g/C Ratio	7.4	7.4	7.4	7.4	7.4	7.4	6.2	6.2	6.2	6.2	6.2	6.2
Clearance Time (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
Vehicle Extension (s)	1141	1154	1154	1154	1154	1154	238	238	238	290	290	290
Lane Grp Cap (vph)	v/s Ratio Prot	0.30	c0.30	c0.30	c0.19	c0.19	0.03	0.03	0.03	0.03	0.03	0.03
v/s Ratio Perm	0.45	0.46	0.46	0.46	0.46	0.46	0.83	0.83	0.83	0.12	0.12	0.12
v/c Ratio	9.9	10.0	10.0	10.0	10.0	10.0	44.2	44.2	44.2	36.8	36.8	36.8
Uniform Delay, d1	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Progression Factor	0.3	0.3	0.3	0.3	0.3	0.3	21.5	21.5	21.5	0.2	0.2	0.2
Incremental Delay, d2	10.2	10.3	10.3	10.3	10.3	10.3	65.7	65.7	65.7	37.0	37.0	37.0
Delay (s)	B	B	B	B	B	B	E	E	E	D	D	D
Level of Service	B	B	B	B	B	B	E	E	E	D	D	D
Approach Delay (s)	B	B	B	B	B	B	E	E	E	D	D	D
Approach LOS	B	B	B	B	B	B	E	E	E	D	D	D

Lanes and Geometrics
10: The Gore Rd & Street A

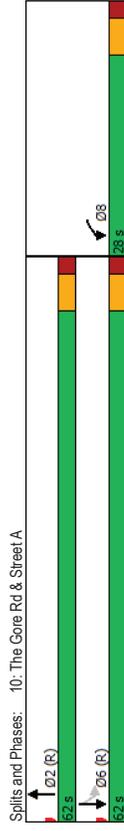
05-16-2023

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		P		P	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.4	3.7	
Grade (%)	0%	0%	0%	0%	0%	
Storage Length (m)	0.0	0.0	0.0	50.0		
Taper Length (m)	1	0	0	7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Pad 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		Yes	
Satd. Flow (RTOR)	50		50		50	
Link Speed (k/h)	319.0		265.4		374.2	
Travel Time (s)	23.0		19.1		26.9	
Intersection Summary						
Area Type:	Other					

Timings
10: The Gore Rd & Street A

05-16-2023

Lane Group	NBT	SBT	Ø8
Lane Configurations	P		
Traffic Volume (vph)	678	250	
Future Volume (vph)	678	250	
Turn Type	NA	NA	
Protected Phases	2	6	8
Permitted Phases	2	6	
Detector Phase			
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	31.0
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	0.0
Total Lost Time (s)	6.0	6.0	6.0
Lead/Lag			
Lead-Lag Optimize?			
Recall Mode	C-Min	C-Min	None
Act Effect Green (s)	76.4	76.4	
Actuated g/C Ratio	0.85	0.85	
v/C Ratio	0.42	0.16	
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: 6.3			Intersection LOS: A
Intersection Capacity Utilization 61.3%			ICU Level of Service B
Analysis Period (min) 15			



Queues
10: The Gore Rd & Street A

05-16-2023

	NBT	SBT
Lane Group	678	250
Lane Group Flow (vph)	0.42	0.16
v/c Ratio	6.9	4.5
Control Delay	0.0	0.0
Queue Delay	6.9	4.5
Total Delay	0.0	0.0
Queue Length 50th (m)	82.6	28.6
Queue Length 95th (m)	241.4	350.2
Internal Link Dist (m)		
Turn Bay Length (m)	1598	1598
Base Capacity (vph)	0	0
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

05-16-2023

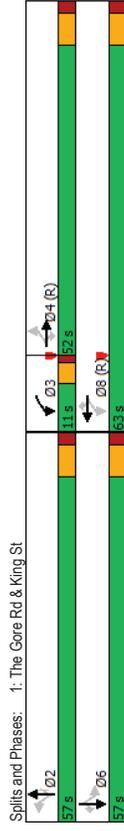
	WBL	WBR	NBT	NBR	SBL	SBT
Movement						
Lane Configurations	W					↑
Traffic Volume (vph)	0	0	678	0	0	250
Future Volume (vph)	0	0	678	0	0	250
Ideal Flow (vphpb)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)			6.0			6.0
Lane Util. Factor			1.00			1.00
Frbp. ped/bikes			1.00			1.00
Frbp. ped/bikes			1.00			1.00
Flt			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	50	50
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2		6	6
Permitted Phases					6	
Actuated Green, G (s)			69.2		69.2	69.2
Effective Green, g (s)			69.2		69.2	69.2
Actuated g/C Ratio			0.77		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)			1447		1447	1447
v/s Ratio Prot			0.36		0.13	0.13
v/s Ratio Perm						
v/c Ratio			0.47		0.17	0.17
Uniform Delay, d1			3.8		2.8	2.8
Progression Factor			1.10		1.00	1.00
Incremental Delay, d2			1.0		0.3	0.3
Delay (s)			5.1		3.0	3.0
Level of Service			A		A	A
Approach Delay (s)	0.0		5.1		3.0	3.0
Approach LOS	A		A		A	A
Intersection Summary						
HCM 2000 Control Delay			4.6			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
1: The Gore Rd & King St

	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
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%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	0.0	0.0	139.9	0.0	25.0	199.9	0.0	50.0	175.0	0.0	50.0	0.0
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (m)	0.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	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	0.93	0.86	0.93	0.86	0.94	0.86	0.89	0.86	0.89	0.86	0.89	0.86
Frt	0.950	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850
Flt Protected	1562	1746	1585	1681	1779	1633	1261	1921	1432	1681	1921	1633
Satd. Flow (prot)	0.531	0.546	0.546	0.546	0.546	0.546	0.546	0.546	0.546	0.546	0.546	0.546
Satd. Flow (perm)	810	1746	1359	899	1779	1400	284	1228	1114	1921	1400	1400
Right Turn on Red	Yes											
Satd. Flow (RTOR)	171	171	171	171	171	171	171	171	171	171	171	171
Link Speed (k/h)	48	48	48	48	48	48	48	48	48	48	48	48
Link Distance (m)	363.2	207.4	207.4	207.4	207.4	207.4	207.4	207.4	207.4	207.4	207.4	207.4
Travel Time (s)	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2	27.2
Intersection Summary												
Area Type:	Other											

Timings
1: The Gore Rd & King St

	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	51	259	171	43	390	27	11	72	24	100	377	125
Traffic Volume (vph)	51	259	171	43	390	27	11	72	24	100	377	125
Future Volume (vph)	Perm	NA	Perm	pmt-pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Turn Type	4	4	4	8	8	2	2	2	2	2	6	6
Protected Phases	4	4	4	8	8	2	2	2	2	2	6	6
Detector Phases	4	4	4	8	8	2	2	2	2	2	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Minimum Split (s)	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (%)	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Total Split (s)	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Yellow Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Time (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
Lost Time Adjust (s)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost Time (s)	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lag
Lead/Lag	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead-Lag Optimize?	Recall Mode	C-Min	C-Min	None	C-Min							
Act Effct Green (s)	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1	68.1
Actuated g/C Ratio	0.57	0.57	0.57	0.66	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
Actuated v/C Ratio	0.11	0.26	0.20	0.07	0.34	0.03	0.16	0.15	0.07	0.36	0.79	0.28
v/C Ratio	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
Queue Delay	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
Queue Delay	B	B	A	A	B	A	D	C	A	D	D	A
Queue Delay	11.7	11.7	11.3	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4	26.4
Queue Delay	B	B	B	B	B	B	B	B	B	B	B	B
Queue Delay	Intersection Summary											
Queue Delay	Cycle Length: 120											
Queue Delay	Actuated Cycle Length: 120											
Queue Delay	Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green											
Queue Delay	Natural Cycle: 75											
Queue Delay	Control Type: Actuated-Coordinated											
Queue Delay	Maximum v/C Ratio: 0.79											
Queue Delay	Intersection Signal Delay: 23.4											
Queue Delay	Intersection Capacity Utilization 71.7%											
Queue Delay	Analysis Period (min) 15											



Queues
1: The Gore Rd & King St

Future Background 2031 With Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	51	259	171	43	390	27	11	72	24	100	377	125
Lane Group Flow (vph)	0.11	0.26	0.20	0.07	0.34	0.03	0.16	0.15	0.07	0.36	0.79	0.28
v/c Ratio	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
Control 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
Queue Delay	16.6	16.3	3.2	9.1	12.1	3.1	37.2	33.5	0.4	39.1	53.7	6.9
Total Delay	5.7	31.7	0.0	3.3	40.4	0.0	2.1	13.9	0.0	20.3	86.8	0.0
Queue Length 50th (m)	15.4	59.2	12.3	9.4	73.1	3.6	7.0	23.5	0.0	33.2	110.1	13.6
Queue Length 95th (m)	339.2			183.4			604.6				554.8	
Internal Link Dist (m)												
Turn Bay Length (m)				139.9		25.0	199.9		50.0	175.0		50.0
Base Capacity (vph)	459	991	845	643	1140	909	119	806	555	467	806	660
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.26	0.20	0.07	0.34	0.03	0.09	0.09	0.04	0.21	0.47	0.19
Intersection Summary												

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

Future Background 2031 With Improvements
Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	51	259	171	43	390	27	11	72	24	100	377	125
Traffic Volume (vph)	51	259	171	43	390	27	11	72	24	100	377	125
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph/b)	3.4	3.7	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.7
Lane Width	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.93	1.00	1.00	0.96	1.00	1.00	0.95	1.00	1.00	0.89	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
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
Flt	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.85	1.00	1.00
Flt Protected	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Satd. Flow (prot)	1448	1746	1359	1614	1779	1400	1201	1921	1228	1481	1921	1400
Flt Permitted	0.53	1.00	1.00	0.55	1.00	1.00	0.23	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	810	1746	1359	929	1779	1400	287	1921	1228	1114	1921	1400
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	51	259	171	43	390	27	11	72	24	100	377	125
RTOR Reduction (vph)	0	0	75	0	0	10	0	0	18	0	0	94
Lane Group Flow (vph)	51	259	96	43	390	17	11	72	6	100	377	31
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA	Perm	pm-pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4		4	3	8		2		2		6	
Permitted Phases	4		4	8	8		2		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	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	454	979	762	627	1140	897	71	478	305	277	478	348
v/s Ratio Prot	0.15		0.00	c0.22		0.01	0.04		0.00	0.09	c0.20	
v/s Ratio Perm	0.06		0.07	0.04		0.01	0.04		0.00	0.09	0.02	
v/c Ratio	0.11	0.26	0.13	0.07	0.34	0.02	0.15	0.15	0.02	0.36	0.79	0.09
Uniform Delay, d1	12.4	13.6	12.5	8.1	9.9	7.8	35.2	35.1	34.0	37.2	42.1	34.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.7	0.3	0.0	0.8	0.0	1.0	1.0	0.1	0.8	8.4	0.1
Delay (s)	12.9	14.2	12.8	8.2	10.7	7.9	36.2	35.3	34.0	38.0	50.5	34.7
Level of Service	B	B	B	A	B	A	D	D	C	D	D	C
Approach Delay (s)	13.6		10.3		10.3		35.1		35.1		45.2	
Approach LOS	B		B		B		D		D		D	
Intersection Summary												
HCM 2000 Control Delay	25.6											
HCM 2000 Volume to Capacity ratio	0.48											
Actuated Cycle Length (s)	120.0											
Intersection Capacity Utilization	71.7%											
Analysis Period (min)	15											
c. Critical Lane Group	C											

Lanes and Geometrics
2: Humber Station Rd & King St

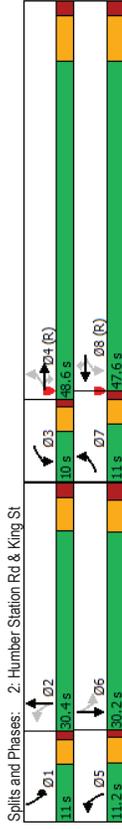
Future Background 2031 With Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1
Ideal Flow (vphpl)	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
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	50.0	25.0	50.0	25.0	50.0	25.0	0.0	0.0	0.0	50.0	0.0
Storage Lanes	1	1	1	1	1	1	0	0	0	1	0
Taper Length (m)	7.6	7.6	7.6	7.6	7.6	7.6	0.0	0.0	0.0	7.6	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
Ped Bike Factor	0.96	0.88	0.94	0.88	0.91	0.93	0.91	0.93	0.90	0.99	0.98
Frt	0.950	0.850	0.950	0.850	0.950	0.850	0.950	0.850	0.950	0.850	0.950
Flt Protected	1766	1762	1555	1697	1830	1633	1089	1176	0	1226	1749
Satd. Flow (prot)	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470	0.470
Satd. Flow (perm)	839	1762	1365	792	1830	1434	738	1176	0	857	1749
Right Turn on Red	Yes										
Satd. Flow (RTOR)	122	122	122	122	122	122	122	122	122	122	122
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	329.7	840.4	840.4	840.4	840.4	840.4	348.5	348.5	348.5	347.2	347.2
Travel Time (s)	23.7	60.5	60.5	60.5	60.5	60.5	25.1	25.1	25.1	25.0	25.0
Intersection Summary											
Area Type: Other											

Timings
2: Humber Station Rd & King St

Future Background 2031 With Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	5	347	103	73	456	12	17	12	17	12	17
Traffic Volume (vph)	5	347	103	73	456	12	17	12	17	12	17
Future Volume (vph)	5	347	103	73	456	12	17	12	17	12	17
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt
Protected Phases	7	4	4	3	8	8	2	5	2	1	6
Permitted Phases	4	4	4	3	8	8	5	2	1	6	6
Detector Phase	7	4	4	3	8	8	5	2	1	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.0	11.0	30.2	30.2
Minimum Split (s)	11.0	48.6	48.6	10.0	47.6	47.6	11.2	30.4	11.0	30.2	30.2
Total Split (%)	11.0%	48.6%	48.6%	10.0%	47.6%	47.6%	11.2%	30.4%	11.0%	30.2%	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	4.0
All-Red Time (s)	1.0	2.0	2.0	1.0	2.0	2.0	1.0	2.0	1.0	2.0	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	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	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	None	None	None	Min
Act Effct Green (s)	62.5	54.5	54.5	66.4	61.4	61.4	23.7	18.6	23.4	18.2	18.2
Actuated g/C Ratio	0.62	0.54	0.54	0.66	0.61	0.61	0.24	0.19	0.23	0.18	0.18
v/C Ratio	0.01	0.36	0.13	0.12	0.41	0.01	0.09	0.13	0.08	0.20	0.20
Control Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5	32.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5	32.5
LOS	A	B	A	A	B	A	C	B	C	C	C
Approach Delay	14.5	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7	13.7
Approach LOS	B	B	B	B	B	B	C	C	C	C	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: 85											
Control Type: Actuated-Coordinated											
Maximum v/C Ratio: 0.41											
Intersection Signal Delay: 15.5											
Intersection Capacity Utilization 61.3%											
Analysis Period (min) 15											



Queues
2: Humber Station Rd & King St

Future Background 2031 With Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group	5	347	103	73	456	12	17	30	17	64
Lane Group Flow (vph)	0.01	0.36	0.13	0.12	0.41	0.01	0.09	0.13	0.08	0.20
v/c Ratio	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	10.0	18.0	3.1	9.0	14.8	0.0	24.0	19.0	23.8	32.5
Total Delay	0.3	31.0	0.0	3.1	29.3	0.0	2.9	2.1	2.9	10.9
Queue Length 50th (m)	2.2	80.1	7.8	13.7	105.8	0.0	6.6	9.3	6.6	20.7
Queue Length 95th (m)		305.7		816.4			324.5			323.2
Internal Link Dist (m)										
Turn Bay Length (m)	50.0		25.0	50.0		25.0			50.0	
Base Capacity (vph)	597	978	812	588	1124	928	200	301	227	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.35	0.13	0.12	0.41	0.01	0.09	0.10	0.07	0.15
Intersection Summary										

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

Future Background 2031 With Improvements
Morning Peak Hour

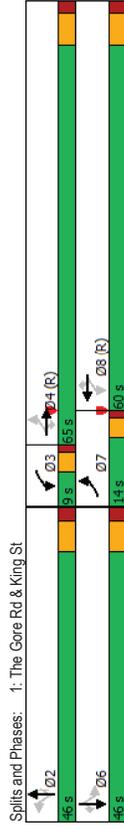
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	5	347	103	73	456	12	17	12	18	17	59	
Traffic Volume (vph)	5	347	103	73	456	12	17	12	18	17	59	
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	
Lane Width	4.0	7.4	4.0	7.4	4.0	7.4	4.0	6.0	4.0	6.0	6.2	
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.99	
Lane Util. Factor	0.98	1.00	1.00	0.98	1.00	1.00	0.93	1.00	0.93	1.00	0.99	
Frbp. ped/bikes	1.00	1.00	0.88	1.00	1.00	0.88	1.00	0.93	1.00	0.93	1.00	
Frbp. ped/bikes	0.98	1.00	1.00	0.98	1.00	1.00	0.93	1.00	0.93	1.00	0.99	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.91	1.00	0.91	1.00	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	0.99	
Satd. Flow (prot)	1725	1762	1365	1657	1830	1434	1017	1176	1137	1750	1750	
Flt Permitted	0.47	1.00	1.00	0.47	1.00	1.00	0.71	1.00	0.71	1.00	1.00	
Satd. Flow (perm)	853	1762	1365	821	1830	1434	762	1176	883	1750	1750	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	5	347	103	73	456	12	17	12	18	17	59	
RTOR Reduction (vph)	0	0	50	0	0	5	0	15	0	0	3	
Lane Group Flow (vph)	5	347	53	73	456	7	17	15	0	17	61	
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	25%	
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	NA	
Protected Phases	7	4	3	8	5	2	2	1	1	6	6	
Permitted Phases	4	8	8	8	2	2	2	2	6	6	6	
Actuated Green, G (s)	52.5	51.3	51.3	61.0	55.8	55.8	21.7	18.6	21.3	18.3	18.3	
Effective Green, g (s)	52.5	51.3	51.3	61.0	55.8	55.8	21.7	18.6	21.3	18.3	18.3	
Actuated g/C Ratio	0.52	0.51	0.51	0.61	0.56	0.56	0.22	0.19	0.21	0.18	0.18	
Clearance Time (s)	4.0	7.4	4.0	7.4	4.0	7.4	4.0	6.0	4.0	6.0	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	3.0	
Lane Grp Cap (vph)	458	903	700	548	1021	800	173	218	195	320	320	
v/s Ratio Prot	0.00	0.20	0.04	0.07	c0.25	c0.00	0.01	0.00	0.00	c0.03	c0.03	
v/s Ratio Perm	0.01	0.04	0.07	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	
v/c Ratio	0.01	0.38	0.08	0.13	0.45	0.01	0.10	0.07	0.09	0.19	0.19	
Uniform Delay, d1	11.4	14.8	12.3	8.3	13.0	9.8	31.2	33.6	31.4	34.6	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	
Incremental Delay, d2	0.0	1.2	0.2	0.1	1.4	0.0	0.2	0.1	0.2	0.3	0.3	
Delay (s)	11.4	16.0	12.5	8.4	14.4	9.8	31.4	33.7	31.6	34.9	34.9	
Level of Service	B	B	B	A	B	A	C	C	C	C	C	
Approach Delay (s)	B	B	B	B	B	B	B	B	B	B	B	
Approach LOS	B	B	B	B	B	B	B	B	B	B	B	
Intersection Summary												
HCM 2000 Control Delay	16.5										HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37											
Actuated Cycle Length (s)	100.0										Sum of lost time (s)	21.6
Intersection Capacity Utilization	61.3%										ICU Level of Service	B
Analysis Period (min)	15											
c. Critical Lane Group												

Lanes and Geometrics
1: The Gore Rd & King St

Timings
1: The Gore Rd & King St

	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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
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%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	0.0	0.0	139.9	25.0	199.9	50.0	175.0	50.0	175.0	50.0	175.0	50.0
Storage Lanes	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (m)	0.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	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	0.96	0.86	0.94	0.86	0.90	0.86	0.95	0.86	0.95	0.86	0.95	0.86
Frt	0.950	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850
Flt Protected	1562	1746	1585	1681	1779	1633	1261	1921	1432	1681	1921	1633
Satd. Flow (prot)	0.379	0.527	0.527	0.527	0.527	0.527	0.527	0.527	0.527	0.527	0.527	0.527
Satd. Flow (perm)	599	1746	1359	874	1779	1400	773	1921	1228	354	1921	1400
Right Turn on Red	Yes											
Satd. Flow (RTOR)	48	69	69	50	105	105	50	105	105	50	105	105
Link Speed (k/h)	363.2	207.4	207.4	628.6	578.8	578.8	41.7	41.7	41.7	41.7	41.7	41.7
Link Distance (m)	27.2	14.9	14.9	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
Travel Time (s)												
Area Type:	Other											
Intersection Summary												

	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	148	398	20	14	454	101	57	381	28	38	137	57
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	Perm	NA	Perm	NA	Perm
Protected Phases	7	4		3	8		2					6
Permitted Phases	4	4	4	8	8	8	2	2	2	2	6	6
Detector Phases	7	4	4	3	8	8	2	2	2	2	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)	14.0	65.0	65.0	9.0	60.0	60.0	46.0	46.0	46.0	46.0	46.0	46.0
Total Split (%)	11.7%	54.2%	54.2%	7.5%	50.0%	50.0%	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	Lag	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min	None	None	None	None	None	None
Act Effect Green (s)	80.1	73.4	73.4	72.0	63.5	63.5	29.3	29.3	29.3	29.3	29.3	29.3
Actuated g/C Ratio	0.67	0.61	0.61	0.60	0.53	0.53	0.24	0.24	0.24	0.24	0.24	0.24
v/C Ratio	0.31	0.37	0.37	0.02	0.02	0.02	0.48	0.13	0.30	0.81	0.07	0.44
Control Delay	10.2	15.3	15.3	0.1	9.2	22.1	3.9	39.3	56.3	0.4	53.0	37.0
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	10.2	15.3	15.3	0.1	9.2	22.1	3.9	39.3	56.3	0.4	53.0	37.0
LOS	B	B	A	A	C	A	D	E	A	D	D	A
Approach Delay	13.4	18.5	18.5	18.5	50.9	50.9	30.8	30.8	30.8	30.8	30.8	30.8
Approach LOS	B	B	B	B	D	D	C	C	C	C	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: 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												



Queues
1: The Gore Rd & King St

Future Background 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	148	398	20	14	454	101	57	381	28	38	137	57
Lane Group Flow (vph)	0.31	0.37	0.02	0.02	0.48	0.13	0.30	0.81	0.07	0.44	0.29	0.14
v/c Ratio	10.2	15.3	0.1	9.2	22.1	3.9	39.3	56.3	0.4	53.0	37.0	1.2
Control 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
Queue Delay	10.2	15.3	0.1	9.2	22.1	3.9	39.3	56.3	0.4	53.0	37.0	1.2
Total Delay	12.2	41.4	0.0	1.1	67.0	0.0	11.5	88.3	0.0	7.9	27.5	0.0
Queue Length 50th (m)	25.5	90.8	0.0	4.1	119.7	9.9	22.1	113.1	0.0	18.7	41.0	1.3
Queue Length 95th (m)												
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)	488	1068	858	564	949	796	253	630	473	116	630	530
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	0.37	0.02	0.02	0.48	0.13	0.23	0.60	0.06	0.33	0.22	0.11

Intersection Summary

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

Future Background 2031 With Improvements
Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	148	398	20	14	454	101	57	381	28	38	137	57
Traffic Volume (vph)	148	398	20	14	454	101	57	381	28	38	137	57
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.4	3.7	3.7
Lane Width	4.0	6.6	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	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	0.98	1.00	1.00	0.96	1.00	1.00	0.90	1.00	1.00	0.95	1.00	1.00
Frb. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.85	1.00	1.00
Flt Permitted	1538	1746	1359	1620	1779	1400	1133	1921	1228	1603	1921	1400
Satd. Flow (perm)	613	1746	1359	899	1779	1400	774	1921	1228	356	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)	148	398	20	14	454	101	57	381	28	38	137	57
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	148	398	12	14	454	53	57	381	7	38	137	14
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4		3	8		2		2		6	
Permitted Phases	4		4		8		2		2		6	
Actuated Green, G (s)	77.5	71.0	71.0	66.0	63.5	63.5	29.3	29.3	29.3	29.3	29.3	29.3
Effective Green, g (s)	77.5	71.0	71.0	66.0	63.5	63.5	29.3	29.3	29.3	29.3	29.3	29.3
Actuated g/C Ratio	0.65	0.59	0.59	0.55	0.53	0.53	0.24	0.24	0.24	0.24	0.24	0.24
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)	472	1033	804	509	941	740	188	469	299	86	469	341
v/s Ratio Prot	c0.03	0.23		0.00	c0.26				c0.20			0.07
v/s Ratio Perm	0.18		0.01	0.01		0.04	0.07		0.01	0.11		0.01
v/c Ratio	0.31	0.39	0.01	0.03	0.48	0.07	0.30	0.81	0.02	0.44	0.29	0.04
Uniform Delay, d1	9.7	13.0	10.1	12.3	17.9	13.8	37.0	42.8	34.5	38.4	36.9	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	1.1	0.0	0.0	1.8	0.2	0.9	10.3	0.0	3.6	0.3	0.0
Delay (s)	10.1	14.0	10.1	12.3	19.6	14.0	37.9	53.1	34.5	42.0	37.3	34.7
Level of Service	B	B	B	B	B	B	D	D	C	D	D	C
Approach Delay (s)		12.9			18.5			50.1			37.4	
Approach LOS		B			B			D			D	
Intersection Summary												
HCM 2000 Control Delay				27.2								C
HCM 2000 Volume to Capacity ratio				0.56								
Actuated Cycle Length (s)				120.0							17.2	
Intersection Capacity Utilization				87.5%							E	
Analysis Period (min)				15								
c. Critical Lane Group												

Lanes and Geometrics
2: Humber Station Rd & King St

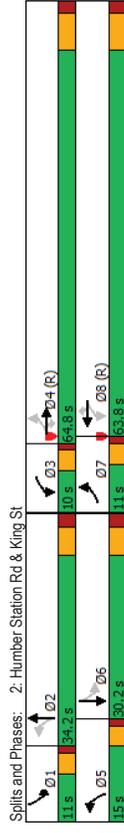
Future Background 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
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
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	50.0	1	25.0	50.0	1	25.0	0.0	0.0	0.0	50.0	0.0
Storage Lanes	1	1	1	1	1	1	0	0	0	1	0
Taper Length (m)	7.6	7.6	7.6	7.6	7.6	7.6	0.0	0.0	0.0	7.6	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
Ped Bike Factor	0.96	0.86	0.96	0.86	0.96	0.86	0.89	0.93	0.93	0.90	0.95
Frt	0.950	0.850	0.850	0.850	0.850	0.850	0.950	0.929	0.929	0.952	0.952
Flt Protected	1765	1762	1555	1697	1830	1633	1089	1280	0	1226	1557
Satd. Flow (prot)	0.429	0.397	0.397	0.397	0.397	0.397	0.589	0.589	0	0.666	0.666
Satd. Flow (perm)	762	1762	1334	678	1830	1400	601	1280	0	771	1557
Right Turn on Red	Yes										
Satd. Flow (RTOR)	50	50	102	50	102	102	35	35	9	50	9
Link Speed (k/h)	329.7	840.4	348.5	348.5	348.5	348.5	347.2	347.2	347.2	347.2	347.2
Link Distance (m)	23.7	60.5	25.1	25.1	25.1	25.1	25.0	25.0	25.0	25.0	25.0
Travel Time (s)											
Intersection Summary	Other										

Timings
2: Humber Station Rd & King St

Future Background 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	7	483	24	18	469	41	71	75	14	19	19
Traffic Volume (vph)	7	483	24	18	469	41	71	75	14	19	19
Future Volume (vph)	7	483	24	18	469	41	71	75	14	19	19
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt
Protected Phases	7	4	3	8	8	8	2	2	1	6	6
Permitted Phases	4	4	4	3	8	8	5	2	1	6	6
Detector Phase	7	4	4	3	8	8	5	2	1	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4	14.4
Minimum Initial (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.2	11.0	30.2	30.2
Minimum Split (s)	11.0	64.8	64.8	10.0	63.8	63.8	15.0	34.2	11.0	30.2	30.2
Total Split (%)	9.2%	54.0%	54.0%	8.3%	53.2%	53.2%	12.5%	28.5%	9.2%	25.2%	25.2%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	3.0	4.0	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	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
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	4.0	6.2	6.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes										
Recall Mode	None	C-Min	None	C-Min	None	C-Min	None	None	None	None	None
Act Effect Green (s)	78.8	73.0	73.0	80.0	75.2	75.2	31.4	24.5	22.6	18.2	18.2
Actuated g/C Ratio	0.66	0.61	0.61	0.67	0.63	0.63	0.26	0.20	0.19	0.15	0.15
v/C Ratio	0.01	0.45	0.03	0.04	0.41	0.04	0.34	0.49	0.08	0.11	0.11
Control Delay	11.6	19.0	0.0	10.9	16.4	0.1	35.1	35.7	27.7	32.1	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	19.0	0.0	10.9	16.4	0.1	35.1	35.7	27.7	32.1	32.1
LOS	B	B	A	B	B	A	D	D	D	C	C
Approach Delay	18.0	15.0	15.0	15.0	15.0	15.0	35.5	30.7	35.5	30.7	30.7
Approach LOS	B	B	B	B	B	B	D	D	D	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: 0.49											
Intersection Signal Delay: 20.1											
Intersection Capacity Utilization 57.3%											
Analysis Period (min) 15											



Queues
2: Humber Station Rd & King St

Future Background 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group	7	483	24	18	469	41	71	143	14	28
Lane Group Flow (vph)	0.01	0.45	0.03	0.04	0.41	0.04	0.34	0.49	0.08	0.11
v/c Ratio	11.6	19.0	0.0	10.9	16.4	0.1	35.1	35.7	27.7	32.1
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	11.6	19.0	0.0	10.9	16.4	0.1	35.1	35.7	27.7	32.1
Total Delay	3.1	130.2	0.0	5.5	121.7	0.0	22.2	41.0	6.6	12.1
Queue Length 50th (m)										
Queue Length 95th (m)										
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
Base Capacity (vph)		561	1098	870	504	1161	925	213	345	175
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	0.44	0.03	0.04	0.40	0.33	0.41	0.08	0.09
Intersection Summary										

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

Future Background 2031 With Improvements
Afternoon Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations	7	483	24	18	469	41	71	75	68	14	19	
Traffic Volume (vph)	7	483	24	18	469	41	71	75	68	14	19	
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Ideal Flow (vph/b)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	
Total Lost time (s)	4.0	7.4	4.0	7.4	4.0	7.4	4.0	6.2	4.0	6.2	4.0	
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	
Frbp. ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	0.93	1.00	0.95	1.00	
Frbp. ped/bikes	0.98	1.00	1.00	0.98	1.00	1.00	0.94	1.00	0.93	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	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	1.00	0.95	1.00	
Satd. Flow (prot)	1728	1762	1334	1668	1830	1400	1021	1280	1144	1556	1144	
Flt Permitted	0.43	1.00	1.00	0.40	1.00	1.00	0.59	1.00	0.67	1.00	1.00	
Satd. Flow (perm)	780	1762	1334	697	1830	1400	633	1280	802	1556	1556	
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	
Adj. Flow (vph)	7	483	24	18	469	41	71	75	68	14	19	
RTOR Reduction (vph)	0	0	10	0	0	17	0	28	0	0	8	
Lane Group Flow (vph)	7	483	14	18	469	24	71	115	0	14	20	
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%	
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	NA	
Protected Phases	7	4	3	8	8	5	2	1	6	6	6	
Permitted Phases	4	8	8	8	8	2	2	2	2	2	2	
Actuated Green, G (s)	69.5	68.2	68.2	72.3	69.6	69.6	31.5	24.5	18.7	15.7	15.7	
Effective Green, g (s)	69.5	68.2	68.2	72.3	69.6	69.6	31.5	24.5	18.7	15.7		
Actuated g/C Ratio	0.58	0.57	0.57	0.60	0.58	0.58	0.26	0.20	0.16	0.13		
Clearance Time (s)	4.0	7.4	4.0	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	3.0		
Lane Grp Cap (vph)	462	1001	758	441	1061	812	204	261	133	203		
v/s Ratio Prot	0.00	c0.27	0.00	c0.00	0.26	c0.03	c0.09	0.00	0.00	0.01		
v/s Ratio Perm	0.01	0.01	0.01	0.02	0.02	0.02	0.06	0.01	0.01	0.01		
v/c Ratio	0.02	0.48	0.02	0.04	0.44	0.44	0.35	0.44	0.11	0.10		
Uniform Delay, d1	11.0	15.4	11.3	10.3	14.2	10.8	35.1	41.8	43.3	45.9		
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	1.7	0.0	0.0	1.3	0.1	1.0	1.2	0.3	0.2		
Delay (s)	11.0	17.1	11.3	10.3	15.6	10.8	36.2	43.0	43.6	46.1		
Level of Service	B	B	B	B	B	B	D	D	D	D		
Approach Delay (s)	16.7	15.0	15.0	15.0	15.0	15.0	40.7	45.3	45.3	45.3		
Approach LOS	B	B	B	B	B	B	D	D	D	D		
Intersection Summary												
HCM 2000 Control Delay	20.9										HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46											
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
1: The Gore Rd & King St

05-16-2023

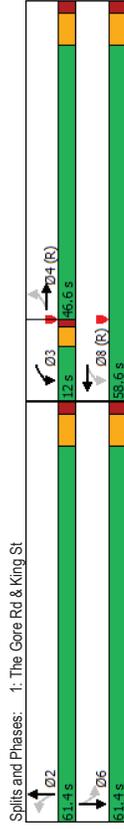
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
Lane Width (m)	0.0	0.0	0.0	139.9	25.0	199.9	50.0	175.0	50.0	0	0
Grade (%)	0.0	0.0	0.0	139.9	25.0	199.9	50.0	175.0	50.0	0	0
Storage Length (m)	0.0	0.0	0.0	139.9	25.0	199.9	50.0	175.0	50.0	0	0
Storage Lanes	1	0	0	1	0	1	0	1	0	1	0
Taper Length (m)	0.0	0.0	0.0	7.6	0	7.6	0	7.6	0	7.6	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
Pad Bike Factor	0.94	0.95	0.97	0.99	0.99	0.99	0.95	0.91	0.96	0.91	0.96
Frt	0.943	0.943	0.943	0.991	0.991	0.991	0.944	0.963	0.944	0.963	0.963
Flt Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (prot)	1562	1596	0	1681	1756	0	1261	1631	0	1681	1785
Flt Permitted	0.448	0.448	0.448	0.250	0.250	0.250	0.033	0.614	0.614	0.614	0.614
Satd. Flow (perm)	694	1596	0	428	1756	0	123	1631	0	986	1785
Right Turn on Red	Yes										
Satd. Flow (RTOR)	28	48	0	3	3	0	33	18	0	33	18
Link Speed (k/h)	48	48	0	50	50	0	50	50	0	50	50
Link Distance (m)	363.2	363.2	0	207.4	207.4	0	628.6	578.8	0	628.6	578.8
Travel Time (s)	27.2	27.2	0	14.9	14.9	0	45.3	41.7	0	45.3	41.7
Intersection Summary											
Area Type: Other											

Future Total 2031 Without Improvements - AM Peak 5:15 pm 05-11-2023

Timings
1: The Gore Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	70	278	154	446	11	122	100	545	100	545	545
Traffic Volume (vph)	70	278	154	446	11	122	100	545	100	545	545
Future Volume (vph)	70	278	154	446	11	122	100	545	100	545	545
Turn Type	Perm	NA	pm-rpt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Protected Phases	4	3	8	2	2	6	6	6	6	6	6
Permitted Phases	4	3	8	2	2	6	6	6	6	6	6
Detector Phases	4	3	8	2	2	6	6	6	6	6	6
Switch Phase	4	3	8	2	2	6	6	6	6	6	6
Minimum Initial (s)	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	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Total Split (s)	46.6	46.6	12.0	58.6	61.4	61.4	61.4	61.4	61.4	61.4	61.4
Total Split (%)	38.8%	38.8%	10.0%	48.8%	51.2%	51.2%	51.2%	51.2%	51.2%	51.2%	51.2%
Yellow Time (s)	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	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
Total Lost Time (s)	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	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Min	C-Min	None	C-Min	None	C-Min	Min	Min	Min	Min	Min
Act Effct Green (s)	42.3	42.3	57.6	55.0	51.8	51.8	51.8	51.8	51.8	51.8	51.8
Actuated g/C Ratio	0.35	0.35	0.48	0.46	0.43	0.43	0.43	0.43	0.43	0.43	0.43
v/C Ratio	0.29	0.29	0.52	0.59	0.21	0.27	0.24	0.24	0.24	0.24	0.24
Control Delay	33.7	43.9	25.9	28.5	31.5	18.4	22.3	22.3	22.3	22.3	22.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.7	43.9	25.9	28.5	31.5	18.4	22.3	22.3	22.3	22.3	22.3
LOS	C	D	C	C	C	C	B	C	B	C	D
Approach Delay	42.6	42.6	27.8	19.1	47.4	47.4	47.4	47.4	47.4	47.4	47.4
Approach LOS	D	D	C	B	D	D	D	D	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: 90											
Control Type: Actuated-Coordinated											
Maximum v/C Ratio: 0.93											
Intersection Signal Delay: 37.9											
Intersection Capacity Utilization 111.1%											
Analysis Period (min) 15											



Future Total 2031 Without Improvements - AM Peak 5:15 pm 05-11-2023

Queues
1: The Gore Rd & King St

	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	70	449	154	473	11	195	100	725
Lane Group Flow (vph)	0.29	0.78	0.52	0.59	0.21	0.27	0.24	0.93
v/c Ratio	33.7	43.9	25.9	28.5	31.5	18.4	22.3	50.8
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	33.7	43.9	25.9	28.5	31.5	18.4	22.3	50.8
Total Delay	13.0	97.1	22.0	87.2	1.6	23.5	14.5	154.9
Queue Length 50th (m)	26.2	#148.5	36.3	123.9	6.9	39.9	26.9	#231.4
Queue Length 95th (m)	339.2		183.4		604.6		554.8	
Internal Link Dist (m)		139.9		199.9		175.0		
Turn Bay Length (m)		246	584	297	807	56	762	450
Base Capacity (vph)	0	0	0	0	0	0	0	0
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	0.28	0.77	0.52	0.59	0.20	0.26	0.22	0.88

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

Movement	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EB	EB	WB	WB	NB	NB	SB	SB	SB
Traffic Volume (vph)	70	278	171	154	446	27	11	122	73
Future Volume (vph)	70	278	171	154	446	27	11	122	73
Ideal Flow (vphpl)	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	3.4
Total Lost time (s)	6.6	6.6	4.0	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
Frbp. ped/bikes	1.00	0.95	1.00	0.99	1.00	0.99	1.00	0.95	1.00
Frb. ped/bikes	0.94	1.00	0.99	1.00	1.00	1.00	1.00	0.91	1.00
Flt	1.00	0.94	1.00	0.99	1.00	0.99	1.00	0.94	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1469	1596	1669	1757	1261	1631	1526	1784	1784
Flt Permitted	0.45	1.00	0.25	1.00	0.09	1.00	0.61	1.00	0.61
Satd. Flow (perm)	683	1596	439	1757	124	1631	987	1784	1784
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	70	278	171	154	446	27	11	122	73
RTOR Reduction (vph)	0	18	0	0	2	0	0	19	0
Lane Group Flow (vph)	70	431	0	154	471	0	11	176	0
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%
Turn Type	Perm	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	4		3	8	2		2		6
Permitted Phases	4		8		2		6		6
Actuated Green, G (s)	42.2	42.2	55.0	55.0	51.8	51.8	51.8	51.8	51.8
Effective Green, g (s)	42.2	42.2	55.0	55.0	51.8	51.8	51.8	51.8	51.8
Actuated g/C Ratio	0.35	0.35	0.46	0.46	0.43	0.43	0.43	0.43	0.43
Clearance Time (s)	6.6	6.6	4.0	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
Lane Grp Cap (vph)	243	561	291	805	53	704	426	770	770
v/s Ratio Prot	c0.27		0.04	c0.27	0.11		0.10		c0.40
v/s Ratio Perm	0.10		0.20		0.09		0.10		0.10
v/c Ratio	0.29	0.77	0.53	0.59	0.21	0.25	0.23	0.93	0.93
Uniform Delay, d1	28.1	34.6	22.1	24.1	21.3	21.7	21.6	32.3	32.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	9.7	1.7	3.1	1.9	0.2	0.3	17.2	17.2
Delay (s)	31.0	44.3	23.9	27.2	23.2	21.9	21.9	49.5	49.5
Level of Service	C	D	C	C	C	C	C	D	D
Approach Delay (s)	42.5		26.4		22.0		46.2		46.2
Approach LOS	D		C		C		D		D

Intersection Summary	HCM 2000 Control Delay	HCM 2000 Level of Service
HCM 2000 Control Delay	37.3	D
HCM 2000 Volume to Capacity ratio	0.84	
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	111.1%	ICU Level of Service
Analysis Period (min)	15	H

c Critical Lane Group

Lanes and Geometrics

2: Humber Station Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
Lane Width (m)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Grade (%)	50.0	50.0	50.0	25.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0
Storage Length (m)	0	0	0	0	0	0	0	0	0	0	0
Storage Lanes	7.6	7.6	7.6	0.0	0.0	0.0	0.0	0.0	7.6	0.0	0.0
Taper Length (m)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.96	0.956	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985	0.985
Pad Bike Factor	0.998	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994
Frt Protected	0	1640	0	0	1779	0	0	1397	0	0	1477
Satd. Flow (prot)	0.948	0.780	0.713	0.713	0.713	0.713	0.713	0.713	0.713	0.713	0.713
Fit Permitted	0	1556	0	0	1392	0	0	996	0	0	1173
Satd. Flow (perm)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Right Turn on Red	30	7	7	7	7	7	7	7	7	7	8
Satd. Flow (RTOR)	50	50	50	50	50	50	50	50	50	50	50
Link Speed (k/h)	329.7	840.4	348.5	348.5	348.5	348.5	348.5	348.5	348.5	348.5	348.5
Link Distance (m)	23.7	60.5	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.0
Travel Time (s)	Intersection Summary										
Area Type:	Other										

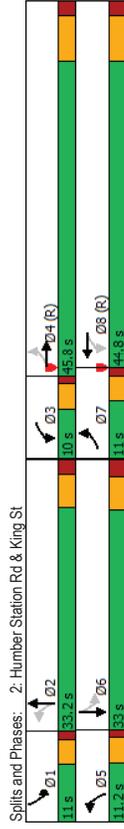
Future Total 2031 Without Improvements - AM Peak 5:15 pm 05-11-2023

Timings

2: Humber Station Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	39	515	73	515	64	82	184	226	184	226	226
Traffic Volume (vph)	39	515	73	515	64	82	184	226	184	226	226
Future Volume (vph)	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt
Turn Type	7	4	3	8	5	2	1	6	2	1	6
Protected Phases	4	8	2	6	6	6	6	6	6	6	6
Permitted Phases	7	4	3	8	5	2	1	6	2	1	6
Detector Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Switch Phase	11.0	31.4	10.0	31.4	11.2	30.0	11.0	30.2	11.0	30.2	30.2
Minimum Initial (s)	11.0	45.8	10.0	44.8	11.2	33.2	11.0	33.0	11.0	33.0	33.0
Minimum Split (s)	11.0%	45.8%	10.0%	44.8%	11.2%	33.2%	11.0%	33.0%	11.0%	33.0%	33.0%
Total Split (%)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0	3.0	4.0	4.0
Yellow Time (s)	1.0	2.0	1.0	2.0	1.0	2.0	1.0	2.2	1.0	2.2	2.2
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	7.4	7.4	7.4	7.4	6.0	6.2	6.2	6.2	6.2	6.2	6.2
Total Lost Time (s)	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag
Lead/Lag	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead-Lag Optimize?	None	C-Min	None	C-Min	None	None	None	None	None	None	Min
Recall Mode	48.4	48.4	48.4	48.4	38.2	38.0	38.0	38.0	38.0	38.0	38.0
Act Effct Green (s)	0.48	0.48	0.48	0.48	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Actuated g/C Ratio	1.07	0.97	0.97	0.97	0.43	1.05	1.05	1.05	1.05	1.05	1.05
v/C Ratio	79.9	55.2	26.1	55.2	26.1	87.5	87.5	87.5	87.5	87.5	87.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	79.9	55.2	26.1	55.2	26.1	87.5	87.5	87.5	87.5	87.5	87.5
Total Delay	E	E	E	E	C	F	F	F	F	F	F
LOS	E	E	E	E	C	F	F	F	F	F	F
Approach Delay	E	E	E	E	C	F	F	F	F	F	F
Approach LOS	Intersection Summary										
Cycle Length: 100	Cycle Length: 100										
Actuated Cycle Length: 100	Actuated Cycle Length: 100										
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green										
Natural Cycle: 145	Natural Cycle: 145										
Control Type: Actuated-Coordinated	Control Type: Actuated-Coordinated										
Maximum v/C Ratio: 1.07	Maximum v/C Ratio: 1.07										
Intersection Signal Delay: 69.7	Intersection Signal Delay: 69.7										
Intersection Capacity Utilization 103.5%	Intersection Capacity Utilization 103.5%										
Analysis Period (min) 15	Analysis Period (min) 15										



Future Total 2031 Without Improvements - AM Peak 5:15 pm 05-11-2023

	EBT	WBT	NBT	SBT
Lane Group	824	659	164	472
Volume Flow (vph)	1.07	0.97	0.43	1.05
v/c Ratio	79.9	55.2	26.1	87.5
Control Delay	0.0	0.0	0.0	0.0
Queue Delay	79.9	55.2	26.1	87.5
Total Delay	~182.5	123.8	22.9	~103.1
Queue Length 50th (m)	#256.4	#203.8	42.0	#165.5
Queue Length 95th (m)	305.7	816.4	324.5	323.2
Internal Link Dist (m)				
Turn Bay Length (m)	768	677	384	450
Base Capacity (vph)	0	0	0	0
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	1.07	0.97	0.43	1.05

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4		4			4	4			4	4
Traffic Volume (vph)	39	515	270	73	515	71	64	82	18	184	226	62
Future Volume (vph)	39	515	270	73	515	71	64	82	18	184	226	62
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.96			0.99			0.99				0.98	
Frbp. ped/bikes	1.00			1.00			0.99				0.97	
Frt	0.96			0.99			0.99				0.98	
Frt Protected	1.00			0.99			0.98				0.98	
Sat'd. Flow (prot)	1637			1777			1377				1433	
Flt Permitted	0.95			0.78			0.71				0.81	
Sat'd. Flow (perm)	1556			1394			1001				1176	
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	515	270	73	515	71	64	82	18	184	226	62
RTOR Reduction (vph)	0	15	0	0	4	0	0	4	0	0	5	0
Lane Group Flow (vph)	0	809	0	0	655	0	0	160	0	0	467	0
Conf. Peds. (#/hr)	50	50	50	50	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	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)	753			674			382			446		
v/s Ratio Prot	c0.52			0.47			0.16			c0.40		
v/c Ratio Perm	1.07			0.97			0.42			1.05		
Uniform Delay, d1	25.8			25.1			22.7			31.0		
Progression Factor	1.00			1.00			1.00			1.00		
Incremental Delay, d2	54.4			27.7			0.7			55.5		
Delay (s)	80.2			52.9			23.5			86.5		
Level of Service	F			D			C			F		
Approach Delay (s)	80.2			52.9			23.5			86.5		
Approach LOS	F			D			C			F		
Intersection Summary												
HCM 2000 Control Delay				68.7			HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio				1.17								
Actuated Cycle Length (s)				100.0			Sum of lost time (s)			21.6		
Intersection Capacity Utilization				103.5%			ICU Level of Service			G		
Analysis Period (min)				15								
c Critical Lane Group												

Lanes and Geometrics
6: King St & Street JJ

05-16-2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.7	3.7	3.7
Lane Width (m)	0%	0%	0%	0%	0%	0%
Grade (%)	50.0			25.0	0.0	0.0
Storage Length (m)	1			1	1	0
Taper Length (m)	7.6			0.0	0.0	0.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.96			0.85	0.90	
Frt	0.950			0.850	0.967	
Flt Protected	1730	1883	1883	1601	1707	0
Satd. Flow (prot)	0.372			0.964	0.964	
Satd. Flow (perm)	652	1883	1883	1361	1587	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)		50	50	63	22	
Link Speed (k/h)				110.9	300.5	262.0
Link Distance (m)				8.0	21.6	18.9
Travel Time (s)						
Intersection Summary						
Area Type: Other						

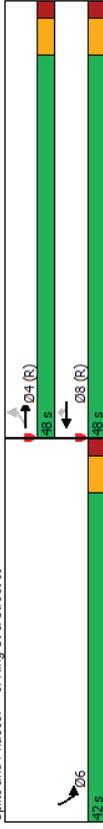
Timings
6: King St & Street JJ

05-16-2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	34	429	524	106	335	335
Traffic Volume (vph)	34	429	524	106	335	335
Future Volume (vph)	Perm	NA	NA	Perm	Prot	Prot
Turn Type	4	8	8	6	6	6
Permitted Phases	4	4	8	8	6	6
Detector Phases	4	4	8	8	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	23.0	23.0	23.0	23.0	30.0	30.0
Minimum Split (s)	48.0	48.0	48.0	48.0	42.0	42.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%
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	C-Min	C-Min
Act Effct Green (s)	50.1	50.1	50.1	50.1	27.9	27.9
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.31	0.31
v/C Ratio	0.09	0.41	0.50	0.14	0.82	0.82
Control Delay	12.7	14.4	12.2	4.7	39.2	39.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	14.4	12.2	4.7	39.2	39.2
LOS	B	B	B	A	D	D
Approach Delay	14.3	10.9			39.2	
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: 0.82						
Intersection Signal Delay: 20.1						
Intersection Capacity Utilization 64.5%						
Analysis Period (min) 15						

Splits and Phases: 6: King St & Street JJ





	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	34	429	524	106	445	
Lane Group Flow (vph)	0.09	0.41	0.50	0.14	0.82	
v/c Ratio	12.7	14.4	12.2	4.7	39.2	
Control Delay	0.0	0.0	0.0	0.0	0.0	
Queue Delay	12.7	14.4	12.2	4.7	39.2	
Total Delay	2.7	41.8	63.3	6.4	69.5	
Queue Length 50th (m)	9.1	77.3	112.5	12.8	93.0	
Queue Length 95th (m)	50.0	86.9	276.5	238.0		
Internal Link Dist (m)	362	1047	784	696		
Turn Bay Length (m)	0	0	0	0	0	
Base Capacity (vph)	0	0	0	0	0	
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	0.09	0.41	0.50	0.14	0.64	
Intersection Summary						



	EBL	EBT	WBT	WBR	SBL	SBR
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	34	429	524	106	335	110
Traffic Volume (vph)	34	429	524	106	335	110
Future Volume (vph)	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpb)	3.4	3.7	3.7	3.7	3.7	3.7
Lane Width	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	1.00	1.00	0.85	0.97
Frbp. ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.96	1.00	1.00	1.00	0.85	0.97
Flt Protected	1653	1883	1883	1361	1706	
Satd. Flow (prot)	0.37	1.00	1.00	1.00	0.96	
Flt Permitted	648	1883	1883	1361	1706	
Satd. Flow (perm)	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	34	429	524	106	335	110
Adj. Flow (vph)	0	0	0	28	15	0
RTOR Reduction (vph)	34	429	524	78	430	0
Lane Group Flow (vph)	50	NA	NA	50	50	50
Conf. Peds. (#/hr)	Perm	NA	NA	Perm	Prot	
Turn Type	4	8			6	
Protected Phases						
Permitted Phases	4			8		
Actuated Green, G (s)	50.1	50.1	50.1	50.1	27.9	
Effective Green, g (s)	50.1	50.1	50.1	50.1	27.9	
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.31	
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)	360	1048	1048	757	528	
v/s Ratio Prot	0.23	c0.28			c0.25	
v/s Ratio Perm	0.05			0.06		
v/c Ratio	0.09	0.41	0.50	0.10	0.81	
Uniform Delay, d1	9.3	11.5	12.3	9.4	28.7	
Progression Factor	1.00	1.00	0.75	0.74	1.00	
Incremental Delay, d2	0.5	1.2	1.5	0.2	9.3	
Delay (s)	9.9	12.6	10.7	7.2	38.0	
Level of Service	A	B	B	A	D	
Approach Delay (s)	12.4	10.1		38.0		
Approach LOS	B	B		D		
Intersection Summary						
HCM 2000 Control Delay		18.9				B
HCM 2000 Volume to Capacity ratio		0.61				
Actuated Cycle Length (s)		90.0			12.0	C
Intersection Capacity Utilization		64.5%			ICU Level of Service	
Analysis Period (min)		15				
c Critical Lane Group						

Lanes and Geometrics

9: The Gore Rd & Street DDD

05-16-2023

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	W					
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.7	3.7	3.7	3.7	3.4	3.7
Lane Width (m)	0%	0%	0%	0%	50.0	0%
Grade (%)	0.0	0.0	0.0	0.0	7.6	0.0
Storage Length (m)	1	0	0	0	0	0
Storage Lanes	0.0	0.0	0.0	0.0	0.0	0.0
Taper Length (m)	0.0	0.0	0.0	0.0	7.6	0.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Pad Bike Factor	0.865		0.980			
Flt Protected						
Satd. Flow (prot)	1629	0	1846	0	0	1883
Flt Permitted						
Satd. Flow (perm)	1629	0	1846	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					

9: The Gore Rd & Street DDD

05-16-2023

	WBL	WBR	NBT	NBR	SBL	SBT
Movement	W					
Lane Configurations	0	13	200	34	0	870
Traffic Volume (veh/h)	0	13	200	34	0	870
Future Volume (Veh/h)	0	13	200	34	0	870
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	13	200	34	0	870
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					
Median storage (veh)	None					
Upstream signal (m)	212					
px_platoon unblocked	0.81					
vC_conflicting volume	1187					
vC1_stage 1 conf vol	317					
vC2_stage 2 conf vol	284					
vCu_unblocked vol	1112					
IC_single (s)	6.4					
IC_2 stage (s)	6.2					
IC_4 stage (s)	3.5					
IC_8 stage (s)	3.3					
p0_queue free %	100					
p0_capacity (veh/h)	98					
ICM_capacity (veh/h)	171					
ICM_capacity (veh/h)	663					
Direction_Lane #	WB 1	NB 1	SB 1			
Volume Total	13	234	870			
Volume Left	0	0	0			
Volume Right	13	34	0			
ESH	663	1700	1700			
Volume to Capacity	0.02	0.14	0.51			
Queue Length 95th (m)	0.5	0.0	0.0			
Control Delay (s)	10.5	0.0	0.0			
Lane LOS	B	B				
Approach Delay (s)	10.5	0.0	0.0			
Approach LOS	B	B				
Intersection Summary						
Average Delay	0.1					
Intersection Capacity Utilization	64.2%					
ICU Level of Service	C					
Analysis Period (min)	15					

Lanes and Geometrics
10: The Gore Rd & Street A

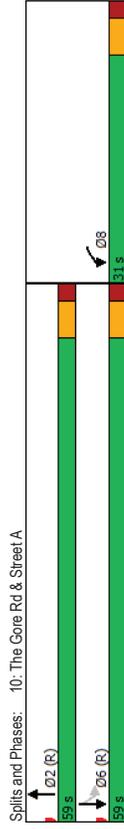
05-16-2023

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	W					
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.7	3.7	3.7	3.4	3.7	
Lane Width (m)	0%	0%	0%	0%	0%	
Grade (%)	0.0	0.0	0.0	50.0		
Storage Length (m)	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
Pad Bike Factor	0.90	0.98		0.90		
Frt	0.993	0.979		0.950		
Flt Protected	1774	0	1800	0	1730	1883
Satd. Flow (prot)	0.955			0.624		
Satd. Flow (perm)	1603	0	1800	0	1025	1883
Right Turn on Red	Yes	Yes	Yes	Yes		
Satd. Flow (RTOR)	3		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

05-16-2023

	WBL	NBT	SBL	SBT
Lane Group	W			
Lane Configurations	223	180	9	646
Traffic Volume (vph)	223	180	9	646
Future Volume (vph)	223	180	9	646
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases	8	2	6	6
Detector Phases				
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)	31.0	59.0	59.0	59.0
Total Split (%)	34.4%	65.6%	65.6%	65.6%
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)	17.0	61.0	61.0	61.0
Actuated g/C Ratio	0.19	0.68	0.68	0.68
v/C Ratio	0.70	0.17	0.01	0.51
Control Delay	44.3	8.9	6.3	9.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.3	8.9	6.3	9.7
LOS	D	A	A	A
Approach Delay	44.3	8.9	9.7	
Approach LOS	D	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: 0.70				
Intersection Signal Delay: 16.9				Intersection LOS: B
Intersection Capacity Utilization 61.4%				ICU Level of Service B
Analysis Period (min) 15				



10: The Gore Rd & Street A

05-16-2023

	WBL	NBT	SBL	SBT
Lane Group	236	214	9	646
Lane Group Flow (vph)	0.70	0.17	0.01	0.51
v/c Ratio	0.70	0.17	0.01	0.51
Control Delay	44.3	8.9	6.3	9.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.3	8.9	6.3	9.7
Queue Length 50th (m)	39.4	11.2	0.5	49.8
Queue Length 95th (m)	58.9	42.4	2.4	92.8
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	494	1225	694	1275
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.17	0.01	0.51
Intersection Summary				

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

05-16-2023

	WBL	WBR	NBT	NBR	SBL	SBT
Movement	W					
Lane Configurations	W					
Traffic Volume (vph)	223	13	180	34	9	646
Future Volume (vph)	223	13	180	34	9	646
Ideal Flow (vphpb)	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	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.99	0.98	0.98	1.00	1.00	1.00
Frbp. ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1773	1799	1799	1560	1883	1883
Flt Permitted	0.95	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	1773	1799	1799	1025	1883	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	223	13	180	34	9	646
RTOR Reduction (vph)	2	0	6	0	0	0
Lane Group Flow (vph)	234	0	208	0	9	646
Confl. Peds. (#/hr)	50	50	50	50	50	50
Turn Type	Prot	NA	NA	Perm	NA	NA
Protected Phases	8		2		6	
Permitted Phases					6	
Actuated Green, G (s)	17.0		61.0		61.0	
Effective Green, g (s)	17.0		61.0		61.0	
Actuated g/C Ratio	0.19		0.68		0.68	
Clearance Time (s)	6.0		6.0		6.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	334		1219		694	1276
v/s Ratio Prot	0.13		0.12		0.34	
v/c Ratio Perm					0.01	
v/c Ratio	0.70		0.17		0.01	0.51
Uniform Delay, d1	34.1		5.3		4.7	7.1
Progression Factor	1.00		1.51		1.00	1.00
Incremental Delay, d2	6.3		0.3		0.0	1.4
Delay (s)	40.4		8.3		4.7	8.6
Level of Service	D		A		A	A
Approach Delay (s)	40.4		8.3		8.5	
Approach LOS	D		A		A	
Intersection Summary						
HCM 2000 Control Delay			15.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			61.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics

1: The Gore Rd & King St

05-16-2023

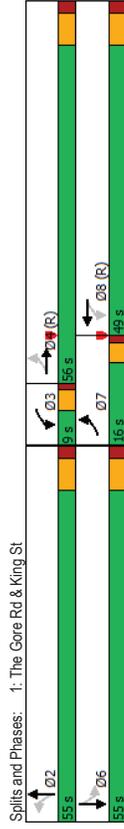
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
Grade (%)	0.0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	0.0	0.0	139.9	0.0	25.0	199.9	50.0	175.0	50.0	175.0	50.0
Storage Lanes	1	0	1	0	1	0	1	0	1	0	1
Taper Length (m)	0.0	7.6	7.6	0.0	7.6	7.6	0.0	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
Ped Bike Factor	0.99	0.99	0.98	0.98	0.94	0.97	0.98	0.97	0.98	0.96	0.96
Frt	0.950	0.994	0.974	0.974	0.950	0.968	0.959	0.968	0.959	0.959	0.959
Flt Protected	1562	1730	0	1681	1712	0	1261	1751	0	1681	1771
Satd. Flow (prot)	0.100	0.345	0.438	0.345	0.438	0.438	0.082	0.438	0.082	0.438	0.082
Satd. Flow (perm)	164	1730	0	581	1712	0	546	1751	0	145	1771
Right Turn on Red	Yes										
Satd. Flow (RTOR)	2	10	10	14	14	14	19	14	14	19	19
Link Speed (k/h)	48	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	363.2	207.4	207.4	628.6	628.6	628.6	578.8	628.6	578.8	628.6	578.8
Travel Time (s)	27.2	14.9	14.9	45.3	45.3	45.3	41.7	45.3	41.7	45.3	41.7
Intersection Summary											
Area Type:	Other										

Timings

1: The Gore Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	211	462	89	492	57	573	38	250	211	462	89
Traffic Volume (vph)	211	462	89	492	57	573	38	250	211	462	89
Future Volume (vph)	pm-plt	NA	pm-plt	NA	Perm	NA	Perm	NA	Perm	NA	Perm
Turn Type	7	4	3	8	2	6	6	6	6	6	6
Protected Phases	4	8	2	2	2	2	2	2	2	2	2
Permitted Phases	7	4	3	8	2	2	2	2	2	2	2
Detector Phase	7	4	3	8	2	2	2	2	2	2	2
Switch Phase	5.0	5.0	5.0	5.0	18.6	18.6	18.6	18.6	18.6	18.6	18.6
Minimum Initial (s)	11.0	30.6	9.0	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Minimum Split (s)	16.0	56.0	9.0	49.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0
Total Split (s)	13.3%	46.7%	7.5%	40.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%	45.8%
Total Split (%)	3.0	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Yellow Time (s)	1.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Time (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lost Time Adjust (s)	4.0	6.6	4.0	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost Time (s)	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lead
Total Lag (s)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead-Lag Optimize?	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None	C-Min	None
Recall Mode	60.7	49.1	49.7	42.1	48.7	48.7	48.7	48.7	48.7	48.7	48.7
Act Effect Green (s)	0.51	0.41	0.41	0.35	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Actuated g/C Ratio	0.95	0.68	0.31	0.98	0.26	1.01	0.66	0.47	0.66	0.47	0.47
v/C Ratio	76.0	34.7	19.5	69.7	27.9	72.3	80.5	27.4	80.5	27.4	27.4
Control Delay	76.0	34.7	19.5	69.7	27.9	72.3	80.5	27.4	80.5	27.4	27.4
Queue Delay	76.0	34.7	19.5	69.7	27.9	72.3	80.5	27.4	80.5	27.4	27.4
Total Delay	E	C	B	E	C	E	F	C	E	F	C
LOS	Approach Delay	47.3	63.2	69.1	32.6	69.1	32.6	69.1	32.6	69.1	32.6
Approach Delay	D	E	E	E	E	E	E	E	E	E	E
Approach LOS	Intersection Summary										
Cycle Length: 120	Cycle Length: 120										
Actuated Cycle Length: 120	Actuated Cycle Length: 120										
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green										
Natural Cycle: 110	Natural Cycle: 110										
Control Type: Actuated-Coordinated	Control Type: Actuated-Coordinated										
Maximum v/C Ratio: 1.01	Maximum v/C Ratio: 1.01										
Intersection Signal Delay: 56.1	Intersection Signal Delay: 56.1										
Intersection Capacity Utilization 106.1%	Intersection Capacity Utilization 106.1%										
Analysis Period (min) 15	Analysis Period (min) 15										



1: The Gore Rd & King St

05-16-2023



	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	211	482	89	593	57	728	38	344
v/c Ratio	0.95	0.68	0.31	0.98	0.26	1.01	0.66	0.47
Control Delay	76.0	34.7	19.5	69.7	27.9	72.3	80.5	27.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.0	34.7	19.5	69.7	27.9	72.3	80.5	27.4
Queue Length 50th (m)	34.3	94.3	10.9	140.0	9.2	~186.7	7.4	57.8
Queue Length 95th (m)	#83.2	133.9	20.2	#216.0	20.5	#262.4	#28.4	85.4
Internal Link Dist (m)	339.2		139.9	183.4	199.9	604.6	175.0	554.8
Turn Bay Length (m)			139.9		199.9		175.0	
Base Capacity (vph)	223	713	286	611	221	718	58	729
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	0.95	0.68	0.31	0.97	0.26	1.01	0.66	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: The Gore Rd & King St

05-16-2023



	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Traffic Volume (vph)	211	462	20	89	492	101	57	573	155
Future Volume (vph)	211	462	20	89	492	101	57	573	155
Ideal Flow (vphpl)	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	3.4
Total Lost time (s)	4.0	6.6	4.0	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
Frbp. ped/bikes	1.00	0.99	1.00	0.98	1.00	0.97	1.00	0.96	1.00
Frbp. ped/bikes	1.00	1.00	0.99	1.00	0.94	1.00	1.00	1.00	1.00
Frt	1.00	0.99	1.00	0.97	1.00	0.97	1.00	0.96	1.00
Flt Protected	0.95	1.00	0.95	1.00	0.95	1.00	0.95	1.00	0.95
Satd. Flow (prot)	1562	1730	1656	1713	1184	1751	1681	1771	1681
Flt Permitted	0.10	1.00	0.35	1.00	0.44	1.00	0.08	1.00	0.08
Satd. Flow (perm)	164	1730	602	1713	545	1751	145	1771	145
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	211	462	20	89	492	101	57	573	155
RTOR Reduction (vph)	0	1	0	0	6	0	0	8	0
Lane Group Flow (vph)	211	481	0	89	587	0	57	720	0
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%
Turn Type	pm-pt	NA	pm-pt	NA	pm	NA	pm	NA	NA
Protected Phases	7	4	3	8	2	2	6	6	6
Permitted Phases	4	8	8	8	2	2	6	6	6
Actuated Green, G (s)	58.1	49.1	47.1	42.1	48.7	48.7	48.7	48.7	48.7
Effective Green, g (s)	58.1	49.1	47.1	42.1	48.7	48.7	48.7	48.7	48.7
Actuated g/C Ratio	0.48	0.41	0.39	0.35	0.41	0.41	0.41	0.41	0.41
Clearance Time (s)	4.0	6.6	4.0	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
Lane Grp Cap (vph)	219	707	280	600	221	710	58	718	58
v/s Ratio Prot	c0.10	0.28	0.01	0.34	0.10	c0.41	0.19	0.19	0.19
v/s Ratio Perm	c0.37	0.11	0.11	0.11	0.10	0.26	0.26	0.26	0.26
v/c Ratio	0.96	0.68	0.32	0.98	0.26	1.01	0.66	0.46	0.46
Uniform Delay, d1	32.0	29.0	24.1	38.5	23.7	35.6	28.9	26.1	26.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	50.1	5.2	0.7	31.6	0.6	37.2	23.6	0.5	0.5
Delay (s)	82.1	34.2	24.8	70.1	24.3	72.9	52.4	26.6	26.6
Level of Service	F	C	C	E	C	E	D	C	C
Approach Delay (s)	48.8		64.2		69.3		29.1		29.1
Approach LOS	D		E		E		C		C

Intersection Summary

HCM 2000 Control Delay: 56.3
 HCM 2000 Level of Service: E
 HCM 2000 Volume to Capacity ratio: 1.01
 Actuated Cycle Length (s): 120.0
 Sum of lost time (s): 17.2
 Intersection Capacity Utilization: 106.1%
 ICU Level of Service: G
 Analysis Period (min): 15
 Critical Lane Group: c

Lanes and Geometrics
2: Humber Station Rd & King St

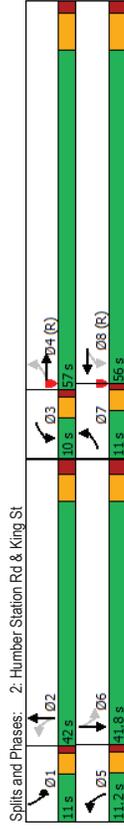
05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
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
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0
Storage Lanes	0	0	0	0	0	0	0	0	0	0	0
Taper Length (m)	7.6	7.6	7.6	7.6	7.6	7.6	7.6	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
Pad Bike Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Frt	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981	0.981
Flt Protected	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994	0.994
Satd. Flow (prot)	0	1711	0	0	1723	0	0	1475	0	0	1475
Flt Permitted	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659	0.659
Satd. Flow (perm)	0	1131	0	0	1682	0	0	1133	0	0	869
Right Turn on Red	Yes										
Satd. Flow (RTOR)	9	18	18	9	18	18	9	18	18	9	18
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7
Travel Time (s)	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
Intersection Summary											
Area Type: Other											

Timings
2: Humber Station Rd & King St

05-16-2023

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	102	607	18	661	166	363	115	154	154	154	154
Traffic Volume (vph)	102	607	18	661	166	363	115	154	154	154	154
Future Volume (vph)	pm-pt	NA	pm-pt								
Turn Type	7	4	3	8	5	2	1	6	6	6	6
Protected Phases	4	8	2	8	5	2	1	6	6	6	6
Detector Phases	7	4	3	8	5	2	1	6	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	11.0	31.4	10.0	31.4	11.2	30.2	11.0	30.2	11.0	30.2	30.2
Minimum Split (s)	11.0	57.0	10.0	56.0	11.2	42.0	11.0	41.8	11.0	41.8	41.8
Total Split (%)	9.2%	47.5%	8.3%	46.7%	9.3%	35.0%	9.2%	34.8%	9.2%	34.8%	34.8%
Yellow Time (s)	3.0	5.4	3.0	5.4	3.0	4.0	3.0	4.0	3.0	4.0	4.0
All-Red Time (s)	1.0	2.0	1.0	2.0	1.0	2.2	1.0	2.2	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
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	6.2	6.2	6.2	6.2	6.2	6.2
Lead/Lag	Lead	Lag	Lag								
Lead-Lag Optimize?	Yes										
Recall Mode	None	C-Min	None	C-Min	None						
Act Effct Green (s)	59.6	59.6	59.6	59.6	46.8	46.8	46.8	46.8	46.8	46.8	46.8
Actuated g/C Ratio	0.50	0.50	0.50	0.50	0.39	0.39	0.39	0.39	0.39	0.39	0.39
v/C Ratio	1.45	1.45	1.45	1.45	1.08	1.34	1.08	1.34	1.08	1.34	1.34
Control Delay	241.0	241.0	241.0	241.0	199.7	199.7	199.7	199.7	199.7	199.7	199.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	241.0	241.0	241.0	241.0	199.7	199.7	199.7	199.7	199.7	199.7	199.7
LOS	F	F	F	F	F	F	F	F	F	F	E
Approach Delay	241.0	241.0	241.0	241.0	199.7	199.7	199.7	199.7	199.7	199.7	199.7
Approach LOS	F	F	F	F	F	F	F	F	F	F	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: 145											
Control Type: Actuated-Coordinated											
Maximum v/C Ratio: 1.45											
Intersection Signal Delay: 157.1											
Intersection Capacity Utilization 147.6%											
Analysis Period (min) 15											



	EBT	WBT	NBT	SBT
Lane Group	823	911	597	316
Lane Group Flow (vph)	1.45	1.08	1.34	0.92
v/c Ratio	241.0	84.4	193.7	67.5
Control Delay	0.0	0.0	0.0	0.0
Queue Delay	241.0	84.4	193.7	67.5
Total Delay	~276.0	~247.2	~191.0	71.2
Queue Length 50th (m)	#353.7	#326.9	#262.4	#129.9
Queue Length 95th (m)	305.7	816.4	324.5	323.2
Internal Link Dist (m)				
Turn Bay Length (m)	566	844	445	343
Base Capacity (vph)	0	0	0	0
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	1.45	1.08	1.34	0.92

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.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		+			+			+			+	
Traffic Volume (vph)	102	607	114	18	661	232	166	363	68	115	154	47
Future Volume (vph)	102	607	114	18	661	232	166	363	68	115	154	47
Ideal Flow (vphpb)	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
Lane Util. Factor	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	0.98			0.96			0.98			0.98		0.98
Frbp. ped/bikes	1.00			1.00			0.98			0.99		0.99
Frt	0.98			0.97			0.98			0.98		0.98
Flt Protected	0.99			1.00			0.99			0.99		0.98
Satd. Flow (prot)	1711			1721			1460			1460		1460
Flt Permitted	0.66			0.98			0.77			0.59		0.59
Satd. Flow (perm)	1135			1682			1138			872		872
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)	102	607	114	18	661	232	166	363	68	115	154	47
RTOR Reduction (vph)	0	5	0	0	9	0	0	4	0	0	5	0
Lane Group Flow (vph)	0	818	0	0	902	0	0	593	0	0	311	0
Conf. Peds. (#/hr)	50	50	50	50	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	pm-pt	NA	pm-pt	NA
Protected Phases	7	4	3	8	5	2	1	2	1	6	6	6
Permitted Phases	4		8		2							
Actuated Green, G (s)	59.6		59.6		59.6		46.8		46.8		46.8	46.8
Effective Green, g (s)	59.6		59.6		59.6		46.8		46.8		46.8	46.8
Actuated g/C Ratio	0.50		0.50		0.50		0.39		0.39		0.39	0.39
Clearance Time (s)	7.4		7.4		7.4		6.2		6.2		6.2	6.2
Vehicle Extension (s)	3.0		3.0		3.0		3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	563		835		835		443		443		340	340
v/s Ratio Prot	c0.72		0.54		0.54		c0.52		c0.52		0.36	0.36
v/c Ratio Perm	1.45		1.08		1.08		1.34		1.34		0.92	0.92
Uniform Delay, d1	30.2		30.2		30.2		36.6		36.6		34.7	34.7
Progression Factor	1.00		1.00		1.00		1.00		1.00		1.00	1.00
Incremental Delay, d2	214.0		55.1		167.3		167.3		167.3		28.1	28.1
Delay (s)	244.2		85.3		203.9		203.9		203.9		62.8	62.8
Level of Service	F		F		F		F		F		E	E
Approach Delay (s)	244.2		85.3		203.9		203.9		203.9		62.8	62.8
Approach LOS	F		F		F		F		F		E	E
Intersection Summary												
HCM 2000 Control Delay			158.8				HCM 2000 Level of Service				F	F
HCM 2000 Volume to Capacity ratio			1.52									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)				21.6	21.6
Intersection Capacity Utilization			147.6%				ICU Level of Service				H	H
Analysis Period (min)			15									
c Critical Lane Group												

Lanes and Geometrics
6: King St & Street JJ

05-16-2023

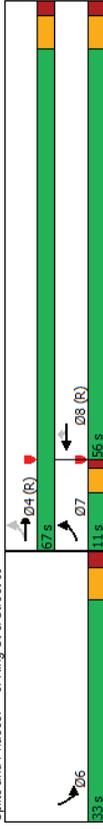
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)	50.0	0%	0%	25.0	0.0	0.0
Storage Length (m)	1	1	1	1	1	0
Taper Length (m)	7.6					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Pad Bike Factor				0.84	0.89	
Friction	0.950			0.850	0.965	
Satd. Flow (prot)	1730	1883	1883	1601	1697	0
Friction Permitted	0.288			0.964		
Satd. Flow (perm)	525	1883	1883	1338	1566	0
Right Turn on Red				Yes	Yes	Yes
Satd. Flow (RTOR)		50	50	139	17	
Link Speed (k/h)						50
Link Distance (m)		110.9	300.5		262.0	
Travel Time (s)		8.0	21.6		18.9	
Intersection Summary						
Area Type: Other						

Timings
6: King St & Street JJ

05-16-2023

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	95	566	617	287	214	214
Future Volume (vph)	95	566	617	287	214	214
Turn Type	pm+pt	NA	NA	Perm	Prot	Prot
Protected Phases	7	4	8		6	
Permitted Phases	4			8	8	6
Detector Phase	7	4	8	8	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	67.0	56.0	56.0	33.0	33.0
Total Split (%)	11.0%	67.0%	56.0%	56.0%	33.0%	33.0%
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	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	None
Act Effct Green (s)	69.0	67.0	58.0	58.0	21.0	21.0
Actuated g/C Ratio	0.69	0.67	0.58	0.58	0.21	0.21
v/C Ratio	0.21	0.45	0.57	0.34	0.78	0.78
Control Delay	7.3	10.1	16.7	8.9	49.3	49.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	10.1	16.7	8.9	49.3	49.3
LOS	A	B	B	A	D	D
Approach Delay	9.7	14.2		49.3		
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: 70						
Control Type: Actuated-Coordinated						
Maximum v/C Ratio: 0.78						
Intersection Signal Delay: 18.1						
Intersection Capacity Utilization 70.6%						
Analysis Period (min) 15						

Splits and Phases: 6: King St & Street JJ





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	95	566	617	287	288	
v/c Ratio	0.21	0.45	0.57	0.34	0.78	
Control Delay	7.3	10.1	16.7	8.9	49.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	7.3	10.1	16.7	8.9	49.3	
Queue Length 50th (m)	5.6	48.6	77.8	14.1	51.8	
Queue Length 95th (m)	13.2	86.0	60.5	24.2	75.4	
Internal Link Dist (m)		86.9	276.5		238.0	
Turn Bay Length (m)	50.0			25.0		
Base Capacity (vph)	449	1263	1094	835	472	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.45	0.56	0.34	0.61	
Intersection Summary						



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	95	566	617	287	214	74
Future Volume (vph)	95	566	617	287	214	74
Ideal Flow (vphpb)	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
Frbp. ped/bikes	1.00	1.00	1.00	0.84	0.97	
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flt	1.00	1.00	1.00	0.85	0.97	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1730	1883	1883	1338	1698	
Flt Permitted	0.29	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	524	1883	1883	1338	1698	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	95	566	617	287	214	74
RTOR Reduction (vph)	0	0	0	59	13	0
Lane Group Flow (vph)	95	566	617	228	275	0
Conf. 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)	67.0	67.0	57.2	57.2	21.0	
Effective Green, g (s)	67.0	67.0	57.2	57.2	21.0	
Actuated g/C Ratio	0.67	0.67	0.57	0.57	0.21	
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)	421	1261	1077	765	356	
v/s Ratio Prot	0.01	c0.30	c0.33		c0.16	
v/s Ratio Perm	0.14		0.17			
v/c Ratio	0.23	0.45	0.57	0.30	0.77	
Uniform Delay, d1	8.1	7.8	13.6	11.0	37.2	
Progression Factor	1.00	1.00	0.96	1.13	1.00	
Incremental Delay, d2	0.3	1.2	1.9	0.8	9.9	
Delay (s)	8.4	8.9	14.9	13.3	47.2	
Level of Service	A	A	B	B	D	
Approach Delay (s)		8.9	14.4		47.2	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			17.5			B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			100.0			16.0
Intersection Capacity Utilization			70.6%			C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics

9: The Gore Rd & Street DDD

05-16-2023

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

HCM Unsignalized Intersection Capacity Analysis

9: The Gore Rd & Street DDD

05-16-2023

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W					
Traffic Volume (veh/h)	0	9	806	127	0	401
Future Volume (Veh/h)	0	9	806	127	0	401
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	9	806	127	0	401
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	0.67	0.67			0.67	
vC, conflicting volume	1370	970			983	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1307	711			731	
IC, single (s)	6.4	6.2			4.1	
IC, 2 stage (s)						
p0 queue free %	3.5	3.3			2.2	
IF (s)	100	97			100	
cM capacity (veh/h)	109	267			562	
Direction_Lane #	WB 1	NB 1	SB 1			
Volume Total	9	933	401			
Volume Left	0	0	0			
Volume Right	9	127	0			
cSH	267	1700	1700			
Volume to Capacity	0.03	0.55	0.24			
Queue Length 95th (m)	0.8	0.0	0.0			
Control Delay (s)	19.0	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	19.0	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			68.0%			ICU Level of Service C
Analysis Period (min)			15			

Lanes and Geometrics

10: The Gore Rd & Street A

05-16-2023

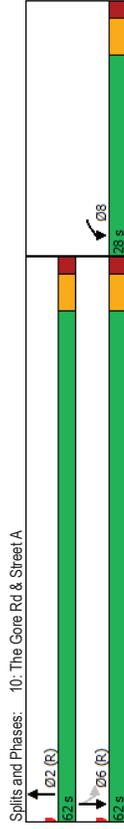
	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	W					
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.7	3.7	3.7	3.4	3.7	
Lane Width (m)	0%	0%	0%	0%	0%	
Grade (%)	0.0	0.0	0.0	50.0		
Storage Length (m)	1	0	0	7.6		
Taper Length (m)	0.0					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Pad Bike Factor	0.90		0.98			
Frt	0.992		0.979			
Flt Protected	0.965			0.950		
Satd. Flow (prot)	1772	0	1801	0	1730	1883
Flt Permitted	0.955			0.272		
Satd. Flow (perm)	1601	0	1801	0	495	1883
Right Turn on Red		Yes	Yes	Yes		
Satd. Flow (RTOR)	3		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

05-16-2023

	WBL	NBT	SBL	SBT
Lane Group	W			
Lane Configurations	150	688	31	250
Traffic Volume (vph)	150	688	31	250
Future Volume (vph)	Prot	NA	Perm	NA
Turn Type	8	2	6	6
Permitted Phases	8	2	6	6
Detector Phases	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)	13.9	64.1	64.1	64.1
Actuated g/C Ratio	0.15	0.71	0.71	0.71
v/C Ratio	0.57	0.63	0.09	0.19
Control Delay	41.8	10.8	6.2	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.8	10.8	6.2	5.5
LOS	D	B	A	A
Approach Delay	41.8	10.8	5.6	
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: 65				
Control Type: Actuated-Coordinated				
Maximum v/C Ratio: 0.63				
Intersection Signal Delay: 13.6				
Intersection Capacity Utilization 71.1%				
Analysis Period (min) 15				



10: The Gore Rd & Street A

05-16-2023

	WBL	NBT	SBL	SBT
Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	159	815	31	250
v/c Ratio	0.57	0.63	0.09	0.19
Control Delay	41.8	10.8	6.2	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.8	10.8	6.2	5.5
Queue Length 50th (m)	26.6	60.9	1.4	12.2
Queue Length 95th (m)	41.2	119.8	5.9	28.6
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	435	1287	352	1340
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	0.37	0.63	0.09	0.19
Intersection Summary				

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

05-16-2023

	WBL	WBR	NBT	NBR	SBL	SBT
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		P		P	↑
Traffic Volume (vph)	150	9	688	127	31	250
Future Volume (vph)	150	9	688	127	31	250
Ideal Flow (vphpb)	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	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.99	0.98	0.98	1.00	1.00	1.00
Frbp. ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1773	1801	1801	1690	1883	1883
Flt Permitted	0.95	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	1773	1801	1801	484	1883	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	9	688	127	31	250
RTOR Reduction (vph)	3	0	6	0	0	0
Lane Group Flow (vph)	156	0	809	0	31	250
Conf. Peds. (#/hr)	50	50	50	50	50	50
Turn Type	Prot	NA	NA	Perm	NA	NA
Protected Phases	8		2		6	
Permitted Phases					6	
Actuated Green, G (s)	13.9	64.1	64.1	64.1	64.1	64.1
Effective Green, g (s)	13.9	64.1	64.1	64.1	64.1	64.1
Actuated g/C Ratio	0.15	0.71	0.71	0.71	0.71	0.71
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)	273	1282	1282	344	1341	1341
v/s Ratio Prot	0.09	0.45	0.45	0.13	0.13	0.13
v/c Ratio Perm						
v/c Ratio	0.57	0.63	0.63	0.09	0.19	0.19
Uniform Delay, d1	35.3	6.8	6.8	4.0	4.3	4.3
Progression Factor	1.00	1.09	1.09	1.00	1.00	1.00
Incremental Delay, d2	2.9	2.0	2.0	0.5	0.3	0.3
Delay (s)	38.2	9.3	9.3	4.5	4.6	4.6
Level of Service	D	A	A	A	A	A
Approach Delay (s)	38.2	9.3	9.3	4.6	4.6	4.6
Approach LOS	D	A	A	A	A	A
Intersection Summary						
HCM 2000 Control Delay			11.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			71.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics

1: The Gore Rd & King St

Future Total 2031 With Improvements

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	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Lane Width (m)	0.0	0.0	0.0	139.9	25.0	199.9	50.0	175.0	50.0	175.0	50.0	50.0
Grade (%)	0.0	0.0	0.0	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Storage Length (m)	1	1	1	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
Storage Lanes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Taper Length (m)	0.93	0.86	0.94	0.86	0.97	0.86	0.89	0.86	0.89	0.86	0.89	0.86
Lane Util. Factor	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Pad Bike Factor	1562	1746	1585	1681	1779	1633	1261	1921	1432	1681	1921	1633
Fit Protected	0.505	0.479	0.56	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156	0.156
Satd. Flow (prot)	774	1746	1359	796	1779	1400	200	1921	1228	1075	1921	1400
Satd. Flow (perm)	Yes											
Right Turn on Red	48	171	50	33	50	73	50	73	50	73	50	73
Satd. Flow (RTOR)	363.2	27.2	207.4	628.6	45.3	41.7	578.8	41.7	578.8	41.7	578.8	41.7
Link Speed (k/h)	27.2	14.9	207.4	628.6	45.3	41.7	578.8	41.7	578.8	41.7	578.8	41.7
Link Distance (m)	27.2	14.9	207.4	628.6	45.3	41.7	578.8	41.7	578.8	41.7	578.8	41.7
Travel Time (s)	27.2	14.9	207.4	628.6	45.3	41.7	578.8	41.7	578.8	41.7	578.8	41.7
Area Type:	Other											
Intersection Summary												

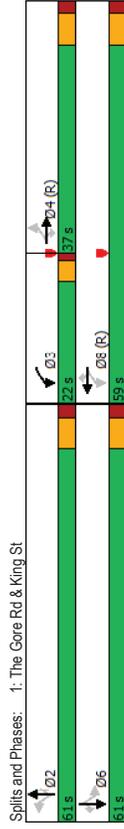
Timings

1: The Gore Rd & King St

Future Total 2031 With Improvements

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	70	278	171	154	446	27	11	122	73	100	545	180
Traffic Volume (vph)	70	278	171	154	446	27	11	122	73	100	545	180
Future Volume (vph)	Perm	NA	Perm	pmt-pt	NA	Perm	Perm	Perm	NA	Perm	NA	Perm
Turn Type	4	4	4	8	8	2	2	2	2	6	6	6
Protected Phases	4	4	4	3	3	8	8	8	2	2	2	2
Detector Phases	4	4	4	3	3	8	8	8	2	2	2	2
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6	30.6
Minimum Split (s)	37.0	37.0	37.0	22.0	22.0	59.0	61.0	61.0	61.0	61.0	61.0	61.0
Total Split (s)	30.8%	30.8%	30.8%	18.3%	18.3%	49.2%	49.2%	49.2%	50.8%	50.8%	50.8%	50.8%
Total Split (%)	4.6	4.6	4.6	3.0	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Yellow Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
All-Red Time (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
Lost Time Adjust (s)	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
Total Lost Time (s)	Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lag
Lead/Lag	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead-Lag Optimize?	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min	C-Min
Recall Mode	50.2	50.2	50.2	65.3	65.3	65.3	41.5	41.5	41.5	41.5	41.5	41.5
Act Effct Green (s)	0.42	0.42	0.42	0.57	0.57	0.57	0.35	0.35	0.35	0.35	0.35	0.35
Actuated g/C Ratio	0.22	0.38	0.26	0.29	0.29	0.26	0.03	0.16	0.18	0.15	0.27	0.82
v/C Ratio	29.4	29.1	5.5	15.8	20.3	4.8	29.5	26.2	5.6	28.2	46.0	8.8
Control 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
Queue Delay	29.4	29.1	5.5	15.8	20.3	4.8	29.5	26.2	5.6	28.2	46.0	8.8
Total Delay	C	C	A	B	C	A	C	C	A	C	D	A
LOS	21.4	18.5	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
Approach Delay	C	C	B	B	B	B	B	B	B	B	B	B
Approach LOS	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: 0.82											
Intersection Signal Delay: 25.8	Intersection LOS: C											
Intersection Capacity Utilization 93.8%	ICU Level of Service F											
Analysis Period (min) 15												



Queues
1: The Gore Rd & King St

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

Future Total 2031 With Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	70	278	171	154	446	27	11	122	73	100	545	180
Lane Group Flow (vph)	0.22	0.38	0.26	0.29	0.46	0.03	0.16	0.18	0.15	0.27	0.82	0.32
v/c Ratio	29.4	29.1	5.5	15.8	20.3	4.8	29.5	26.2	5.6	28.2	46.0	8.8
Control 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
Queue Delay	29.4	29.1	5.5	15.8	20.3	4.8	29.5	26.2	5.6	28.2	46.0	8.8
Total Delay	10.8	46.2	0.0	17.2	63.9	0.0	1.9	20.7	0.0	17.5	120.9	7.7
Queue Length 50th (m)	27.4	85.6	16.5	34.5	109.4	4.5	6.2	30.4	8.9	27.7	143.5	21.2
Internal Link Dist (m)	339.2											
Turn Bay Length (m)	139.9											
Base Capacity (vph)	323											
Starvation Cap Reductn	0											
Spillback Cap Reductn	0											
Storage Cap Reductn	0											
Reduced v/c Ratio	0.22	0.38	0.26	0.26	0.46	0.03	0.12	0.14	0.12	0.21	0.63	0.25

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	70	278	171	154	446	27	11	122	73	100	545	180
Traffic Volume (vph)	70	278	171	154	446	27	11	122	73	100	545	180
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph/b)	3.4	3.7	3.7	3.4	3.7	3.4	3.7	3.4	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	0.86	1.00
Frbp. ped/bikes	0.93	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.89	1.00	1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.85	1.00	0.85
Flt Protected	1457	1746	1359	1630	1779	1400	1261	1921	1228	1503	1921	1400
Satd. Flow (prot)	0.50	1.00	1.00	0.48	1.00	1.00	0.16	1.00	1.00	0.68	1.00	1.00
Flt Permitted	774	1746	1359	821	1779	1400	206	1921	1228	1074	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)	70	278	171	154	446	27	11	122	73	100	545	180
RTOR Reduction (vph)	0	0	99	0	0	12	0	0	48	0	0	87
Lane Group Flow (vph)	70	278	171	154	446	15	11	122	25	100	545	93
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	Perm	NA	Perm	pm-pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	4	4	3	8	8	2	2	2	2	6	6	6
Permitted Phases	4	4	8	8	8	2	2	2	2	6	6	6
Actuated Green, G (s)	50.2	50.2	50.2	65.3	65.3	65.3	41.5	41.5	41.5	41.5	41.5	41.5
Effective Green, g (s)	50.2	50.2	50.2	65.3	65.3	65.3	41.5	41.5	41.5	41.5	41.5	41.5
Actuated g/C Ratio	0.42	0.42	0.42	0.54	0.54	0.54	0.35	0.35	0.35	0.35	0.35	0.35
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)	323	730	568	521	968	761	71	664	424	371	664	464
v/s Ratio Prot	0.16	0.03	0.03	c0.25	c0.25	0.06	0.06	0.06	0.02	0.09	c0.28	0.07
v/s Ratio Perm	0.09	0.05	0.13	0.30	0.46	0.02	0.15	0.18	0.06	0.27	0.82	0.19
Uniform Delay, d1	22.3	24.1	21.4	14.3	16.6	12.6	27.1	27.4	26.2	28.3	35.9	27.5
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	1.5	1.5	0.5	0.3	1.6	0.0	1.0	0.1	0.1	0.4	8.0	0.2
Delay (s)	23.9	25.7	21.9	14.6	18.2	12.6	28.1	27.6	26.3	28.7	43.9	27.7
Level of Service	C	C	C	B	B	B	C	C	C	C	D	C
Approach Delay (s)	24.2			17.1			27.1			38.5		
Approach LOS	C			B			C			D		

Intersection Summary	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HCM 2000 Control Delay	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
HCM 2000 Volume to Capacity ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Actuated Cycle Length (s)	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
Intersection Capacity Utilization	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%
Analysis Period (min)	15											
c. Critical Lane Group	F											

Intersection Summary	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
HCM 2000 Control Delay	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8	27.8
HCM 2000 Volume to Capacity ratio	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62
Actuated Cycle Length (s)	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0
Intersection Capacity Utilization	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%	93.8%
Analysis Period (min)	15											
c. Critical Lane Group	F											

Lanes and Geometrics
2: Humber Station Rd & King St

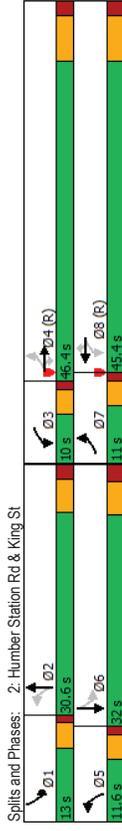
Future Total 2031 With Improvements
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1
Ideal Flow (vph)	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
Grade (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Storage Length (m)	50.0	25.0	50.0	25.0	50.0	25.0	0.0	0.0	0.0	50.0	0.0
Storage Lanes	1	1	1	1	1	1	0	0	0	1	0
Taper Length (m)	7.6	7.6	7.6	7.6	7.6	7.6	0.0	0.0	0.0	7.6	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
Ped Bike Factor	0.97	0.88	0.97	0.88	0.97	0.88	0.98	0.98	0.91	0.97	0.97
Ft	0.950	0.850	0.950	0.850	0.950	0.850	0.973	0.973	0.968	0.968	0.968
Flt Protected	1765	1762	1555	1697	1830	1633	1089	1642	0	1226	1645
Satd. Flow (prot)	0.316	0.316	0.288	0.288	0.288	0.288	0.490	0.490	0	0.573	0.573
Satd. Flow (perm)	569	1762	1365	497	1830	1434	528	1642	0	674	1645
Right Turn on Red	Yes										
Satd. Flow (RTOR)	129	129	129	129	129	129	10	10	10	13	13
Link Speed (k/h)	50	50	50	50	50	50	50	50	50	50	50
Link Distance (m)	329.7	840.4	348.5	348.5	348.5	348.5	25.1	25.1	25.1	347.2	347.2
Travel Time (s)	23.7	23.7	23.7	23.7	23.7	23.7	25.1	25.1	25.1	25.0	25.0
Intersection Summary											
Area Type:	Other										

Timings
2: Humber Station Rd & King St

Future Total 2031 With Improvements
Morning Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Lane Configurations	39	515	270	73	515	71	64	82	184	226	226
Traffic Volume (vph)	39	515	270	73	515	71	64	82	184	226	226
Future Volume (vph)	39	515	270	73	515	71	64	82	184	226	226
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA	pm+pt
Protected Phases	7	4	4	3	8	8	2	2	1	6	6
Permitted Phases	4	4	4	3	8	8	5	2	1	6	6
Detector Phase	7	4	4	3	8	8	5	2	1	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	14.4	5.0	14.4	14.4
Minimum Initial (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.0	11.0	30.2	30.2
Minimum Split (s)	11.0	46.4	46.4	10.0	45.4	45.4	11.6	30.6	13.0	32.0	32.0
Total Split (%)	11.0%	46.4%	46.4%	10.0%	45.4%	45.4%	11.6%	30.6%	13.0%	32.0%	32.0%
Yellow Time (s)	3.0	5.4	5.4	3.0	5.4	5.4	3.0	4.0	3.0	4.0	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	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
Total Lost Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.0	4.0	6.2	6.2
Lead/Lag	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead/Lag Optimize?	Yes										
Recall Mode	None	C-Min	None	C-Min	C-Min	None	None	Min	None	None	Min
Act Effct Green (s)	52.5	43.8	43.8	53.2	45.8	45.8	28.2	18.5	35.2	24.3	24.3
Actuated g/C Ratio	0.52	0.44	0.44	0.53	0.46	0.46	0.28	0.18	0.35	0.24	0.24
v/C Ratio	0.10	0.67	0.40	0.21	0.61	0.10	0.33	0.32	0.61	0.70	0.70
Control Delay	11.9	29.4	13.1	13.0	26.8	1.0	25.7	33.1	33.9	43.5	43.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.9	29.4	13.1	13.0	26.8	1.0	25.7	33.1	33.9	43.5	43.5
LOS	B	C	B	B	C	A	C	C	C	C	D
Approach Delay	23.2	22.5	22.5	22.5	22.5	22.5	30.2	30.2	39.8	39.8	39.8
Approach LOS	C	C	C	C	C	C	C	C	C	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: 85											
Control Type: Actuated-Coordinated											
Maximum v/C Ratio: 0.70											
Intersection Signal Delay: 27.2											
Intersection Capacity Utilization 77.8%											
Analysis Period (min) 15											



Queues
2: Humber Station Rd & King St

Future Total 2031 With Improvements
Morning Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group	39	515	270	73	515	71	64	100	184	288
Lane Group Flow (vph)	0.10	0.67	0.40	0.21	0.61	0.10	0.33	0.32	0.61	0.70
v/c Ratio	11.9	29.4	13.1	13.0	26.8	1.0	25.7	33.1	33.9	43.5
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	11.9	29.4	13.1	13.0	26.8	1.0	25.7	33.1	33.9	43.5
Total Delay	8.8	128.9	41.6	14.1	128.4	2.1	17.5	28.8	44.5	78.9
Queue Length 50th (m)										
Queue Length 95th (m)										
Internal Link Dist (m)		305.7			816.4			324.5		323.2
Turn Bay Length (m)	50.0		25.0			25.0			50.0	
Base Capacity (vph)	384	772	671	342	838	722	196	411	302	442
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	0.10	0.67	0.40	0.21	0.61	0.10	0.33	0.24	0.61	0.65
Intersection Summary										

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

Future Total 2031 With Improvements
Morning Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	39	515	270	73	515	71	64	82	18	184	226
Traffic Volume (vph)	39	515	270	73	515	71	64	82	18	184	226
Future Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph/b)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7
Lane Width	4.0	7.4	7.4	4.0	7.4	4.0	6.0	6.0	4.0	6.0	6.2
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	1.00	1.00	0.88	1.00	1.00	0.88	1.00	0.98	1.00	0.97	1.00
Frbp. ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00	0.95	1.00	1.00
Frbp. ped/bikes	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97	1.00	0.97	1.00
Flt	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	0.95	1.00	1.00
Flt Protected	1747	1762	1365	1683	1830	1434	1057	1642	1170	1644	1644
Satd. Flow (prot)	0.32	1.00	1.00	0.29	1.00	1.00	0.49	1.00	0.57	1.00	1.00
Flt Permitted	580	1762	1365	511	1830	1434	545	1642	705	1644	1644
Satd. Flow (perm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	39	515	270	73	515	71	64	82	18	184	226
Adj. Flow (vph)	0	0	75	0	0	40	0	8	0	10	0
RTOR Reduction (vph)	39	515	195	73	515	31	64	92	0	184	278
Lane Group Flow (vph)	50	50	50	50	50	50	50	50	50	50	50
Conf. Peds. (#/hr)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	25%
Heavy Vehicles (%)	pm-pt	NA	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA	pm-pt	NA
Turn Type	7	4	4	8	8	8	5	2	1	6	6
Permitted Phases	4	8	8	8	8	2	2	2	1	6	6
Actuated Green, G (s)	46.3	42.2	42.2	48.7	43.4	43.4	26.0	19.4	34.9	24.3	24.3
Effective Green, g (s)	46.3	42.2	42.2	48.7	43.4	43.4	26.0	19.4	34.9	24.3	24.3
Actuated g/C Ratio	0.46	0.42	0.42	0.49	0.43	0.43	0.26	0.19	0.35	0.24	0.24
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4	4.0	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
Lane Grp Cap (vph)	316	743	576	310	794	622	175	318	300	399	399
v/s Ratio Prot	0.01	c0.29	0.14	0.10	0.28	0.02	0.06	0.07	c0.07	c0.17	0.14
v/s Ratio Perm	0.05	0.14	0.14	0.10	0.28	0.02	0.06	0.07	0.14	0.14	0.14
v/c Ratio	0.12	0.69	0.34	0.24	0.65	0.05	0.37	0.29	0.61	0.70	0.70
Uniform Delay, d1	15.8	23.6	19.5	15.3	22.3	16.4	29.2	34.4	25.4	34.5	34.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.2	5.3	1.6	0.4	4.1	0.2	1.3	0.5	3.7	5.2	5.2
Delay (s)	16.0	28.9	21.1	15.7	26.4	16.5	30.5	34.9	29.1	39.7	39.7
Level of Service	B	C	C	B	C	B	C	C	C	D	D
Approach Delay (s)	C	C	C	C	C	C	C	C	C	C	C
Approach LOS	C	C	C	C	C	C	C	C	C	C	C
Intersection Summary											
HCM 2000 Control Delay			28.0				HCM 2000 Level of Service				C
HCM 2000 Volume to Capacity ratio			0.68								
Actuated Cycle Length (s)			100.0				Sum of lost time (s)				21.6
Intersection Capacity Utilization			77.8%				ICU Level of Service				D
Analysis Period (min)			15								
c. Critical Lane Group											

Lanes and Geometrics
6: King St & Street JJ

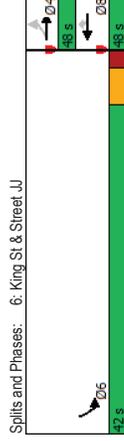
Future Total 2031 With Improvements
Morning Peak Hour

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.4	3.7	3.7	3.7	3.7	3.7
Lane Width (m)	3.4	3.7	3.7	3.7	3.7	3.7
Grade (%)	50.0	0%	0%	0%	0%	0%
Storage Length (m)	1	1	1	1	1	1
Storage Lanes	7.6	0.0	0.0	0.0	0.0	0.0
Taper Length (m)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.96	0.85	0.90	0.90	0.90	0.90
Pad Bike Factor	0.950	0.850	0.967	0.967	0.967	0.967
Flt Protected	1730	1883	1883	1601	1707	0
Satd. Flow (prot)	0.372	1883	1883	1361	1587	0
Satd. Flow (perm)	652	1883	1883	1361	1587	0
Right Turn on Red		Yes	Yes	Yes	Yes	Yes
Satd. Flow (RTOR)		50	50	63	22	22
Link Speed (k/h)		110.9	300.5	262.0	262.0	18.9
Link Distance (m)		8.0	21.6			
Travel Time (s)						
Intersection Summary	Other					
Area Type:	Other					

Timings
6: King St & Street JJ

Future Total 2031 With Improvements
Morning Peak Hour

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	34	429	524	106	335	335
Traffic Volume (vph)	34	429	524	106	335	335
Future Volume (vph)	Perm	NA	NA	Perm	Prot	Prot
Turn Type	4	4	8	8	6	6
Permitted Phases	4	4	8	8	6	6
Detector Phases	4	4	8	8	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	23.0	23.0	23.0	23.0	30.0	30.0
Minimum Split (s)	48.0	48.0	48.0	48.0	42.0	42.0
Total Split (%)	53.3%	53.3%	53.3%	53.3%	46.7%	46.7%
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	C-Min	C-Min
Act Effct Green (s)	50.1	50.1	50.1	50.1	27.9	27.9
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.31	0.31
v/C Ratio	0.09	0.41	0.50	0.14	0.82	0.82
Control Delay	12.7	14.4	10.0	3.6	39.2	39.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	14.4	10.0	3.6	39.2	39.2
LOS	B	B	A	A	D	D
Approach Delay	14.3	8.9				
Approach LOS	B	A			D	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: 0.82						
Intersection Signal Delay: 19.3						
Intersection Capacity Utilization 64.5%						
ICU Level of Service C						
Analysis Period (min) 15						



Queues
6: King St & Street JJ

Future Total 2031 With Improvements
Morning Peak Hour

	EBL	EBT	WBT	WBR	SBL
Lane Group	34	429	524	106	445
Lane Group Flow (vph)	0.09	0.41	0.50	0.14	0.82
v/c Ratio	12.7	14.4	10.0	3.6	39.2
Control Delay	0.0	0.0	0.0	0.0	0.0
Queue Delay	12.7	14.4	10.0	3.6	39.2
Total Delay	2.7	41.8	58.5	6.1	69.5
Queue Length 50th (m)	9.1	77.3	105.4	9.4	93.0
Queue Length 95th (m)	50.0	86.9	276.5	25.0	238.0
Internal Link Dist (m)	362	1047	784	696	
Turn Bay Length (m)	0	0	0	0	0
Base Capacity (vph)	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0.09	0.41	0.50	0.14	0.64
Reduced v/c Ratio					
Intersection Summary					

	EBL	EBT	WBT	WBR	SBL	SBR
Movement	34	429	524	106	445	110
Lane Configurations	34	429	524	106	335	110
Traffic Volume (vph)	34	429	524	106	335	110
Future Volume (vph)	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpb)	3.4	3.7	3.7	3.7	3.7	3.7
Lane Width	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.96	1.00	1.00	1.00	0.85	0.97
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.96	0.97
Flt Permitted	1653	1883	1883	1361	1706	1706
Satd. Flow (prot)	0.37	1.00	1.00	1.00	0.96	0.96
Satd. Flow (perm)	648	1883	1883	1361	1706	1706
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	429	524	106	335	110
RTOR Reduction (vph)	0	0	0	28	15	0
Lane Group Flow (vph)	34	429	524	78	430	0
Confl. Peds. (#/hr)	50	NA	NA	50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	Prot
Protected Phases	4	8	8	6	6	6
Permitted Phases	4	8	8	6	6	6
Actuated Green, G (s)	50.1	50.1	50.1	50.1	27.9	27.9
Effective Green, g (s)	50.1	50.1	50.1	50.1	27.9	27.9
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.31	0.31
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)	360	1048	1048	757	528	528
v/s Ratio Prot	0.23	0.28	0.28	0.25	0.25	0.25
v/s Ratio Perm	0.05	0.09	0.41	0.50	0.10	0.81
v/c Ratio	9.3	11.5	12.3	9.4	28.7	28.7
Uniform Delay, d1	1.00	1.00	0.60	0.55	1.00	1.00
Progression Factor	0.5	1.2	1.5	0.2	9.3	9.3
Incremental Delay, d2	9.9	12.6	8.8	5.4	38.0	38.0
Delay (s)	A	B	A	A	D	D
Level of Service	12.4	8.3	8.3	38.0	38.0	38.0
Approach Delay (s)	B	A	A	D	D	D
Approach LOS						
Intersection Summary						
HCM 2000 Control Delay	18.1	18.1	18.1	18.1	18.1	18.1
HCM 2000 Level of Service	B	B	B	B	B	B
HCM 2000 Volume to Capacity ratio	0.61	0.61	0.61	0.61	0.61	0.61
Actuated Cycle Length (s)	90.0	90.0	90.0	90.0	90.0	90.0
Sum of lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0
Intersection Capacity Utilization	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%
ICU Level of Service	C	C	C	C	C	C
Analysis Period (min)	15	15	15	15	15	15
c Critical Lane Group						

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

Future Total 2031 With Improvements
Morning Peak Hour

	EBL	EBT	WBT	WBR	SBL	SBR
Movement	34	429	524	106	445	110
Lane Configurations	34	429	524	106	335	110
Traffic Volume (vph)	34	429	524	106	335	110
Future Volume (vph)	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpb)	3.4	3.7	3.7	3.7	3.7	3.7
Lane Width	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.96	1.00	1.00	1.00	0.85	0.97
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.96	1.00	1.00	1.00	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.96	0.97
Flt Permitted	1653	1883	1883	1361	1706	1706
Satd. Flow (prot)	0.37	1.00	1.00	1.00	0.96	0.96
Satd. Flow (perm)	648	1883	1883	1361	1706	1706
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	34	429	524	106	335	110
RTOR Reduction (vph)	0	0	0	28	15	0
Lane Group Flow (vph)	34	429	524	78	430	0
Confl. Peds. (#/hr)	50	NA	NA	50	50	50
Turn Type	Perm	NA	NA	Perm	Prot	Prot
Protected Phases	4	8	8	6	6	6
Permitted Phases	4	8	8	6	6	6
Actuated Green, G (s)	50.1	50.1	50.1	50.1	27.9	27.9
Effective Green, g (s)	50.1	50.1	50.1	50.1	27.9	27.9
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.31	0.31
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)	360	1048	1048	757	528	528
v/s Ratio Prot	0.23	0.28	0.28	0.25	0.25	0.25
v/s Ratio Perm	0.05	0.09	0.41	0.50	0.10	0.81
v/c Ratio	9.3	11.5	12.3	9.4	28.7	28.7
Uniform Delay, d1	1.00	1.00	0.60	0.55	1.00	1.00
Progression Factor	0.5	1.2	1.5	0.2	9.3	9.3
Incremental Delay, d2	9.9	12.6	8.8	5.4	38.0	38.0
Delay (s)	A	B	A	A	D	D
Level of Service	12.4	8.3	8.3	38.0	38.0	38.0
Approach Delay (s)	B	A	A	D	D	D
Approach LOS						
Intersection Summary						
HCM 2000 Control Delay	18.1	18.1	18.1	18.1	18.1	18.1
HCM 2000 Level of Service	B	B	B	B	B	B
HCM 2000 Volume to Capacity ratio	0.61	0.61	0.61	0.61	0.61	0.61
Actuated Cycle Length (s)	90.0	90.0	90.0	90.0	90.0	90.0
Sum of lost time (s)	12.0	12.0	12.0	12.0	12.0	12.0
Intersection Capacity Utilization	64.5%	64.5%	64.5%	64.5%	64.5%	64.5%
ICU Level of Service	C	C	C	C	C	C
Analysis Period (min)	15	15	15	15	15	15
c Critical Lane Group						

Lanes and Geometrics
 9: The Gore Rd & Street DDD

Future Total 2031 With Improvements
 Morning Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	W					
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.7	3.7	3.7	3.7	3.4	3.7
Lane Width (m)	0%	0%	0%	0%	50.0	0%
Grade (%)	0.0	0.0	0.0	0.0	0.0	0.0
Storage Length (m)	1	0	0	0	7.6	0
Taper Length (m)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.865	0.980				
Pad Bike Factor						
Flt Protected	1629	0	1846	0	0	1883
Satd. Flow (prot)						
Flt Permitted	1629	0	1846	0	0	1883
Satd. Flow (perm)	50		50			50
Link Speed (k/h)	209.0	211.4				265.4
Link Distance (m)	15.0	15.2				19.1
Travel Time (s)						
Intersection Summary						
Area Type:	Other					

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

Future Total 2031 With Improvements
 Morning Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W					
Traffic Volume (veh/h)	0	13	200	34	0	870
Future Volume (Veh/h)	0	13	200	34	0	870
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	13	200	34	0	870
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
pk_platoon unblocked	0.81					
vC_conflicting volume	1187		317			284
vC1_stage 1 conf vol						
vC2_stage 2 conf vol						
vCu_unblocked vol	1112		317			284
IC_single (s)	6.4		6.2			4.1
IC_2 stage (s)						
p0_queue free %	3.5		3.3			2.2
IF (s)	100		98			100
qM capacity (veh/h)	171		663			1224
Direction_Lane #	WB 1	NB 1	SB 1			
Volume Total	13	234	870			
Volume Left	0	0	0			
Volume Right	13	34	0			
vSH	663	1700	1700			
Volume to Capacity	0.02	0.14	0.51			
Queue Length 95th (m)	0.5	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			0.1			
Intersection Capacity Utilization			64.2%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

Future Total 2031 With Improvements
Morning Peak Hour

WBL	WBR	NBT	NBR	SBL	SBT
W					
↑	↑	↑	↑	↑	↑
↖	↖	↖	↖	↖	↖
↗	↗	↗	↗	↗	↗
↓	↓	↓	↓	↓	↓

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.7	3.7	3.7	3.4	3.7	
Grade (%)	0%	0%	0%	0%	0%	
Storage Length (m)	0.0	0.0	0.0	50.0		
Taper Length (m)	1	0	0	1		
Storage Lanes	0	0	0	7.6		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Pad Bike Factor	0.90	0.98	0.98	0.90		
Frt	0.993	0.979		0.950		
Flt Protected						
Satd. Flow (prot)	1774	0	1800	0	1730	1883
Flt Permitted	0.955			0.624		
Satd. Flow (perm)	1603	0	1800	0	1025	1883
Right Turn on Red	Yes	Yes	Yes	Yes		
Satd. Flow (RTOR)	3	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

Future Total 2031 With Improvements
Morning Peak Hour

WBL	NBT	SBL	SBT
W			
↑	↑	↑	↑
↖	↖	↖	↖
↗	↗	↗	↗
↓	↓	↓	↓

Lane Group	WBL	NBT	SBL	SBT
Lane Configurations	223	180	9	646
Traffic Volume (vph)	223	180	9	646
Future Volume (vph)	223	180	9	646
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2	6	6
Permitted Phases	8	2	6	6
Detector Phases	8	2	6	6
Switch Phase	5.0	5.0	5.0	5.0
Minimum Initial (s)	28.0	25.0	25.0	25.0
Minimum Split (s)	31.0	59.0	59.0	59.0
Total Split (%)	34.4%	65.6%	65.6%	65.6%
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	17.0	61.0	61.0	61.0
Act Effct Green (s)	0.19	0.68	0.68	0.68
Actuated g/C Ratio	0.70	0.17	0.01	0.51
v/C Ratio	44.3	8.9	6.3	9.7
Control Delay	0.0	0.0	0.0	0.0
Queue Delay	44.3	8.9	6.3	9.7
Total Delay	D	A	A	A
LOS	D	A	A	A
Approach Delay	44.3	8.9	9.7	
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: 0.70				
Intersection Signal Delay: 16.9				
Intersection Capacity Utilization 61.4%				
ICU Level of Service B				
Analysis Period (min) 15				



Queues
10: The Gore Rd & Street A

Future Total 2031 With Improvements
Morning Peak Hour

	WBL	NBT	SBL	SBT
Lane Group	236	214	9	646
Lane Group Flow (vph)	0.70	0.17	0.01	0.51
v/c Ratio	0.70	0.17	0.01	0.51
Control Delay	44.3	8.9	6.3	9.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	44.3	8.9	6.3	9.7
Queue Length 50th (m)	39.4	11.2	0.5	49.8
Queue Length 95th (m)	58.9	42.4	2.4	92.8
Internal Link Dist (m)	295.0	241.4		350.2
Turn Bay Length (m)			50.0	
Base Capacity (vph)	494	1225	694	1275
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.48	0.17	0.01	0.51
Intersection Summary				

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

Future Total 2031 With Improvements
Morning Peak Hour

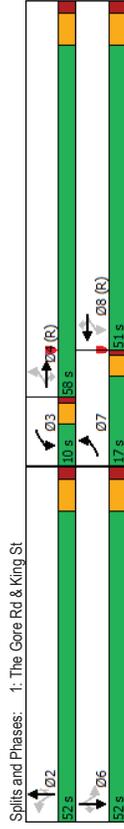
	WBL	WBR	NBT	NBR	SBL	SBT
Movement	W					
Lane Configurations	W					
Traffic Volume (vph)	223	13	180	34	9	646
Future Volume (vph)	223	13	180	34	9	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.7	3.7	3.7	3.7	3.4	3.7
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frbp. ped/bikes	0.99	0.98	0.98	1.00	1.00	1.00
Frbp. ped/bikes	1.00	1.00	1.00	0.90	1.00	1.00
Frt	0.95	1.00	0.98	1.00	0.95	1.00
Flt Protected	1.00	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1773	1799	1799	1560	1883	1883
Flt Permitted	0.95	1.00	1.00	0.62	1.00	1.00
Satd. Flow (perm)	1773	1799	1799	1025	1883	1883
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	223	13	180	34	9	646
RTOR Reduction (vph)	2	0	6	0	0	0
Lane Group Flow (vph)	234	0	208	0	9	646
Confl. Peds. (#/hr)	50	50	50	50	50	50
Turn Type	Prot	NA	NA	Perm	NA	NA
Protected Phases	8		2		6	
Permitted Phases					6	
Actuated Green, G (s)	17.0		61.0		61.0	
Effective Green, g (s)	17.0		61.0		61.0	
Actuated g/C Ratio	0.19		0.68		0.68	
Clearance Time (s)	6.0		6.0		6.0	
Vehicle Extension (s)	3.0		3.0		3.0	
Lane Grp Cap (vph)	334		1219		694	
v/s Ratio Prot	0.13		0.12		0.34	
v/c Ratio Perm					0.01	
v/c Ratio	0.70		0.17		0.01	
Uniform Delay, d1	34.1		5.3		4.7	
Progression Factor	1.00		1.51		1.00	
Incremental Delay, d2	6.3		0.3		0.0	
Delay (s)	40.4		8.3		4.7	
Level of Service	D		A		A	
Approach Delay (s)	40.4		8.3		8.5	
Approach LOS	D		A		A	
Intersection Summary						
HCM 2000 Control Delay			15.3		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			90.0		Sum of lost time (s)	12.0
Intersection Capacity Utilization			61.4%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes and Geometrics
1: The Gore Rd & King St

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vph)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Lane Width (m)	0.0	0.0	139.9	25.0	199.9	50.0	175.0	50.0	175.0	50.0	175.0	50.0
Storage Length (m)	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (m)	0.0	7.6	7.6	7.6	7.6	7.6	7.6	7.6	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
Pad Bike Factor	0.86	0.95	0.86	0.92	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Frt	0.950	0.950	0.950	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850
Flt Protected	1562	1746	1585	1681	1779	1633	1261	1921	1432	1681	1921	1633
Satd. Flow (prot)	0.273	0.393	0.393	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511	0.511
Right Turn on Red	Yes											
Satd. Flow (RTOR)	449	1746	1359	659	1779	1400	625	1921	1228	193	1921	1400
Link Speed (k/h)	48	69	69	105	105	105	105	105	105	105	105	105
Link Distance (m)	363.2	207.4	207.4	628.6	628.6	628.6	628.6	628.6	628.6	628.6	628.6	628.6
Travel Time (s)	27.2	14.9	14.9	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
Intersection Summary												
Area Type:	Other											

Timings
1: The Gore Rd & King St

	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	211	462	20	89	492	101	57	573	155	38	250	94
Traffic Volume (vph)	211	462	20	89	492	101	57	573	155	38	250	94
Future Volume (vph)	pm-pt	NA	Perm	pm-pt	NA	Perm	pm	Perm	NA	Perm	NA	Perm
Turn Type	7	4	4	3	8	8	2	2	2	6	6	6
Protected Phases	4	4	4	3	8	8	2	2	2	6	6	6
Detector Phases	7	4	4	3	8	8	2	2	2	6	6	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (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
Minimum Split (s)	17.0	58.0	58.0	10.0	51.0	51.0	52.0	52.0	52.0	52.0	52.0	52.0
Total Split (s)	14.2%	48.3%	48.3%	8.3%	42.5%	42.5%	43.3%	43.3%	43.3%	43.3%	43.3%	43.3%
Total Split (%)	3.0	4.6	4.6	3.0	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Yellow 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
All-Red Time (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
Lost Time Adjust (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
Total Lost Time (s)	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead/Lag	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lead/Lag Optimize?	None	C-Min	C-Min	None	C-Min	C-Min	None	C-Min	C-Min	None	C-Min	C-Min
Recall Mode	68.8	55.4	55.4	59.9	50.3	50.3	40.4	40.4	40.4	40.4	40.4	40.4
Act Effct Green (s)	0.57	0.46	0.46	0.50	0.42	0.42	0.34	0.34	0.34	0.34	0.34	0.34
Actuated g/C Ratio	0.57	0.57	0.03	0.23	0.86	0.16	0.27	0.89	0.32	0.58	0.39	0.17
v/C Ratio	20.1	28.4	0.1	14.8	35.1	5.1	31.1	53.9	11.4	68.8	31.4	4.5
Control Delay	20.1	28.4	0.1	14.8	35.1	5.1	31.1	53.9	11.4	68.8	31.4	4.5
Queue Delay	20.1	28.4	0.1	14.8	35.1	5.1	31.1	53.9	11.4	68.8	31.4	4.5
Total Delay	C	C	A	B	D	A	C	D	B	E	C	A
LOS	25.1	28.0	28.0	25.1	28.0	28.0	25.1	28.0	28.0	25.1	28.0	28.0
Approach Delay	C	C	C	C	C	C	C	C	C	C	C	C
Approach LOS	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: 0.89											
Intersection Signal Delay: 32.2	Intersection LOS: C											
Intersection Capacity Utilization 99.3%	ICU Level of Service F											
Analysis Period (min) 15												



Queues
1: The Gore Rd & King St

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

Future Total 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	211	462	20	89	492	101	57	573	155	38	250	94
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Traffic Volume (vph)	211	462	20	89	492	101	57	573	155	38	250	94
v/c Ratio	0.57	0.57	0.03	0.23	0.66	0.16	0.27	0.89	0.32	0.68	0.39	0.17
Control Delay	20.1	28.4	0.1	14.8	35.1	5.1	31.1	53.9	11.4	68.8	31.4	4.5
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	20.1	28.4	0.1	14.8	35.1	5.1	31.1	53.9	11.4	68.8	31.4	4.5
Queue Length 50th (m)	25.0	85.0	0.0	9.6	99.8	0.0	9.9	129.1	8.2	7.5	45.4	0.0
Queue Length 95th (m)	42.1	122.5	0.0	19.0	146.5	10.9	20.8	169.6	23.6	#24.7	65.1	9.1
Internal Link Dist (m)	183.4											
Turn Bay Length (m)	139.9											
Base Capacity (vph)	382											
Starvation Cap Reductn	0											
Spillback Cap Reductn	0											
Storage Cap Reductn	0											
Reduced v/c Ratio	0.55											
Intersection Summary												
# 95th percentile volume exceeds capacity, queue may be longer.	0											
Queue shown is maximum after two cycles.	0											

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	211	462	20	89	492	101	57	573	155	38	250	94
Lane Configurations	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Traffic Volume (vph)	211	462	20	89	492	101	57	573	155	38	250	94
Future Volume (vph)	211	462	20	89	492	101	57	573	155	38	250	94
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	3.4	3.7	3.4	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
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
Frbp. ped/bikes	0.99	1.00	1.00	0.98	1.00	0.92	1.00	1.00	0.92	1.00	1.00	0.92
Flt Protected	0.95	1.00	1.00	0.95	1.00	0.85	1.00	1.00	0.95	1.00	1.00	0.85
Flt Protected	1.00	1.00	1.00	0.95	1.00	0.85	1.00	1.00	0.95	1.00	1.00	0.85
Satd. Flow (prot)	1560	1746	1359	1650	1779	1400	1164	1921	1228	1681	1921	1400
Flt Permitted	0.27	1.00	1.00	0.39	1.00	0.51	1.00	1.00	0.11	1.00	1.00	1.00
Satd. Flow (perm)	445	1746	1359	683	1779	1400	626	1921	1228	1681	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)	211	462	20	89	492	101	57	573	155	38	250	94
RTOR Reduction (vph)	0	0	11	0	0	59	0	0	70	0	0	62
Lane Group Flow (vph)	211	462	9	89	492	42	57	573	85	38	250	32
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	13%	10%	3%	5%	8%	0%	40%	0%	14%	5%	0%	0%
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	7	4	4	3	8	8	2	2	2	2	6	6
Permitted Phases	4	4	4	8	8	8	2	2	2	2	6	6
Actuated Green, G (s)	66.4	55.4	55.4	57.2	50.2	50.2	40.4	40.4	40.4	40.4	40.4	40.4
Effective Green, g (s)	66.4	55.4	55.4	57.2	50.2	50.2	40.4	40.4	40.4	40.4	40.4	40.4
Actuated g/C Ratio	0.55	0.46	0.46	0.48	0.42	0.42	0.34	0.34	0.34	0.34	0.34	0.34
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)	358	806	627	381	744	585	210	646	413	64	646	471
v/s Ratio Prot	c0.06	0.26	0.01	0.10	c0.28	0.03	0.09	0.07	0.20	0.13	0.02	0.13
v/s Ratio Perm	0.27	0.59	0.57	0.23	0.66	0.07	0.27	0.89	0.21	0.59	0.39	0.07
v/c Ratio	0.59	0.57	0.01	0.23	0.66	0.07	0.27	0.89	0.21	0.59	0.39	0.07
Uniform Delay, d1	17.0	23.6	17.5	17.9	28.1	20.9	29.1	37.6	28.4	33.0	30.4	27.0
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	2.5	3.0	0.0	0.3	4.6	0.2	0.7	13.9	0.2	13.9	0.4	0.1
Delay (s)	19.5	26.6	17.6	18.2	32.6	21.2	29.8	51.5	28.6	46.9	30.7	27.1
Level of Service	B	C	B	B	C	C	C	D	C	D	C	C
Approach Delay (s)	24.2			29.1			45.4			31.4		
Approach LOS	C			C			D			C		
Intersection Summary												
HCM 2000 Control Delay	33.1											
HCM 2000 Volume to Capacity ratio	0.74											
Actuated Cycle Length (s)	120.0											
Intersection Capacity Utilization	98.3%											
Analysis Period (min)	15											
c Critical Lane Group	F											

Lanes and Geometrics
2: Humber Station Rd & King St

Future Total 2031 With Improvements
Afternoon Peak Hour

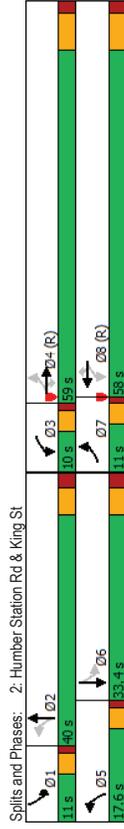
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	1	1	1	1	1	1	1	1	1	1	1	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7	3.4	3.7	3.7
Grade (%)	50.0	0%	25.0	50.0	0%	25.0	0.0	0.0	0.0	50.0	0%	0.0
Storage Length (m)	1	1	1	1	1	1	1	1	1	1	1	1
Taper Length (m)	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	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	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Frt	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Flt Protected	1765	1762	1555	1697	1830	1633	1089	1667	0	1226	1623	0
Satd. Flow (prot)	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129	0.129
Satd. Flow (perm)	240	1762	1334	447	1830	1400	473	1667	0	257	1623	0
Right Turn on Red	Yes											
Satd. Flow (RTOR)	50	138	138	50	138	138	50	138	50	138	12	50
Link Speed (k/h)	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7	329.7
Link Distance (m)	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7	23.7
Travel Time (s)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1
Other												

Area Type: Other

Timings
2: Humber Station Rd & King St

Future Total 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	102	607	114	18	661	232	166	363	115	154
Traffic Volume (vph)	102	607	114	18	661	232	166	363	115	154
Future Volume (vph)	102	607	114	18	661	232	166	363	115	154
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	4	3	8	8	2	5	2	1
Permitted Phases	4	4	4	3	8	8	5	2	1	6
Detector Phase	7	4	4	3	8	8	5	2	1	6
Switch Phase	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Initial (s)	11.0	31.4	31.4	10.0	31.4	31.4	11.2	30.2	11.0	30.2
Minimum Split (s)	11.0	59.0	59.0	10.0	58.0	58.0	17.6	40.0	11.0	33.4
Total Split (%)	9.2%	49.2%	49.2%	8.3%	48.3%	48.3%	14.7%	33.3%	9.2%	27.8%
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	Yes									
Lead-Lag Optimize?	None	C-Min	None	C-Min	C-Min	C-Min	None	None	None	None
Recall Mode	63.2	57.0	57.0	59.3	50.0	50.0	46.8	32.7	38.9	27.9
Act Effect Green (s)	0.53	0.48	0.48	0.49	0.42	0.42	0.39	0.27	0.32	0.23
Actuated g/C Ratio	0.48	0.73	0.16	0.06	0.87	0.35	0.66	0.94	0.75	0.52
v/C Ratio	21.4	32.7	2.6	13.6	45.6	11.1	40.0	71.3	59.0	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay	21.4	32.7	2.6	13.6	45.6	11.1	40.0	71.3	59.0	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	32.7	2.6	13.6	45.6	11.1	40.0	71.3	59.0	43.4
LOS	C	C	A	B	D	B	D	E	E	D
Approach Delay	27.1	36.2	36.2	27.1	36.2	36.2	27.1	36.2	27.1	36.2
Approach LOS	C	C	D	D	E	E	D	E	D	D
Intersection Summary										
Cycle Length: 120										
Actuated Cycle Length: 120										
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green										
Natural Cycle: 95										
Control Type: Actuated-Coordinated										
Maximum v/C Ratio: 0.94										
Intersection Signal Delay: 40.9										
Intersection Capacity Utilization 88.7%										
Analysis Period (min) 15										



Queues
2: Humber Station Rd & King St

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

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	607	114	18	661	232	166	431	115	201
v/c Ratio	0.48	0.73	0.16	0.06	0.87	0.35	0.66	0.94	0.75	0.52
Control Delay	21.4	32.7	2.6	13.6	45.6	11.1	40.0	71.3	59.0	43.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.4	32.7	2.6	13.6	45.6	11.1	40.0	71.3	59.0	43.4
Queue Length 50th (m)	11.8	108.0	0.0	2.0	145.6	14.2	28.5	100.3	18.5	41.0
Queue Length 95th (m)	20.8	177.4	7.3	5.6	#213.0	33.0	48.8	#161.3	#46.2	66.0
Internal Link Dist (m)		305.7		816.4		324.5		50.0		323.2
Turn Bay Length (m)	50.0		25.0	50.0		25.0		50.0		50.0
Base Capacity (vph)	216	837	706	284	782	678	257	475	153	389
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	0.47	0.73	0.16	0.06	0.85	0.34	0.65	0.91	0.75	0.52

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

HCM Signalized Intersection Capacity Analysis
Future Total 2031 With Improvements
2: Humber Station Rd & King St

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Traffic Volume (vph)	102	607	114	18	661	232	166	363	68	115	154
Future Volume (vph)	102	607	114	18	661	232	166	363	68	115	154
Ideal Flow (vph/b)	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
Total Lost time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	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
Frbp. ped/bikes	1.00	1.00	0.86	1.00	1.00	0.86	1.00	0.98	1.00	0.97	1.00
Frbp. ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	0.97	1.00	0.99	1.00	1.00
Frt	0.95	1.00	1.00	0.95	1.00	0.85	1.00	0.98	1.00	0.96	1.00
Flt Protected	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Satd. Flow (prot)	1765	1762	1334	1686	1830	1400	1055	1668	1216	1623	1623
Flt Permitted	0.13	1.00	1.00	0.25	1.00	1.00	0.45	1.00	0.21	1.00	1.00
Satd. Flow (perm)	239	1762	1334	444	1830	1400	495	1668	288	1623	1623
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
Adj. Flow (vph)	102	607	114	18	661	232	166	363	68	115	154
RTOR Reduction (vph)	0	0	62	0	0	81	0	6	0	0	9
Lane Group Flow (vph)	102	607	52	18	661	152	166	425	0	115	192
Conf. Peds. (#/hr)	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles (%)	0%	9%	5%	4%	5%	0%	62%	0%	63%	44%	6%
Turn Type	pm-pt	NA	Perm	pm-pt	NA	Perm	pm-pt	NA	pm-pt	NA	NA
Protected Phases	7	4	4	8	8	8	5	2	1	6	6
Permitted Phases	4		4	8	8	8	2		6		6
Actuated Green, G (s)	61.0	54.6	54.6	52.4	50.0	50.0	45.4	32.7	36.6	27.9	27.9
Effective Green, g (s)	61.0	54.6	54.6	52.4	50.0	50.0	45.4	32.7	36.6	27.9	27.9
Actuated g/C Ratio	0.51	0.46	0.46	0.44	0.42	0.42	0.38	0.27	0.31	0.23	0.23
Clearance Time (s)	4.0	7.4	7.4	4.0	7.4	7.4	4.0	6.2	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
Lane Grp Cap (vph)	210	801	606	218	762	583	250	454	150	377	377
v/s Ratio Prot	c0.03	0.34	0.04	0.00	c0.36	0.11	c0.07	c0.25	0.06	0.12	0.12
v/s Ratio Perm	0.22	0.04	0.03	0.00	0.11	0.18	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.49	0.76	0.09	0.08	0.87	0.26	0.66	0.94	0.77	0.51	0.51
Uniform Delay, d1	22.1	27.2	18.5	21.2	32.0	22.9	28.2	42.6	33.4	40.1	40.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.8	6.6	0.3	0.2	12.7	1.1	6.5	26.8	20.6	1.1	1.1
Delay (s)	23.8	33.8	18.8	21.3	44.7	24.0	34.7	69.4	54.0	41.2	41.2
Level of Service	C	C	B	C	D	C	C	E	D	D	D
Approach Delay (s)	C	C	C	D	D	D	E	E	D	D	D
Approach LOS	C	C	C	D	D	D	E	E	D	D	D

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Intersection Summary											
HCM 2000 Control Delay	41.9										D
HCM 2000 Volume to Capacity ratio	0.86										D
Actuated Cycle Length (s)	120.0										21.6
Intersection Capacity Utilization	88.7%										E
Analysis Period (min)	15										E
c. Critical Lane Group											D

Lanes and Geometrics
6: King St & Street JJ

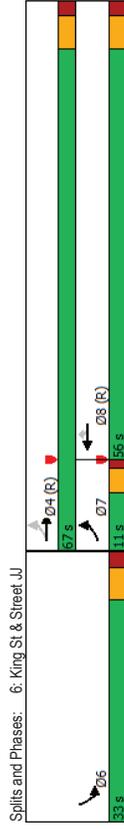
Future Total 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	95	566	617	287	214	214
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%	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					
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Pad Bike Factor				0.84	0.89	
Frt	0.950			0.850	0.965	
Flt Protected				0.964		
Satd. Flow (prot)	1730	1883	1883	1601	1697	0
Flt Permitted	0.288			0.964		
Satd. Flow (perm)	525	1883	1883	1338	1566	0
Right Turn on Red				Yes	Yes	
Satd. Flow (RTOR)		50	50	139	17	
Link Speed (k/h)						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 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	WBT	WBR	SBL
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations	95	566	617	287	214
Traffic Volume (vph)	95	566	617	287	214
Future Volume (vph)	95	566	617	287	214
Turn Type	pm+pt	NA	NA	Perm	Prot
Protected Phases	7	4	8		6
Permitted Phases	4			8	6
Detector Phases	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	67.0	56.0	56.0	33.0
Total Split (%)	11.0%	67.0%	56.0%	56.0%	33.0%
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	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	None
Recall Mode	None	C-Min	C-Min	C-Min	C-Min
Act Effct Green (s)	69.0	67.0	58.0	58.0	21.0
Actuated g/C Ratio	0.69	0.67	0.58	0.58	0.21
v/C Ratio	0.21	0.45	0.57	0.34	0.78
Control Delay	7.3	10.1	16.7	8.9	49.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	10.1	16.7	8.9	49.3
LOS	A	B	B	A	D
Approach Delay	9.7	14.2		49.3	
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: 70					
Control Type: Actuated-Coordinated					
Maximum v/C Ratio: 0.78					
Intersection Signal Delay: 18.1					
Intersection Capacity Utilization 70.6%					
Analysis Period (min) 15					



Queues
6: King St & Street JJ

Future Total 2031 With Improvements
Afternoon Peak Hour

	EBL	EBT	WBT	WBR	SBL
Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Group Flow (vph)	95	566	617	287	288
v/c Ratio	0.21	0.45	0.57	0.34	0.78
Control Delay	7.3	10.1	16.7	8.9	49.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	7.3	10.1	16.7	8.9	49.3
Queue Length 50th (m)	5.6	48.6	77.8	14.1	51.8
Queue Length 95th (m)	13.2	86.0	60.5	24.2	75.4
Internal Link Dist (m)		86.9	276.5		238.0
Turn Bay Length (m)	50.0			25.0	
Base Capacity (vph)	449	1263	1094	835	472
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.45	0.56	0.34	0.61
Intersection Summary					



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

Future Total 2031 With Improvements
Afternoon Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Volume (vph)	95	566	617	287	214	74
Future Volume (vph)	95	566	617	287	214	74
Ideal Flow (vphpb)	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
Frbp. ped/bikes	1.00	1.00	1.00	0.84	0.97	
Frbp. ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flt Protected	0.95	1.00	1.00	1.00	0.96	
Satd. Flow (prot)	1730	1883	1883	1338	1698	
Flt Permitted	0.29	1.00	1.00	1.00	0.96	
Satd. Flow (perm)	524	1883	1883	1338	1698	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	95	566	617	287	214	74
RTOR Reduction (vph)	0	0	0	59	13	0
Lane Group Flow (vph)	95	566	617	228	275	0
Conf. 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)	67.0	67.0	57.2	57.2	21.0	
Effective Green, g (s)	67.0	67.0	57.2	57.2	21.0	
Actuated g/C Ratio	0.67	0.67	0.57	0.57	0.21	
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)	421	1261	1077	765	356	
v/s Ratio Prot	0.01	c0.30	c0.33		c0.16	
v/s Ratio Perm	0.14			0.17		
v/c Ratio	0.23	0.45	0.57	0.30	0.77	
Uniform Delay, d1	8.1	7.8	13.6	11.0	37.2	
Progression Factor	1.00	1.00	0.96	1.13	1.00	
Incremental Delay, d2	0.3	1.2	1.9	0.8	9.9	
Delay (s)	8.4	8.9	14.9	13.3	47.2	
Level of Service	A	A	B	B	D	
Approach Delay (s)		8.9	14.4		47.2	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			17.5			B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			100.0			16.0
Intersection Capacity Utilization			70.6%			C
Analysis Period (min)			15			
c Critical Lane Group						



Lanes and Geometrics
 9: The Gore Rd & Street DDD

Future Total 2031 With Improvements
 Afternoon Peak Hour

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

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

Future Total 2031 With Improvements
 Afternoon Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W					
Traffic Volume (veh/h)	0	9	806	127	0	401
Future Volume (Veh/h)	0	9	806	127	0	401
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	0%	0%	0%	0%	0%	0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	9	806	127	0	401
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	0.67	0.67			0.67	
vC, conflicting volume	1370	970			983	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1307	711			731	
iC, single (s)	6.4	6.2			4.1	
iC, 2 stage (s)						
p0 queue free %	3.5	3.3			2.2	
IF (s)	100	97			100	
cM capacity (veh/h)	109	267			562	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	9	933	401			
Volume Left	0	0	0			
Volume Right	9	127	0			
cSH	267	1700	1700			
Volume to Capacity	0.03	0.55	0.24			
Queue Length 95th (m)	0.8	0.0	0.0			
Control Delay (s)	19.0	0.0	0.0			
Lane LOS	C					
Approach Delay (s)	19.0	0.0	0.0			
Approach LOS	C					
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			68.0%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes and Geometrics
10: The Gore Rd & Street A

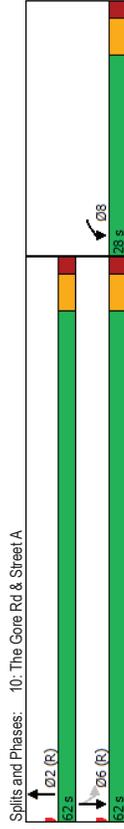
Future Total 2031 With Improvements
Afternoon Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Lane Group	W					
Lane Configurations	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	3.7	3.7	3.7	3.4	3.7	
Lane Width (m)	0%	0%	0%	0%	0%	
Grade (%)	0.0	0.0	0.0	50.0		
Storage Length (m)	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	0.992		0.979			
Flt Protected	0.965			0.950		
Satd. Flow (prot)	1772	0	1801	0	1730	1883
Flt Permitted	0.955			0.272		
Satd. Flow (perm)	1601	0	1801	0	495	1883
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	3		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

Future Total 2031 With Improvements
Afternoon Peak Hour

	WBL	NBT	SBL	SBT
Lane Group	W			
Lane Configurations	150	688	31	250
Traffic Volume (vph)	150	688	31	250
Future Volume (vph)	150	688	31	250
Turn Type	Prot	NA	Perm	NA
Protected Phases	8	2		6
Permitted Phases	8	2	6	6
Detector Phases	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)	13.9	64.1	64.1	64.1
Actuated g/C Ratio	0.15	0.71	0.71	0.71
v/C Ratio	0.57	0.63	0.09	0.19
Control Delay	41.8	10.8	6.2	5.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	41.8	10.8	6.2	5.5
LOS	D	B	A	A
Approach Delay	41.8	10.8	5.6	
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: 65				
Control Type: Actuated-Coordinated				
Maximum v/C Ratio: 0.63				
Intersection Signal Delay: 13.6				
Intersection Capacity Utilization 71.1%				
Analysis Period (min) 15				



Queues
10: The Gore Rd & Street A
Future Total 2031 With Improvements
Afternoon Peak Hour

	WBL	NBT	SBL	SBT
Lane Group	159	815	31	250
Lane Group Flow (vph)	0.57	0.63	0.09	0.19
v/c Ratio	41.8	10.8	6.2	5.5
Control Delay	0.0	0.0	0.0	0.0
Queue Delay	41.8	10.8	6.2	5.5
Total Delay	26.6	60.9	1.4	12.2
Queue Length 50th (m)	41.2	119.8	5.9	28.6
Queue Length 95th (m)	295.0	241.4	50.0	350.2
Internal Link Dist (m)				
Turn Bay Length (m)	435	1287	352	1340
Base Capacity (vph)	0	0	0	0
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	0.37	0.63	0.09	0.19
Intersection Summary				

HCM Signalized Intersection Capacity Analysis
10: The Gore Rd & Street A
Future Total 2031 With Improvements
Afternoon Peak Hour

	WBL	WBR	NBT	NBR	SBL	SBT
Movement	W					
Lane Configurations	150	9	688	127	31	250
Traffic Volume (vph)	150	9	688	127	31	250
Future Volume (vph)	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpb)	3.7	3.7	3.7	3.7	3.4	3.7
Lane Width	6.0	6.0	6.0	6.0	6.0	6.0
Total Lost time (s)	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.99	0.98	1.00	0.98	1.00	1.00
Frbp. ped/bikes	1.00	1.00	0.98	1.00	1.00	1.00
Frbp. ped/bikes	0.95	1.00	0.98	1.00	0.95	1.00
Flt Protected	1773	1801	1690	1883		
Satd. Flow (prot)	0.95	1.00	0.27	1.00		
Flt Permitted	1773	1801	484	1883		
Satd. Flow (perm)	1.00	1.00	1.00	1.00	1.00	1.00
Peak-hour factor, PHF	150	9	688	127	31	250
Adj. Flow (vph)	3	0	6	0	0	0
RTOR Reduction (vph)	156	0	809	0	31	250
Lane Group Flow (vph)	50	50	50	50	50	50
Confl. Peds. (#/hr)	Prot	NA	NA	Perm	NA	NA
Turn Type	8	2	6			
Protected Phases						
Permitted Phases	13.9	64.1	64.1	64.1	64.1	64.1
Actuated Green, G (s)	0.15	0.71	0.71	0.71	0.71	0.71
Effective Green, g (s)	6.0	6.0	6.0	6.0	6.0	6.0
Actuated g/C Ratio	3.0	3.0	3.0	3.0	3.0	3.0
Clearance Time (s)	273	1282	344	1341		
Vehicle Extension (s)	v/s Ratio Prot	c0.09	c0.45	0.13		
Lane Grp Cap (vph)	v/c Ratio	0.57	0.63	0.09	0.19	
v/s Ratio Prot	Uniform Delay, d1	35.3	6.8	4.0	4.3	
v/c Ratio	Progression Factor	1.00	1.09	1.00	1.00	
Uniform Delay, d1	Incremental Delay, d2	2.9	2.0	0.5	0.3	
Progression Factor	Delay (s)	38.2	9.3	4.5	4.6	
Incremental Delay, d2	Level of Service	D	A	A	A	
Delay (s)	Approach Delay (s)	38.2	9.3	4.6	4.6	
Level of Service	Approach LOS	D	A	A	A	
Approach Delay (s)	Intersection Summary					
Approach LOS	HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B		
HCM 2000 Volume to Capacity ratio						0.62
Actuated Cycle Length (s)						12.0
Sum of lost time (s)						C
Intersection Capacity Utilization						71.1%
ICU Level of Service						C
Analysis Period (min)						15
Critical Lane Group						

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: PHASE 1 Bolton King&Emil - 1h.j9
 Path: G:\0 DEMASIMULATIONS\01 BA Group\7694-01 Bolton\Analysis\01 May_2023\ARCADY ROUNDABOUT
 Report generation date: 16/05/2023 20:54:17

- »EX_2022, AM
- »EX_2022, PM
- »FB_2031, AM
- »FB_2031, PM
- »PH1_2031, AM
- »PH1_2031, PM

Summary of junction performance

Queue (Veh)	95% Queue (Veh)	AM			PM			Network Residual Capacity	Junction LOS	Junction Delay (s)	RFC	LOS	Junction Delay (s)	RFC	LOS	Junction Delay (s)	Network Residual Capacity
		Queue (Veh)	95% Queue (Veh)	Delay (s)	Delay (s)	Delay (s)	Delay (s)										
[Lane Simulation] - EX_2022																	
Arm 1	0.5	1.7	3.88	A			0.4	1.6	3.70	A							%
Arm 2	0.5	1.6	4.47	A			1.1	3.2	5.48	A			4.65				[]
Arm 3	0.6	1.7	3.64	A			0.2	1.1	3.87	A							[]
[Lane Simulation] - FB_2031																	
Arm 1	0.4	1.0	3.44	A			0.4	1.5	3.45	A							%
Arm 2	0.4	1.9	4.01	A			1.1	3.6	5.03	A			4.26				%
Arm 3	0.3	1.0	3.41	A			0.1	1.0	3.27	A							[]
[Lane Simulation] - PH1_2031																	
Arm 1	1.1	3.0	4.65	A			0.8	3.1	4.07	A							%
Arm 2	0.9	3.3	5.48	A			3.9	11.2	13.29	B			8.98				[]
Arm 3	0.6	2.2	4.21	A			0.4	1.5	4.72	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	
Job number	
Enumerator	BACTORDINA
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 queuing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75	✓	✓	✓	Delay	0.65	36.00	20.00

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1844813358	101	2.47

Demand Set Summary

ID	Scenario name	Time Period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D1	EX_2022	AM	EX	FLAT	08:00	09:00	60	✓	✓
D2	EX_2022	PM	EX	FLAT	16:00	17:00	60	✓	✓
D3	FB_2031	AM	FB	FLAT	08:00	09:00	60	✓	✓
D4	FB_2031	PM	FB	FLAT	16:00	17:00	60	✓	✓
D5	PH1_2031	AM	Phase 1	FLAT	08:00	09:00	60	✓	✓
D6	PH1_2031	PM	Phase 1	FLAT	16:00	17:00	60	✓	✓

Analysis Set Details

ID	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
All	✓	✓	100.000	100.000



EX_2022, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	3.96	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Arms

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)	PH - Conflict 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
		3			Infinity	0	99999
2	1 [Give-way line]	1	3		Infinity	0	99999
		2	1,3		Infinity	0	99999
		3			Infinity	0	99999
3	1 [Give-way line]	1	1,2		Infinity	0	99999
		2	2		Infinity	0	99999
		3			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	Description	Traffic profile type	Start time (HH:MM)	Finish time (HH:MM)	Time segment length (min)	Single time segment only	Run automatically
D1	EX_2022	AM	EX	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	418	100.000
2		FLAT	✓	315	100.000
3		FLAT	✓	406	100.000

Origin-Destination Data

Demand (Veh/hr)

	To		
	1	2	3
From 1	0	302	116
From 2	244	0	71
From 3	180	226	0

Vehicle Mix



Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	12	6
	2	8	0	25
	3	4	9	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max Bsh. percentage Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.88	0.5	1.7	A	433	433
2	4.47	0.5	1.6	A	310	310
3	3.64	0.6	1.7	A	409	409

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr) (ext side)	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	432	432	228	430	421	0.0	0.5	3.884	A
2	310	310	124	308	534	0.0	0.5	4.469	A
3	409	409	241	408	191	0.0	0.6	3.638	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q90 (Veh)	Q95 (Veh)
1	0.54	0.00	0.00	1.39	1.74
2	0.54	0.00	0.00	1.33	1.65
3	0.60	0.00	0.00	0.93	1.72

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	169	1000	0.164	169	0.0	0.2	3.706	A
			2	2.3	263	1055	0.249	262	0.0	0.3	3.999	A
	Exit	1	1	3	44	897	0.048	44	0.0	0.0	4.057	A
2	Entry	1	1	1.3	267	1026	0.260	264	0.0	0.5	4.535	A
			1	1	554	1170	0.238	534	0.0	0.0	0.000	A
	Exit	1	1	1.2	278	1170	0.238	277	0.0	0.4	3.746	A
3	Entry	1	1	2	131	1126	0.117	130	0.0	0.2	3.404	A
			1	1	191	1126	0.117	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	0.19	0.00	0.00	0.49	1.06
			2	0.34	0.00	0.00	0.91	1.42
2	Exit	1	1	0.00	0.00	0.00	0.00	0.00
			1	0.05	0.00	0.00	0.00	-0.01
3	Exit	1	1	0.49	0.00	0.00	1.29	1.61
			1	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.41	0.00	0.00	0.81	1.18
			2	0.19	0.00	0.00	0.48	0.75
3	Exit	1	1	0.00	0.00	0.00	0.00	0.00

EX_2022, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1,2,3	4.65	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	EX_2022	PM	EX	FLAT	16:00	17:00	60	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O.D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	491	100.000
2		FLAT	✓	731	100.000
3		FLAT	✓	165	100.000

Origin-Destination Data

Demand (Veh/hr)

	To
	1 2 3
From	1 0 315 176
	2 415 0 316
	3 191 74 0

Vehicle Mix

Heavy Vehicle Percentages

	To
	1 2 3
From	1 0 6 7
	2 8 0 6
	3 9 22 0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max 85th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.70	0.4	1.6	A	495	495
2	5.48	1.1	3.2	A	725	725
3	3.87	0.2	1.1	A	158	158

Main Results for each time segment

16:00 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	495	495	74	496	495	0.0	0.4	3.699	A
2	725	725	174	728	395	0.0	1.0	5.478	A
3	157	157	413	157	489	0.0	0.2	3.872	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)
1	0.42	0.00	0.00	1.22	1.59
2	1.06	0.00	0.24	2.42	3.25
3	0.20	0.00	0.00	0.42	1.15

Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

Lanes: Main Results for each time segment

16:00 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	Entry	1	1	2	178	1137	0.157	179	0.0	0.1	3.472	A
			2	2.3	317	1139	0.278	317	0.0	0.3	3.860	A
			3	496	496	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Entry	1	1	3	209	1054	0.198	209	0.0	0.2	3.935	A
			2	1.3	517	1037	0.499	519	0.0	0.8	6.112	A
			3	395	395	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	Entry	1	1	1.2	118	1030	0.115	118	0.0	0.1	3.879	A
			2	2	39	947	0.042	39	0.0	0.0	3.882	A
			3	489	489	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Lanes: Queue Variation Results for each time segment

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)
1	Entry	1	1	0.09	0.00	0.00	0.00	0.37
		2	2	0.33	0.00	0.00	0.00	1.46
2	Exit	1	1	0.00	0.00	0.00	0.00	0.00
		2	2	0.24	0.00	0.00	0.64	1.89
3	Entry	1	1	0.81	0.00	0.00	1.85	2.63
		2	2	0.00	0.00	0.00	0.00	0.00
3	Exit	1	1	0.19	0.00	0.00	0.43	1.06
		2	2	0.02	0.00	0.00	0.00	0.00
3	Exit	1	1	0.00	0.00	0.00	0.00	0.00
		2	2	0.00	0.00	0.00	0.00	0.00

16:00 - 17:00

FB_2031, 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	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	FB_2031	AM	FB	FLAT	08:00	09:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	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 0 390 127
	2 287 0 78
	3 197 247 0

Vehicle Mix



Heavy Vehicle Percentages

From	To		
	1	2	3
1	0	0	0
2	0	0	0
3	0	0	0

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max Bsh. percentage Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.44	0.4	1.0	A	461	461
2	4.01	0.4	1.9	A	344	344
3	3.41	0.3	1.0	A	455	455

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 (ext side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	461	461	259	461	460	0.0	0.4	3.445	A
2	344	344	131	342	589	0.0	0.4	4.014	A
3	455	455	264	456	209	0.0	0.3	3.407	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)
1	0.42	0.00	0.00	0.83	0.98
2	0.45	0.00	0.00	1.32	1.89
3	0.35	0.00	0.00	0.78	0.98

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	178	1146	0.155	178	0.0	0.1	3.262	A
			2	2.3	282	1146	0.246	283	0.0	0.3	3.551	A
2	Entry	1	1	3	49	1134	0.044	50	0.0	0.0	3.229	A
			2	1.3	294	1134	0.260	293	0.0	0.4	4.140	A
3	Entry	1	1	1.2	306	1224	0.250	307	0.0	0.3	3.575	A
			2	2	149	1224	0.122	149	0.0	0.1	3.045	A
	Exit	1	1		209			209	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)	Q80 (Veh)	Q95 (Veh)
1	Entry	1	1	0.10	0.00	0.00	1.00	1.00
			2	0.32	0.00	0.00	0.72	0.92
2	Exit	1	1	0.00	0.00	0.00	0.00	0.00
			2	0.04	0.00	0.00	0.00	0.00
3	Exit	1	1	0.41	0.00	0.00	1.24	1.66
			2	0.00	0.00	0.00	0.00	0.00
3	Entry	1	1	0.26	0.00	0.00	0.63	0.89
			2	0.09	0.00	0.00	0.00	1.00
	Exit	1	1	0.00	0.00	0.00	0.00	0.00



FB_2031, 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 percentages may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

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/Junction

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	FB_2031	PM	FB	FLAT	16:00	17:00	60	✓	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use OD data	Average Demand (Veh/hr)	Scaling Factor (%)
1		FLAT	✓	537	100.000
2		FLAT	✓	800	100.000
3		FLAT	✓	181	100.000

Origin-Destination Data

Demand (Veh/hr)

	To	1	2	3
From	1	0	245	192
	2	454	0	346
	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 85th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	3.45	0.4	1.5	A	547	547
2	5.03	1.1	3.6	A	802	802
3	3.27	0.1	1.0	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 (ext side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	547	547	83	548	559	0.0	0.4	3.451	A
2	802	802	194	801	437	0.0	1.1	5.029	A
3	182	182	458	184	537	0.0	0.1	3.266	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)
1	0.40	0.00	0.00	0.90	1.49
2	1.07	0.00	0.10	2.58	3.59
3	0.12	0.00	0.00	1.00	1.00

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	189	1213	0.164	189	0.0	0.2	3.147	A
			2	2.3	348	1213	0.287	349	0.0	0.2	3.625	A
			Exit	1	559			0.0	0.0	0.000	A	
2	Entry	1	1	3	233	1111	0.210	233	0.0	0.2	3.771	A
			2	1.3	569	1111	0.512	568	0.0	0.9	5.542	A
			Exit	1	437			0.0	0.0	0.000	A	
3	Entry	1	1	1.2	140	1150	0.122	141	0.0	0.1	3.321	A
			2	2	43	1150	0.037	43	0.0	0.0	3.094	A
			Exit	1	537			0.0	0.0	0.000	A	

Lanes: Queue Variation Results for each time segment

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)	Obs (Veh)
1	Entry	1	1	0.20	0.00	0.00	0.49	0.78	
	Exit	1	1	0.00	0.00	0.00	0.49	0.91	
2	Entry	1	1	0.21	0.00	0.00	0.52	0.82	
	Exit	1	1	0.66	0.00	0.00	1.91	3.32	
3	Entry	1	1	0.09	0.00	0.00	0.00	1.00	
	Exit	1	2	0.03	0.00	0.00	0.00	0.00	

16:00 - 17:00

Ph1_2031, 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	4.75	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only	Run automatically
D5	Ph1_2031	AM	Phase 1	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	✓	793	100.000
2		FLAT	✓	443	100.000
3		FLAT	✓	464	100.000

Origin-Destination Data

Demand (Veh/hr)

	To	1	2	3
From	1	0	610	183
	2	385	0	78
	3	217	247	0

Vehicle Mix

Heavy Vehicle Percentages

	To		
	1	2	3
From	1	0	12
	2	8	0
	3	4	22

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (Veh)	Max Bkch percentage Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	4.68	1.1	3.0	A	802	802
2	5.48	0.9	3.3	A	439	439
3	4.21	0.6	2.2	A	461	461

Main Results for each time segment

08:00 - 09:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Throughput (ext side) (Veh/hr)	Throughput (veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	802	802	247	570	604	0.0	1.0	4.677	A
2	439	439	182	438	869	0.0	0.8	5.479	A
3	460	460	359	453	261	0.0	0.5	4.210	A

Queue Variation Results for each time segment

08:00 - 09:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)
1	1.10	0.00	0.39	2.36	3.00
2	0.86	0.00	0.00	1.74	3.29
3	0.57	0.00	0.00	1.46	2.17

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	Lane level	Lane Side	Destination arms	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	1	Entry	2	346	1016	0.341	347	0.0	0.4	4.388	A
		Exit	2,3	457	1030	0.443	458	0.0	0.7	4.896	A
2	1	Entry	1	570	868	0.651	570	0.0	0.1	4.033	A
		Exit	1,3	385	1020	0.377	384	0.0	0.7	5.672	A
3	1	Entry	1,2	322	1073	0.300	321	0.0	0.3	4.343	A
		Exit	2	138	953	0.145	137	0.0	0.2	3.912	A

Lanes: Queue Variation Results for each time segment

08:00 - 09:00

Arm	Side	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q95 (Veh)	CB5 (Veh)
1	Entry	1	1	0.43	0.00	0.00	0.99	1.49	1.73
			2	0.68	0.00	0.00	1.50	1.73	1.73
2	Exit	1	1	0.00	0.00	0.00	0.00	0.00	0.00
			2	0.12	0.00	0.00	0.00	1.59	1.59
3	Exit	1	1	0.00	0.00	0.00	0.00	0.00	0.00
			2	0.74	0.00	0.00	1.73	2.56	2.56

Ph1_2031, 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	8.98	A

Junction Network Options

Driving side	Lighting
Right	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Ph1_2031	PM	Phase 1	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	✓	762	100.000
2		FLAT	✓	1120	100.000
3		FLAT	✓	245	100.000

Origin-Destination Data

Demand (Veh/hr)

	To
	1 2 3
From	1 0 532 230
	2 774 0 346
	3 164 81 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 85th percentile Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1	4.07	0.8	3.1	A	767	767
2	13.29	3.9	11.2	B	1121	1121
3	4.72	0.4	1.5	A	242	242

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	767	767	82	768	959	0.0	0.8	4.068	A
2	1123	1123	228	1142	621	0.0	3.9	13.287	B
3	242	242	797	243	572	0.0	0.4	4.717	A

Queue Variation Results for each time segment

16:00 - 17:00

Arm	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q85 (Veh)
1	0.78	0.00	0.00	1.69	3.06
2	3.93	0.00	2.51	7.84	11.20
3	0.37	0.00	0.00	0.83	1.46

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	313	1138	0.275	313	0.0	0.3	3.682	A
			2	2.3	454	1140	0.398	455	0.0	0.5	4.323	A
			Exit	1	959		0.0	0.0	0.0	0.0	0.0	0.0
2	Entry	1	1	3	297	1026	0.289	298	0.0	0.4	4.729	A
			2	1.3	826	1022	0.807	843	0.0	3.5	16.358	C
			Exit	1	621		0.0	0.0	0.0	0.0	0.0	0.0
3	Entry	1	1	1.2	194	899	0.216	195	0.0	0.3	4.789	A
			2	2	48	818	0.059	48	0.0	0.1	4.415	A
			Exit	1	572		0.0	0.0	0.0	0.0	0.0	0.0



Lanes: Queue Variation Results for each time segment

16:00 - 17:00

Arm	Slide	Lane level	Lane	Mean (Veh)	Q05 (Veh)	Q50 (Veh)	Q80 (Veh)	Q85 (Veh)
1	Entry	1	1	0.29	0.00	0.00	0.70	0.93
	Exit	1	2	0.49	0.00	0.00	0.93	1.72
2	Entry	1	1	0.43	0.00	0.00	0.00	0.00
	Exit	1	2	3.50	0.00	1.91	7.44	9.79
3	Entry	1	1	0.27	0.00	0.00	0.64	1.12
	Exit	1	2	0.10	0.00	0.00	0.00	0.54

Attachment E:
Signal Warrants

Input Data Sheet

Analysis Sheet

Results Sheet

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?

Urban

Population >= 10,000

AND

Speed < 70 km/hr

e.- What is the eight hour vehicle volume at the intersection? (Please fill in table below)

Hour Ending	Main Eastbound Approach			Minor Northbound Approach			Main Westbound Approach			Minor Southbound Approach			Pedestrians Crossing Main Road
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	17	215						262	53	168		55	10
8:00	28	344						431	87	269		91	10
9:00	34	429						524	106	336		111	10
10:00	17	215						262	53	168		55	10
15:00	48	283						309	144	107		37	10
16:00	77	453						508	237	172		61	10
17:00	96	566						618	288	214		74	10
18:00	48	283						309	144	107		37	10
Total	365	2,788	0	0	0	0	0	3,223	1,112	1,541	0	523	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 1 King & West Site access

Count Date: 2022

Summary Results

Justification		Compliance		Signal Justified?	
				YES	NO
1. Minimum Vehicular Volume	A Total Volume	96	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Volume	85	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	87	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100	%	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	85	%	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	B Justification 2	87	%	<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"/>

Input Data Sheet

Analysis Sheet

Results Sheet

Proposed Collision

GO TO Justification:

What are the intersecting roadways?

Phase 1_ 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		90	17				5	323		112		7	10
8:00		240	46				8	528		183		19	10
9:00		180	34				10	647		224		14	10
10:00		90	17				5	323		112		7	10
15:00		344	64				16	125		75		5	10
16:00		543	101				28	222		133		7	10
17:00		688	128				32	251		150		9	10
18:00		344	64				16	125		75		5	10
Total	0	2,519	472	0	0	0	120	2,546	0	1,065	0	73	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 1_ Gore Rd & North Site access

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	56 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Delay to Cross Traffic	A Main Road	84 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Crossing Road	100 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Combination	A Justificaton 1	56 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Justification 2	84 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. 4-Hr Volume		100 %		<input checked="" type="checkbox"/>	<input type="checkbox"/>

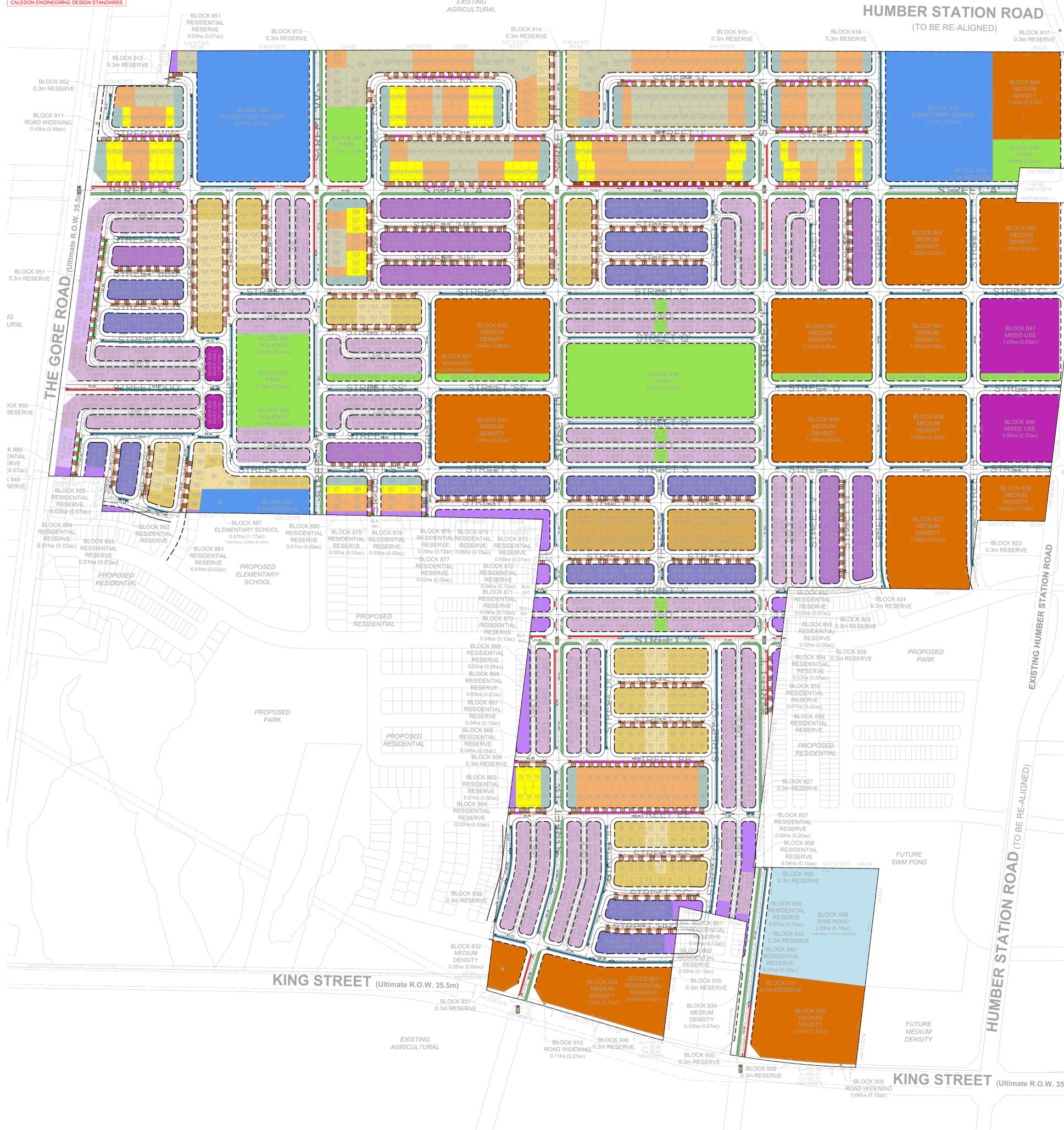
5. Collision Experience		73 %		<input type="checkbox"/>	<input checked="" type="checkbox"/>
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6. Pedestrians	A Volume	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	B Delay	Justification not met		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Attachment F:
Parking Allocation Plan

PRELIMINARY DRAFT
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CONFIRMATION OF TOWN OF CALEDON ENGINEERING DESIGN STANDARDS

- GENERAL NOTES**
- DRAFT PLAN OF SUBDIVISION DATED MAY 6, 2023. PREPARED BY GEA GROUP LIMITED.
 - OTHER DIMENSIONS HAVE BEEN ADOPTED AS PER TOWN OF CALEDON ENGINEERING DESIGN STANDARDS.
 - TYPICAL TWO-WAY CYCLE TRACKS ARE ILLUSTRATED FOR ON-STREET PARKING ALLOCATION PURPOSES. LOCATION OF SIDEWALK AND PARKWAY CYCLE TRACKS WILL BE DETERMINED DURING DETAILED DESIGN STAGE.
 - THIS PLAN IS A PRELIMINARY DRAFT. IT IS NOT TO BE USED FOR CONSTRUCTION OR AS A BASIS FOR OBTAINING PERMITS.
 - LOCATION OF MAILED AND FIRE HYDRANTS CANNOT BE DETERMINED AT THIS STAGE. DRIVERS WILL IMPACT ON-STREET PARKING SPACES.
 - ON-STREET PARKING SUPPLY WILL BE DETERMINED UPON PROCEEDING TO DETAILED DESIGN STAGE. DRIVERS WILL IMPACT ON-STREET PARKING SPACES.
 - LOCATION OF MAILED AND FIRE HYDRANTS CANNOT BE DETERMINED AT THIS STAGE. DRIVERS WILL IMPACT ON-STREET PARKING SPACES.
- LEGEND**
- DRIVEWAYS
 - 4.0m PARALLEL PARKING SPACE
 - 4.5m PARALLEL PARKING SPACE
 - 5.0m PARALLEL PARKING SPACE
 - 5.5m PARALLEL PARKING SPACE
 - 6.0m PARALLEL PARKING SPACE
 - TYPICAL TWO-WAY CYCLE TRACK
 - PARKING BY LOT
 - PARKING BY LENGTH
 - STORAGE AND TAPER - NO PARKING ZONE
 - POTENTIAL SIGNALIZED INTERSECTIONS
- DRIVEWAY WIDTHS**
- 1/4 DETACHED HOME - DOUBLE DRIVEWAY: 4.0m
 - 3/4 DETACHED HOME - DOUBLE DRIVEWAY: 4.0m
 - 2/4 DETACHED HOME - DOUBLE DRIVEWAY: 4.0m
 - 3/4 DETACHED HOME - SINGLE DRIVEWAY: 4.0m
 - 2/4 DETACHED HOME - SINGLE DRIVEWAY: 4.0m
 - 1/4 DETACHED HOME - DOUBLE DRIVEWAY: 4.0m
- ON-STREET PARKING SUPPLY**
- | Units | Parking | Ratio |
|-------|---------|-------|
| 2275 | 1641 | 0.72 |
- ON-STREET PARKING MODULE**
-



Street Name	From	To	Parking Orientation	R.O.W.	Length (m)	# of Lots	Total Spaces	Total Spaces By Length
KK	KK	KK	North	18.0m	142.1	13	12	
KK	KK	KK Rd	North	18.0m	9.46	1	0	
KK	KK	KK	North	18.0m	122.95	11	9	
KK	KK	KK	South	18.0m	460.75	39	32	
ZZ	ZZ	Gore Rd	North	18.0m	81	10	5	25
ZZ	ZZ	Gore Rd	North	22.0m	169.96	8	4	10
ZZ	ZZ	ZZ	North	22.0m	52.95	5	3	1
ZZ	ZZ	ZZ	North	22.0m	106.8	9	9	1
ZZ	ZZ	ZZ	North	22.0m	143.95	13	7	18
ZZ	ZZ	ZZ	North	22.0m	68.95	5	4	10
ZZ	ZZ	ZZ	North	22.0m	125.1	19	8	18
ZZ	ZZ	ZZ	North	18.0m	162.1	27	11	18
ZZ	ZZ	ZZ	North	18.0m	82.65	13	12	
ZZ	ZZ	ZZ	North	18.0m	125.1	19	8	18
ZZ	ZZ	ZZ	North	18.0m	162.1	27	11	18
ZZ	ZZ	ZZ	North	18.0m	85.85	14	6	
ZZ	ZZ	ZZ	North	18.0m	97	10	14	
ZZ	ZZ	ZZ	North	18.0m	97	10	14	
ZZ	ZZ	ZZ	North	18.0m	122.95	11	18	
ZZ	ZZ	ZZ	North	18.0m	141.65	13	21	
ZZ	ZZ	ZZ	North	18.0m	141.65	13	21	
ZZ	ZZ	ZZ	North	18.0m	119.75	9	7	13
ZZ	ZZ	ZZ	North	18.0m	95.54	13	5	13
ZZ	ZZ	ZZ	North	18.0m	143.95	13	11	18
ZZ	ZZ	ZZ	North	18.0m	119.75	9	7	13
ZZ	ZZ	ZZ	North	18.0m	24.5	2	3	
ZZ	ZZ	ZZ	North	18.0m	104.45	20	18	
ZZ	ZZ	ZZ	North	18.0m	102	10	15	
ZZ	ZZ	ZZ	North	18.0m	122.95	11	18	
ZZ	ZZ	ZZ	North	18.0m	143.75	13	21	
ZZ	ZZ	ZZ	North	18.0m	143.75	13	21	
ZZ	ZZ	ZZ	North	18.0m	12.9	2	2	
ZZ	ZZ	ZZ	North	18.0m	102.27	15	15	
ZZ	ZZ	ZZ	North	18.0m	146.4	16	22	
ZZ	ZZ	ZZ	North	18.0m	88.53	13	1	1
ZZ	ZZ	ZZ	North	18.0m	146.4	16	22	
ZZ	ZZ	ZZ	North	18.0m	26.46	4	4	
ZZ	ZZ	ZZ	North	18.0m	118.61	14	20	
ZZ	ZZ	ZZ	North	18.0m	118.61	14	20	
ZZ	ZZ	ZZ	North	18.0m	97	10	14	
ZZ	ZZ	ZZ	North	18.0m	146.4	16	22	
ZZ	ZZ	ZZ	North	18.0m	146.4	16	22	
ZZ	ZZ	ZZ	North	18.0m	141.65	13	21	
ZZ	ZZ	ZZ	North	18.0m	141.65	13	21	
ZZ	ZZ	ZZ	North	18.0m	143.75	13	21	
ZZ	ZZ	ZZ	North	18.0m	143.75	13	21	
ZZ	ZZ	ZZ	North	18.0m	12.9	2	2	
ZZ	ZZ	ZZ	North	18.0m	86.92	10	13	
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
ZZ	ZZ	ZZ	North	18.0m	146.4	16	22	
ZZ	ZZ	ZZ	North	18.0m	27.65	4	4	
ZZ	ZZ	ZZ	North	18.0m	13.94	16	6	2
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
ZZ	ZZ	ZZ	North	18.0m	109.35	16	6	13
ZZ	ZZ	ZZ	North	18.0m	13.94	16	6	2
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
ZZ	ZZ	ZZ	North	18.0m	109.35	16	6	13
ZZ	ZZ	ZZ	North	18.0m	13.94	16	6	2
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
ZZ	ZZ	ZZ	North	18.0m	109.35	16	6	13
ZZ	ZZ	ZZ	North	18.0m	13.94	16	6	2
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
ZZ	ZZ	ZZ	North	18.0m	109.35	16	6	13
ZZ	ZZ	ZZ	North	18.0m	13.94	16	6	2
ZZ	ZZ	ZZ	North	18.0m	109.48	16	6	13
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ZZ	ZZ	ZZ	North	18.0m	13.94	16	6	2
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